AN EXPERIMENTAL STUDY TO ASSESS THE DEEPANA ACTIVITY OF ARDRAKA (WET *ZINGIBER OFFICINALE* ROSCOE)AND SHUNTI (DRIED *ZINGIBER OFFICINALE* ROSCOE) IN RELATION TO ITS RASA AND VIPAKA

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Annexure III

Tilak Maharashtra Vidyapeeth, Pune

Undertaking

I **Vd.Poornima B**, is the Ph.D. Scholar of the Tilak Maharashtra Vidyapeeth in Dravyaguna subject. Thesis entitled **"An Experimental Study to Assess the Deepana Activity of Ardraka (Wet *Zingiber Officinale* Roscoe) and Shunti (Dried *Zingiber Officinale* Roscoe) in relation to its Rasa and Vipaka"** under the supervision of. Dr. Yogini R. Kulkarni, Solemnly affirm that the thesis submitted by me is my own work. I have not copied it from any source. I have gone through extensive review of literature of the related published / unpublished research works and the use of such references made has been acknowledged in my thesis. The title and the content of research is original. I understand that, in case of any complaint especially plagiarism, regarding my Ph.D. research from any party, I have to go through the enquiry procedure as decided by the Vidyapeeth at any point of time. I understand that, if my Ph.D. thesis (or part of it) is found duplicate at any point of time, my research degree will be withdrawn and in such circumstances, I will be solely responsible and liable for any consequences arises thereby. I will not hold the TMV, Pune responsible and liable in any case. I have signed the above undertaking after reading carefully and knowing all the aspects therein.

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Annexure IV

CERTIFICATE OF THE SUPERVISOR

It is certified that work entitled **"An Experimental Study to Assess the Deepana Activity of Ardraka (Wet *Zingiber Officinale* Roscoe) and Shunti (Dried *Zingiber Officinale* Roscoe) in relation to its Rasa and Vipaka"** is an original research work done by **Vd. Poornima B** Under my supervision for the degree of Doctor of Philosophy in **Dravyaguna Vigyana** to be awarded by Tilak Maharashtra Vidyapeeth, Pune.

To best of my knowledge this thesis

- embodies the work of candidate himself/herself
- has duly been completed
- fulfils the requirement of the ordinance related to Ph. D. degree of the TMV
- up to the standard in respect of both content and language for being referred to the examiner.

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Dr Poornima B

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AN - Ashtanga Nighantu

AR – Abhidana Rathnamala

AS – Ashtanga Samgraha

BP – Bhavaprakasha Samhita

BPN – Bhavaprakasha Nighantu

BR – Bhaishajya Rathnavali

CD – Chakradatta

Cha - Charaka Samhita

Chakra- Chakrapanidatta

Chi – Chikitsa Sthana

Dal – Dalhana

DN – Dhanvantari Nighantu

Gang – Gangadhara

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Vi – Vimana sthana

YR – Yogarathnakara

ABSTRACT

Rasa (Taste) is considered to be the base and the foremost tool for the determination and assessment of the Pharmacological properties as well as actions. The minute variations in the Rasapanchaka of the substance have impact over the pharmacological action in taratamata(variation in intensity).There is a gap prevailing in the present Pharmacopeia for the assessment of Tartamatwa (variation in the intensity) of Rasa (taste) perception and its assessment with respect to its Karma. Thus, in this study an effort is made to evaluate the Taratamatwa (variation in the intensity) with respect to its Rasa and karma. To study in this aspect, Katurasa was selected and the two state of Ginger (wet & Dry) which are having same Rasa, Virya, Vipaka, Deepana Pachana action but showing different guna were taken. This study evaluates Ardraka (wet Ginger) and Shunti (DryGinger) in relation to its Katu rasa (Pungent Taste) with its Taratamatwa (variation in the intensity), Vipaka as well as the Deepana karma.

Aim: To assess Deepana activity of Ardraka and Shunti with reference to its rasa and vipaka.

Material and methods: Analytical study-Pharmacognostical and Phytochemical screening for Ardraka and Shunti was done. **Experimental study**– In experimental study, Deepana model was carried out to assess the Katurasa Deepana Karma of both Ardraka and Shunti. **Observational study**- to assess Taratamatwa of kataurasa by taste threshold method so as to evaluate and establish relation between Rasa (taste) with its Taratamatwa (variation in intensity) and Guna,Vipaka.

Results: In Analytical study - It was found that Shunti has more pungent compounds than the Ardraka with the presence of Shogaols. 6-Shogoal is more pungent compound than 6 & 8 Gingerol. **In experimental study-** Ardraka shows better Deepana activity than Shunti in relation to Katu rasa is accepted. **Observational study**- Pungency value of Shunti is 2.3, which is more pungent than Ardraka with value of 2.9.Thus, Shunti is having more Katutwa in terms of taste threshold causing more irritation on tongue etc, than Ardaka and it is because of concentrated pungent principles in it.

Conclusion: Rasa-pungency value and pungent principles / phytochemicals are found to be more in Shunti as per the analytical and observational study**.** Deepana activity- Ardraka and Shunti both have shown Deepana karma but Ardraka relatively more Deepana Pachana activity in comparison to Shunti.

INTRODUCTION

Dravyaguna forms integral part of Ayurveda and is a core branch.It is more of clinical pharmacology as it evaluates the drugs on the basis of their therapeutic effects, mode of action and their toxic effects. We find in authentic texts of Ayurveda mentioning the 50 pharmacological categories of medicinal plants, even though there was no Pharmacological testing during that ancient period.

With the advances in the Research, the focus has turned towards the Medicinal plants and their specific uses in the therapeutics. This is being studied at the preclinical level on laboratory animals with the Reverse Pharmacological approach to confirm the pharmacological actions of the medical plants.

In Ayurveda, the Panchapadartha (five concepts of the substance) namely *Rasa* (Taste), *Guna* (Properties), *Virya* (Potency), *Vipaka* (Rasa after digestion and metabolism) and *Prabhava* (specific pharmacological properties of substance) are considered to be the pharmacological principles (*Rasapanchaka*) based of which the mode of action of the drug is established.

Ayurvedic pharmacological principles (*Rasapanchak*a) have better potential to offer in regard to new drug development as well as selection of the drug for treatment. Among the *Rasapanchanka*, *Rasa* can be taken as prime tool to assess the pharmacological behavior of a substance. Phytoconstituents can be separated from drug by using analytical technique like chromatography, but that alone doesn't indicate rasa property of the given sample.

Rasa (taste) is considered to be the specific state of activation of the *Panchamahabhuta*. With the advent of the technology and the development of the science new research have been carried out to assess these concepts in modern parlance. The concept of Taste and the study of its mode of perception and sensibility is a complex biophysical and psychological event and translation of rasa cannot be exactly analyzed without the help of tongue.

The Acharya Charaka described the method of perceiving rasa as '*Rasonipate dravyanam*' i.e. Taste with the tongue. Selection of *Rasa* based on its *Taratamatwa* (intensity) can be utilized very specifically in the treatment aspect. Recent Researches have suggested electronic tongue to replace biological organ i.e., tongue. Considering these aspects in view and also the *Rasa jnana* (knowledge of Rasa), which is a subjective feeling, there is a need to evaluate and set the objective parameters

Till now research has been done on Rasa with analytical technique but there is no research done to evaluate and establish a prime tool to draw the link between the chemical constituents and *Rasapanchaka* index of the drug. There is gap prevailing in Pharmacopeial system between the analytical parameters and textually quoted rasa for the quality control of herbal drugs and its application in clinical aspect.

Among the *Shadrasa*, *Katu Rasa* is used in diet to make it more desirable and especially in Indian Cuisine it is used as one among the spices. In this study an effort is made to evaluate the *Katu rasa* along with setting the objective parameters for the subjective criteria by incorporating the contemporary methods of drug evaluation such as HPLC, GCMS in analytical study, Biological evaluation as well as Taste threshold analysis with Likert value scale, Visual analog scale (VAS)and Pungency value estimation.

To evaluate and establish the pharmacological action, *KatuRasa* pradhana Karma- *Deepana* was selected. The *Deepana* and *Pachana* property was studied in the *Deepana* animal model established by Dr.*Ravishankar B et.al*.

Aim and Objectives

Aim

An Experimental study to assess the Deepana activity of Ardraka (wet *Zingiber officinale* Roscoe) and Shunti (dried *Zingiber officinale* Roscoe) in relation to its Rasa and Vipaka.

Objectives

1. To evaluate and differentiate the chemical constituents of Ardraka (*Zingiber officinale* Roscoe) and Shunti (dried *Zingiber officinale* Roscoe*)* by analytical techniques.
2. To evaluate the Agnideepana karma of selected drug in ardra and shuska state – Ardraka *(Zingiber officinale* Roscoe*)* and Shunti (dried *Zingiber officinale* Roscoe*)* by experimental model.
3. To assess Taratamatva of the Katu Rasa in Ardra and Shuska state of selected drug *Zingiber officinale* Roscoe by taste threshold method.

Research Question

1. What is the difference between the Chemical constituents in aadra and shuska state of selected *Katu rasa* dravya (Ardraka and Shunti) by analytical techniques?
2. Which will be more *Agnideepaka*? Is it aadra or shuska state of selected Katu rasa dravya (Ardraka and Shunti) in experimental studies?
3. Can the assessment of the taratamatva of Katu Rasa in aadra and shuska state of selected drug by taste threshold method?

Hypothesis

H_1: Ardraka shows better Deepana activity than Shunti in relation to Katu rasa.

H_0: There is no difference of Deepana activity among Ardraka and Shunti in relation to Katu rasa

Previous work done

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5.1 CONCEPT OF RASA

There are many meanings for the word "*Rasa*". It conveys different meanings suitable to the respective branches. In Ayurveda we find reference of rasa in following contexts,

- Rasa as **Dhatu**: Among seven dhatus in human body, rasa is the first dhatu. It is in a liquid form and in a constant state of movement.
- Rasa as **Parada**: In Rasashashtra, parade is synonymous to rasa as it has capacity of converting other metals like gold etc. in to it. It available in liquid form at normal temperature.
- Rasa as **Kalpana**: The juice of a plant which is prepared by crushing the plant is called as swarasa in Bhaishajya kalpana.
- Rasa as **Indriyartha**: The object, known by rasanendriya, the sense organ located in the tongue is called as rasa.

In all diversity of various texts with concerned to the subject Dravyaguna the word Rasa is used for the special sense known through the Rasana or Rasanenedriya (tongue or taste buds) and it is one of the saptapadartha.

Nirukti (Etymology)

रस–आस्वादने,रसतीततयद्वाररस्यतेइतत।-रसनेतरियग्राह्यवस्तु (Shabdakalpadruma)

Rasa is something experienced by an individual while consuming a Dravya[1]. Rasa is the object of the gustatory sense organ it is located in the tongue. It will not describe only taste but as an indicator of the composition, properties and probable action of the drug[2].

Definition

The authors and commentators of different classical text of Ayurveda have described different definitions of Rasa. But all conveyed the same meaning.

Acharya Charaka describes it as the special sense known through the rasana or rasanendriya (tongue or taste buds) [3,4]is called as Rasa.

Symposium on the types of Rasa

A very interesting conversation between Atreya and his disciples is noted in Charaka Samhita where in many scholars have expressed their opinion on the number of Rasa[5].

Table 1- Showing the different opinion about number and name of Rasa

Sr. No	Name of the scholars	No of Rasa	Name given to Rasa
1.	Bhadrakapya	1	Object of Rasendriya not different from Jalamahabhuta
2.	Shakunteya	2	Chedaniya,Upashamaniya
3.	Poornaksha Moudgalya	3	Chedaniya, Upashamaniya,Sadharana
4.	Hiranyaksha Kaushika	4	Swadu Hita - Palatable and wholesome Swadu Ahita - Palatable and unwholesome Aswadu Hita - Unpalatable but wholesome Aswadu Ahita - Unpalatable and unwholesome
5.	KumarshiraBharadwaja	5	On the basis of Panchamahabhuta predominance Parthiva, Apya, Taijasa, Vayavya and Akashiya
6.	RajashreeVayorvida	6	Guru, Laghu, Sheeta, Ushna, Snigdha and Ruksha
7.	VaidehaNimi	7	Madhura, Amla, Lavana, Katu, Tikta, Kashaya and Kshara
8.	BadishaDhamargava	8	Madhura, Amla, Lavana, Katu, Tikta Kashaya, Kshara and Avyakta
9.	Balhika Kankayana	Innumerable	Based on Ashraya (Material substrata), Guna (properties), Karma (actions), SamswadaVishesha (variation in tastes)

At last, Punarvasu Atreya, after take note from all, he gave his finishing remark by citing different justifications for not accepting the opinions of many scholars. According to him Rasa are six in number cannot be more or less in number[6].

1. Madhura - Sweet
2. Amla - Sour
3. Lavana - Salt
4. Katu - Pungent
5. Tikta - Bitter
6. Kashaya - Astringent

The above chronological presentation of the Rasa has been slightly changed in Ashtanga Sangraha[7] and Ashtanga Hrudaya[8], where Tikta precedes Katu in the order, where it is noted that each preceding taste is stronger than the subsequent one.

Opinions of Astangasangraha Vriddha Vagbhata[9] also concluded that rasa are six only. He gives explanation his view with certain examples. He quotes that the constituents of madhura skandha viz., ghrita, taila, guda etc., do not possess similar sweetness. The degree of sweetness varies from one another and therefore rasa are

innumerable in number. This variation is because of the concerned bhuta dominance. Moreover combined effect of a group of drugs cannot be compared individually or separately with each ingredient.

Synonyms of Shadrasa

According to Raja Nighantu and Kaiyadeva Nighantu each of the Rasa is given a synonym,

Table No- 2 Showing a synonyms of a Rasa

Rasa	**Synonyms**
Madhura	Swadu
Amla	Chukra
Lavana	Patu
Katu	Ushana
Tikta	Katuka
Kashaya	Tuvara

Rasa-Anurasa

The gustatory effect of the initial as well as final contact of dry as well as wet substance with the tongue is known as Rasa[10]. When such effect is not distinctly perceptible, it is inferred only by its actions, known as Anurasa (After taste). It is included in one of the six tastes and there is no separate seventh taste[11].

Anurasa is either unmanifested or manifested in small proportion. Bhadanta Nagarjuna coined a new term Uparasa and opined that, all the Dravya do not have Uparasa[12].

Table No 3 - Difference of Rasa and Anurasa

Rasa	**Anurasa**
Principal taste	Secondary taste
It is manifested directly	Either it is unmanifested or is manifested in small proportion
Remains intact even after the dravya is dried	Does not remain intact in the dry state of dravyas
Rasa is first to get manifested	It is noticeable later in the end

Rasautappti (Origin of Rasa)

1. According to Panchamahabhuta
2. According to Rutu

Rasa Utpatti according to Panchamahabhuta

Dravya is formed by the Panchamahabhoota (*Sarvadravyam Panchamahabhutamakam*) similarly; Rasa is also residing in the Dravya and originated from Panchamahabhoota. Jala, the most essential among the five basic elements, have a role in the evolution of Rasa in a systematic method. It is reported that the divine water in the cloud form, does not reflect any taste, but as it gradually reaches the earth it associate with the Panchabhuta, in specific proportions and thus the six tastes are produced. Jala and Prithvi are material cause of Rasa in its origin, while the other three Bhuta serve as the influential cause in their variations. Moreover, by variation in their degree of mutual combination they are classified in sixty three types. Different Acharyas proposed different configurations of Bhuta in the formation of Rasa[13].

Table 4 - Combination of Mahabhuta in the formation of six Rasas[14]

Rasa	Bhautika composition of Rasa				
	Charaka	**Sushruta**	**Ashtanga Hridaya**	**Sharangdhara Samhita**	**Rasavaisheshika**
Madhura	Somaguna atireka	Pruthvi+Jala	Pruthvi+Jala	Pruthvi+Jala	Pruthvi+Jala
Amla	Pruthvi+Agni	Pruthvi+Agni **Jala +Agni***	Pruthvi+Agni	Pruthvi+Agni	**Jala +Agni**
Lavana	Jala +Agni	Jala +Agni **Pruthvi+Agni ***	Jala +Agni	Jala +Agni	**Agni +Jala**
Katu	Vayu+Agni	Vayu+Agni	Vayu+Agni	**Vayu+Akasha**	Vayu+Agni
Tikta	Vayu+Akasha	Vayu+Akasha	Vayu+Akasha	**Vayu+Agni**	Vayu+Akasha
Kashaya	Vayu+Pruthvi	Vayu+Pruthvi	Vayu+Pruthvi	Vayu+Pruthvi	Vayu+Pruthvi

***Pathabheda (variation in text)**

Amongst the five Mahabhutas, dominancy of particular two Mahabhutas results in the formation of six Rasa. Bhuta Swabhava (inherent nature) is the cause for this particular combination[15]. Prithvi and jala are "adharakarana" and akasha, vayu, teja are "nimittakarana" for formation of rasa[16]

Formation of Rasa according to Rutu

From Rutu, six rasas are originated. There is combination of less or more amount of bhutas in different seasons and hence there is pre-dominance of one rasa in each

season. The relation between seasons, panchabhuta composition of rasas and evolution of rasas has been high-lighted in commentary of Indu[17].

Chakrapani opines that little variation in mahabhutas and seasons is always expected and these variations may occur in the formation of rasas. The seasonal effect is explained on the basis of the general behavior[18].

Table No 5 - Formation of Rasa according to season

Seasons		**Predominance of Mahabhutas**	**Genesis of Rasa**
Shishira	Aadan kala (procurement period)	Vayu+Akash	Tikta
Vasanta		Vayu+Prithvi	Kashaya
Greeshma		Vayu+Agni	Katu
Varsha	Visarga kala (Bestowal period)	Prithvi+Agni	Amla
Sharad		Jala+Agni	Lavana
Hemant		Prithvi+Jala	Madhura

Innumerability of Rasa

With permutation and combination of dominant Mahabhutas, there are more rasa. Dravya, Desha, Kala, Prabhava are some of the important factors responsible for change in the degree. According to Acharya Bhadanta Nagarjuna, some factors like "*Tivramandavisheshat* (less or more predominance), *Aswadvisheshat* (Difference in experience of taste), *Samsarga* (mixture) *Dravya* (substance), *Guna* (properties),*Veerya*, *Vipaka*, *Karma*, *Vidaha* (food turning into acid), *Uparasa* (associated taste) *Visheshat*, make difference in the degree of Rasa.

Rasa Vikalpa / Samyoga and Kalpana (Combination and Types)

In view of their therapeutic utility, fifty-seven Samyoga (combinations) and sixty-three Kalpana (types) of Rasas (tastes) are enumerated[19, 20].

Table No 6- The basic six tastes (inter combination with each other)

Combination of Rasa	**Number**
By combination of two Rasa	15
By combination of three Rasa	20
By combination of four Rasa	15
By combination of five Rasa	06
By combination of six Rasa	01
Without any combination	06
Total	63

Acharya Bhadanta Nagarjuna has opined, two hundred eleven types of combination between six Rasa.

Rasopalabdhi

रसोनिपातेद्रव्याणाम् । च.सू. 26/66

When a substance is brought in contact with *Rasanendriya* (tongue), Rasa (taste) is perceived[21].

प्रत्यक्षतोऽनुमानतः उपदेशतश्चरसानामुपलब्धिः । र.वै.3/108

Bhadanta Nagarjuna describes the taste perception can be by assessed by threemethods[22]

1. **Pratyaksha:** As the Dravyas comes in contact with Rasanendriya, the sensation Perceived is known as taste. It gives Samanya Upalabdhi (general knowledge) about Rasa.
2. **Anumana:** There are certain instances when a substance does not exhibit any Particular taste that is perceivable directly on the tongue. For all such Dravyas, inference is the tool for taste assessment. Kashaya Madhura Rasa of Swarna (gold) is known by its Shita, Vishaghna, Medhya, Smrutivardhana properties; similarly Kashaya Tikta Rasa of Roupya (silver) is known by its action. It gives Vishesha Upalabdhi (specific knowledge) of Rasa.
3. **Apatopadesha-**The Kashaya Rasa in honey and the Madhura Rasa of water are being

cited asexamples for Apatopadesha[23]. It gives Pravrutti Upalabdhi (experimental knowledge). The Apatopadesha can also be inferred by observing the action of that particular substance in the body.

Classification of Rasa

1. According to Soumya and Agneya[24]

According to the Sushruta, universe is composed two elements i.e. Agni and Jala, hence Rasa has been classified basing of Agni and Soumya Guna.

Table No7- Classification of rasa based on soumya and agneya

Class	Rasa	Guna	Karma
Saumya	Madhura	Shita (Cool)	Pittashamaka
	Tikta		Murchashamana
	Kashaya		Avidahi
Agneya	Katu	Ushna (Hot)	Pittavardhaka
	Amla		Murchajanaka
	Lavana		Vidahi

2. According to Vidahi and Avidahi

As per Acharya Nagarjuna,

A) Katu, Amla and Lavana Rasas are having Ushna Guna which cause Vidahi

B) Madhura, Tikta and Kashaya Rasa are having Sheeta which causes Avidahi[25]

3. According to guna

Each Rasa is attributed with different Gunas

Table No 8: Showing the Gunas of each Rasa[26]

Sl No	Rasa	Guna
1.	Madhura	Snigdha, Sheeta, Guru, **Mrudu***
2.	Amla	Laghu, Ushna, Snigdha, **Vyavayi***
3.	Lavana	Naati guru, Snigdha Ushna, **Tikshna***
4.	Katu	Laghu, Ushna, Ruksha, **Tikshna***
5.	Tikta	Ruksha, Sheeta, Laghu, **Na atiruksha***
6.	Kashaya	Ruksha, Sheeta, Guru, **Ati Ruksha***

*Bold mark: Ashtangasangraha[27]

Table No 9: Showing the Gunas of each Rasa according to Sushruta[28]

Sl no	Rasa	Guna
1.	Madhura	Snigdha, Guru
2.	Amla	
3.	Lavana	
4.	Katu	Ruksha, Laghu
5.	Tikta	
6.	Kashaya	

4. According to Dosha Prakopa and Dosha Shamaka Rasa.

By its effects on Dosha Rasas are classified and divided into following groups

Table No 10- Classification of rasa based on dosha effects

Dosha Prakopa			**Dosha shamana**		
Vata	**Pitta**	**kapha**	**Vata**	**Pitta**	**kapha**
Katu	Katu	Madhura	Madhura	Kashaya	Katu
Tikta	Amla	Amla	Amla	Tikta	Tikta
Kashaya	Lavana	Lavana	Lavana	Madhura	Kashaya

5. According to Virya

As per Susruta sutra sthana 42/7,

- Sheetavirya rasa- Madhura, Tikta, Kashaya
- Ushna virya rasa - Katu, Amla, Lavana

6. According to Gati

As per Charaka Sutra sthana 26/41

- Urdhwabhaja- Agni + Vayu , Example- Katu rasa
- Adhobhaja- Privthi +App , Example –Madhura rasa
- Ubhayatobhaja- Privthi +Vayu or jala +Agni , Example – Lavana rasa

Taratamtwa of Rasa (Superiority of Rasa based on its Guna)[29]

Based on their predominance of Guna Acharya Charaka has explains Uttama, Madhyama, Avara which is shown below:

Table No11: The relative superiority or inferiority of the tastes on the basis of Guna

Guna	**Uttama(Maximum)**	**Madhyama(Moderate)**	**Avara(Minimum)**
Ruksha	Kashaya	Katu	Tikta
Snigdha	Madhura	Amla	Lavana
Ushna	Lavana	Amla	Katu
Shita	Madhura	Kashaya	Tikta
Guru	Madhura	Kashaya	Lavana
Laghu	Tikta	Katu	Amla

Rasa and Desha

The predominance of Rasa in a Desha has been explained by Acharya Vagbhata[30].

Table No12: The relation of rasa and desha

Anupa Desha	Madhura Rasa, Lavana Rasa and Amla Rasa
Jangala Desha	Katu Rasa,
Sadharana Desha	Tikta, Kashaya Rasa

Acharya Sushruta have reported dominancy of Rasas of water as per the Bhumi (ground)[31]. To differentiate the Bhumi, six types of colours have been represented, which are,

Table No 13: Showing the dominancy of Rasa in the water in different soil.

Sl No	**Bhumi**	**Rasa**
1.	Lohita Bhumi	Madhura
2.	Kapila Bhumi	Amla
3.	Pandu Bhumi	Lavana
4.	Pita Bhumi	Katu
5.	Neela Bhumi	Tikta
6.	Shukla Bhumi	Kashaya

Transformation of Rasa[32]: The Rasa of a dravya may undergo different changes. Acharya Bhadanta Nagarjuna explained them in the following manner,

1. **Kalasthiti**: When dravya is kept for specific time or longer, then its rasa will be changed e.g. the madhura rasa of fresh cooked rice turns to amla when rice is stored for long time.
2. **Patravishesha**: Because of the contact with specific vessel rasa of some specific dravyas can be changed e.g. when curd is kept in bronze vessel rasa of curd converts to katu from amla.
3. **Samyoga**: Union of two or more specific dravyas can change the rasa of one or other e.g. when chinchaphala comes in contact with calcium substance, amla rasa of chinchaphala will convert to madhura.
4. **Paka**: Some rasa of dravyas may be changed when cooked or comes in contact with agnie.g. when Jambu comes in contact with agni its kashaya rasa will convert to madhura.
5. **Atapa**: Rasa may be transformed on exposure to Sunlight e.g. kashaya rasa of tumbaruphala converts to madhura on exposure to sunlight.
6. **Bhavana**: Bhavana of some peculiar dravya may change rasa of some dravya e.g. When Bhavana of yastimadhukwatha is given to tila having kashaya, tikta, madhura rasa, all rasas of tila convert into madhura.
7. **Desha**: Particular area may bring about some change in the taste of a substance e.g. bananas will be very sweet in some areas and sour in other areas. Similarly mangos in certain areas are very sweet compared to other areas.
8. **Kala**: Time will bring about certain changes in the original taste of a substance e.g. Mango will be astringent when it is tender and becomes very sour later. Finally it becomes sweet in taste.
9. **Parinama**: Certain changes in the form of a substance will change the taste also. E.g. milk will be sweet to begin with but later turns to be sour when the same becomes curd.
10. **Upasarga**: when a substance is infected by pests or bugs it will give rise to a new taste. E.g. sugar cane which is infected by pests will yield bitter or sour juice.
11. **Vikriya**: Some particular tricks will also change the original taste of a substance. E.g. when palm fruit is cooked and rubbed against floor. It becomes bitter.

Rasa and Dosha[33,34]

Rasa having similar properties with particular Dosha will aggravate that Dosha in the body and if possessed opposite properties will pacify the Dosha. In the classics relation of three Rasa on one Dosha is reported, which is represented in tabular form.

Table No 14- Showing the aggravating and pacifying Rasa for each Dosha.

Vata		**Pitta**		**Kapha**	
Aggravating	**Pacifying**	**Aggravating**	**Pacifying**	**Aggravating**	**Pacifying**
Katu	Madhura	Katu	Madhura	Madhura	Katu
Tikta	Amla	Amla	Tikta	Amla	Tikta
Kashaya	Lavana	Lavana	Kashaya	Lavana	Kashaya

Acharya Harita[35] has given unique opinion about the relation between Dosha and two Rasa.He has skipped Lavana Rasa as aggravating Rasa for Kapha Dosha, Amla Rasa has skipped as aggravating Rasa for Pitta Dosha and only Tikta and Kashaya Rasas are responsible for aggravation of Vata Dosha.

Rasa and Dhatu

There are scattered references regarding effect of Rasa on Different Dhatus. These references are compiled in following.

Table No 15: Showing the effect of Rasa on Dhatu

Rasa	**Action**	**Action of Atiyoga**
Madhura	Sarva Dhatu Vardhana	--
Amla	--	Rakta Dushana, Mansa Vidahana
Lavana	--	Rakta Vardhana, Punstwaupaghata
Katu	Mansa Vilikhati	Sukra,Meda Upahanta
Tikta	Dhatu Kshaya	--
Kashaya	RaktaPrashamana	Shukraparodha

Rasa and Mala

Table No 16: Showing the effect of Rasa on the Purisha and Mutra

Rasa	**Effect on Mala**
Madhura, Amla, Lavana	SrushtaVinmutra (Laxative)
Katu, Tikta, Kashaya	BaddhaVinmutra (Constipative)

Use of rasa according to the seasonal variations

Seasonal variation in the universe affects the entire living organism accordingly. In the classics to maintain the equilibrium in Dosha, Dhatu, Mala it has been always advised to use and to avoid dravya according to the seasonal changes

Table No 17: The use of Rasa according to the importance of Rasa in seasonal variation

	Use			**Avoid**	
Seasons	**Charaka Samhita**	**Susruta Samhita**	**Astanga Hridaya**	**Charaka Samhita**	**Susruta Samhita**
Varsha	Amla, Lavana	Kashaya, Tikta, Katu	Madhura, Amla, Lavana	--	Amla, Madhura, Lavana
Sharada	Madhura, Tikta	Kashaya, Madhura, Tikta	Madhura, Tikta, Kashaya	--	--
Hemanta	Amla, Lavana	Lavana, Tikta, Amla, Katu	Madhura, Amla, Lavana	--	--
Shishira	--	--	Madhur, Amla, Lavana	Katu, Tikta, Kashaya	--
Vasanta	--	Kashaya, Tikta, Katu	Katu, Tikta, Kashaya	Amla, Madhura	--
Greeshma	--	--	Madhura	Lavana, Amla, Katu	Katu, Amla, Lavana

Rasa-Veerya

The drugs and diets which are Madhura(sweet) in Rasa and Vipaka are generally of Shita Veerya and the drugs and diets those with sour and pungent taste and Vipaka are generally of Ushna Veerya. The properties of such drugs and diets can be explained in terms of its concerned taste i.e, the properties of milk and ghee can be ascertained in terms of their taste only. But if the Veerya is not having conformity with taste than this principle cannot be applied e.g, some drugs having astringent and bitter tastes are also of Ushnavirya e.g. drugs belonging to Mahatpanchamoola[36].

Rasa as Vipaka

In general, Vipaka of any drugs and diets having pungent-bitter-astringent tastes is Katu (pungent), in same manner Amla Rasa is having Amla Vipaka and Madhura and Lavana Rasa is having Madhura Vipaka. Though the exceptions are also reported by Acharyas, which were further termed as Vichitrapratyarabdha[37].

Rasa as Aushadha

Rasa are used in treatment of diseases. There should be a proper sequence of their use while treating them. According to Kashyapa utilization of Rasa in various disorders should be in the following order[38];

Table No18- Doshachikitsa by Rasa

Kapha disorders	Pitta disorders	Vata disorders
Katu	Tikta	Lavana
Tikta	Madhura	Amla
Kashaya	Kashaya	Madhura

Rasa Pradhanyata (Superiority of rasa)

On the basis of Adhikaranasiddhanta, Sushruta mentions 4 reasons in sutra sthana 40/4 and Bhadhanta Nagarjuna's has added other reasons in Rasavaiseshikasutra, Prathamodhyayato explain rasa pradhanyata.

1. **Agama:** In the ancient treatises both foods and drugs are described on the basis of rasas e.g. tikta skandha dravyas.
2. **Upadesha**: Through classical texts our elders have well documented the utility of herbs on the basis of their rasas only e.g. tikta rasa as pitta shamaka etc.
3. **Anumana**: An inference is made about the action of a particular dravya on the basis of its rasa only e.g. lavana rasa is shukrahara, amla rasa is hridya etc.
4. **Rishi vachana**: Ancient Acharyas specifically mentioned certain drugs with particular rasa for a particular purpose e.g. ghrita possessing madhura rasa is used for jivaniya karma; asking for madhura dravyas to perform yajna (ritual).
5. **Adhikara**: Treatment is based upon rasas only e.g. pachana with katu rasa; balya with madhura rasa etc.
6. **Upasamhara**: When certain drugs are to be picked up collectively, then they are described on the basis of rasa only e.g. when Vidarigandhadi gana is to be compared with another group, it is compared with madhura skandha on the basis of madhura rasa.
7. **Vyapattinimittata**: Vitiation of rasa may result in vitiation of dravya and vipaka also e.g. if madhura rasa of milk is disturbed then milk is spoiled and its vipaka is also changed.
8. **Apadesha** : Rasa is frequently used to explain different aspects of life e.g. madhuragana (melodious song), madhuravani (Sweet voice), katu swabhava (angry nature) etc.
9. **Aneka vishayatva**: On the basis of tastes the drugs are innumerable.

5.2 CONCEPT OF TASTE

Aristotle was one of the first to develop a list of basic tastes postulate in 350 BC that the two most basic tastes were sweet and bitter[39].

The senses of taste allow us to keep away from unwanted or even lethal foods from those that are pleasant to eat and nutritious. It leads to primitive emotional and behavioural functions of our body.

Definition of taste

It is a chemical sense dependent on the sense organ called taste buds on the surface of the tongue[40].

Basic tastes

There are four primary sensations of tastes which are generally classified as *sour, salty, sweet and bitter.* A person can perceive hundreds of different tastes. Various tastes will be combinations of the elementary taste sensations, just as all the colours we can see are combinations of the three primary colours.

1. Sour taste

It is caused by acids i.e. by the hydrogen ion concentration, and the intensity of this taste sensation is approximately proportional to the *logarithm of the hydrogen ion concentration* i.e. the more acidic the food, the stronger the sour sensation becomes.

2. Salty taste

The salty taste is obtained by ionized salts, mainly by the sodium ion concentration. Sodium cations are mainly responsible for the salty taste, but the anions also contribute to a lesser extent.

3. Sweet taste

It is not caused by any single class of chemicals. Some chemicals that cause sweetness include sugars, glycols, alcohols, aldehydes, ketones, amides, esters, some amino acids, some small proteins, sulfonic acids, halogenated acids, and inorganic salts of lead and beryllium.

4. Bitter taste

It is also not caused by any single type of chemical agent. Organic substances are responsible for this taste. Two particular classes of substances are especially likely to cause bitter taste sensations which are Long-chain organic substances that contain nitrogen and Alkaloids.

5. Umami taste

Umami is a Japanese word (meaning "delicious") designating a pleasant taste sensation that is qualitatively different from sour, salty, sweet, or bitter. It is the dominant taste of food containing L-glutamate, such as meat extracts and aging cheese, and some physiologists consider it to be a separate, fifth category of primary taste stimuli. However, the precise molecular mechanisms responsible for umami taste are still unclear[41].

Anatomy of tongue

Parts of the tongue are as follows,

Root is directed backward, and connected with the hyoid bone by the Hyogloss and Geniogloss muscles.

Apex is thin and narrow, is directed forward against the lingual surfaces of the lower incisor teeth.

Inferior Surface is connected with the mandible by the Genioglossi, it is elevated into a distinct vertical fold, the frenulum linguae. On either side lateral to the frenulum is a slight fold of the mucous membrane there is presence of plica fimbriata.

Dorsum of the Tongue is convex and marked by a median sulcus, which divides it into symmetrical halves; this sulcus ends behind, about 2.5 cm. from the root of the organ, in a depression called foramen ceacum, from which a shallow groove, the sulcus terminalis, runs lateraly and forward on either side to the margin of the tongue. The part of the dorsum of the tongue in front of this groove, forming about two-thirds of its surface, the posterior third looks backward, and is smoother, and contains numerous muciparous glands and lymph follicles (lingual tonsil).

Muscles of the Tongue

- Extrinsic muscles Genioglossus. Hyoglossus, Styloglossus Glossopalatine
- Intrinsic muscles Longitudinalis superior, Transversus, Longitudinalis inferior, Verticalis.

Vessels - lingual artery and vein

Nerve supply - Oral part is supplied by lingual and chorda tympani nerve. The pharyngeal part is supplied by glossopharyngeal and internal laryngeal nerves.

Function

Tongue is associated with taste, speech, mastication and deglutition.

Physiology of tongue

Histology - The mucus membrane on the dorsum of the tongue present nipple like projections called lingual papillae. There are four type of papillae and distributed in a definite pattern which give roughness to the anterior part of tongue[42].

Sense of taste in the tongue is carried out by the taste buds. It is influenced by the sense of smell and is excited by at least 9 possible chemical receptors in the taste buds such as two sodium receptors, one chloride receptor, one adenosine receptor, two potassium receptor, one inosine receptor, two sweet receptors, two bitter receptors, one glutamate receptors, one hydrogen ion receptor.

Papillae of Tongue

Taste buds are groups of 30-100 individual elongated "neuroepithelial" cells (50-60 microns in height, 30-70 microns in width), which are often embedded in special structure in the surrounding epithelium called as papillae.

Taste papillae can be seen on the tongue as little red dots, or raised bumps, particularly at the front of the tongue. These ones are actually called "fungiform" papillae, because they look like little button mushrooms. There are three other kinds of papillae, foliate, circumvallate and the non-gustatory filiform. Taste buds, on the other hand, are collections of cells on these papillae and cannot be seen by the naked eye.

Taste buds on the dorsal lingual epithelium are the most numerous (total number of taste buds, all classes, = 4600 per tongue) and best-studied taste end-organs.

1. **Vallate papillae**: Large in size (1-2mm in diameter) and are 8-12 in number. They are situated immediately in front of sulcus terminalis.
2. **Fungiform papillae**: Numerous near the tip and margin of the tongue, smaller than vallate papillae distinguished by bright red colour.
3. **Filliform Papillae**: Most numerous and smallest papillae which gives characteristic velvety appearance to the tongue.
4. **Foliate Papillae**: The transverse mucosal ridge on the sides of the tongue in front of arch. They are rudimentary in human being, but cancerous lesions of the tongue are most common at this site[43]

In addition there are 2500 taste buds on the epiglottis, soft palate, laryngeal and oral pharynx. Many of these taste buds are innervated by the facial nerve (7^{th} cranial nerve).The number of taste buds decline with age.

Taste bud and its function

The sense of taste is mediated by taste receptor cells which are bundled in clusters called taste buds. Taste bud has diameter of about 1/30milimeter and length of about 1/16milimeter. The taste bud is composed of about 50 modified epithelial cells, some of which are supporting cells called sustentacular cells and others of which are taste cells. The taste cells are continually being replaced by mitotic division of surrounding epithelial cell, so that some taste cells are young cells and others are mature cells that lie toward the centre of the bud; these soon break up and dissolved. The outer tips of the taste cells are arranged around a minute taste pores. From the tip of each taste cells several microvillus or taste hairs protrude outward into the taste pores to approach the cavity of the mouth. This microvillus provides the receptor surface for the taste perception. Interwoven around the bodies of the taste cells is a branching terminal network of taste nerve fibres that are stimulated by the taste receptor cells. Some of these fibres invigilated into fold of the taste cell membrane near the fibres. It is believed that these vesicles contain a neurotransmitter substance that is released through the cell membrane to excite the nerve fibre ending in response to taste stimulation.

Mechanism of stimulation of buds

The membrane of the taste cells is negatively charged on the inside with respect to the outside. Application of the taste substances to the taste hairs partial loss of this negative potential that is the taste cell is depolarized. The decreased in potential within a wide range is approximately proportional to the logarithm of concentration of the stimulating substance. This change in electric potential in the taste cell is the receptor potential for taste. The mechanism by which most stimulating substances react with the taste villi to initiate the receptor potential is by binding of the chemicals to protein receptor molecule that protrude through the villus membrane. This in turn opens ion channels, which allow positively charged sodium ions to enter and depolarized the normal negativity of the cell. Then the taste chemical itself is gradually washed away from the taste villus by the saliva, which removes the stimulus.

The type of receptor protein in each taste villus determines the type of taste that will be perceived. For sodium ions and hydrogen ions which respectively elicit salty and sour taste sensation, the receptor protein open specific ion channel in the apical membrane of the taste cell, thereby activating the receptor, however for the sweet and

bitter taste sensation, the portion of the receptor protein molecule that protrude through apical membranes activate second messenger transmitter substances inside the taste cell, and these second messenger in turn cause intracellular chemical changes that elicit the taste signal.

Scholar of Dravyaguna of Modern Ayurveda namely Acharya Priya Vrat Sharma has correlated concept of Rasa basing on the Physico-Chemical constitution of substances as follows,

Madhura - Sugar, Fat and Amino Acids

Amla – Acids

Lavana – Salts

Katu - Essential Oils, Phenols etc,

Tikta - Certain Alkaloids and Glycosides

Kashaya – Tannins

TASTE THRESHOLD

Definition

The minimum concentration at which taste sensitivity to a particular substance or food can be perceived.

Threshold for taste[44]

The taste system encodes information about the quantity as well as the identity of stimuli. Threshold concentrations for most ingested tastants are quite high, however. For example, the threshold concentration for citric acid is 2 mM, for salt (NaCl) 10 mM, and for sucrose 20 mM. Since the body requires substantial concentrations of salts and carbohydrates, taste cells may respond only to relatively high concentrations of these essential substances to promote an adequate intake. It is advantageous for the taste system to detect potentially dangerous substances (e.g., bitter-tasting plant compounds) at much lower concentrations. Thus, the threshold concentration for quinine is 0.008 mM, and for strychnine 0.0001 mM. As in olfaction, gustatory sensitivity declines with age. Adults tend to add more salt and spices to food than children. The decreased sensitivity to salt can be problematic for older people with electrolyte and/or fluid balance problems.

The threshold for stimulation of the sour taste by hydrochloric acid averages 0.0009 N; for stimulation of the salty taste by sodium chloride, 0.01 M; for the sweet taste by sucrose, 0.01 M; and for the bitter taste by quinine, 0.000008 M. Note especially how much more sensitive is the bitter taste sense than all the others, which would be expected, because this sensation provides an important protective function against many dangerous toxins in food.

A taste perception is that there are only four "primary" tastes: salt, sweet, sour, and bitter. If this were true, then all tastes could be represented as a combination of these "primaries." Although these four tastes do indeed represent distinct perceptions, this classification is obviously limited. People experience a variety of additional taste sensations, including astringency (cranberries and tea), pungency (hot pepper and ginger), fat, starchy, and various metallic tastes (to name but a few). None of these, however, fits into these four categories. Moreover, some cultures consider other tastes to be "primary." For example, the Japanese consider the taste of monosodium glutamate to be distinct from that of salt, and even give it a different name ("*umami*," which means delicious). Finally, mixtures of various chemicals may elicit entirely new taste sensations (https://www.ncbi.nlm.nih.gov/books/NBK10833).

Taste Processes

Sometimes the foods that we eat taste differently depending on the foods that we previously consumed. You've probably noticed this yourself. Have you ever eaten a piece of sweet chocolate cake and then had a glass of lemonade taste unusually sour? Have you ever noticed that your taste buds seem to adapt to the food you are eating, so that it becomes blander or less interesting as you eat more of it? Both phenomena can be explained by a process called taste adaptation.

Absolute Threshold

Absolute taste threshold refers to the minimum taste stimulus needed to detect its presence. Absolute thresholds have been shown to vary with the particular taste stimuli being tested, how they are measured, viscosity and temperature, the current or previous presence of other taste stimuli, and the part of the tongue or mouth that is stimulated.

A common example of how absolute thresholds vary with exposure can be seen when a person salts and re-salts their food throughout a meal. As the person continues to eat, sensitivity to the salty taste declines and more salt is needed to maintain the same intensity. To avoid continuously re-salting, you should eat something that is not salty between bites of salty food. An example of how thresholds vary from one substance to another is that bitter quinine sulphate is quite easy to detect in small quantities while large quantities of sweet glucose are needed for detection.

Recognition Threshold

Recognition thresholds refer to the concentration of a solution needed to identify a defined quality. In research, it usually refers to the amount of substance that must be added to distilled water for tasters to recognize whether the taste is salty, sour, sweet, or bitter. Recognition thresholds are generally higher than absolute thresholds as people require relatively strong concentrations of substances to identify them.

Difference Threshold

A difference threshold for taste is the minimum amount of difference between two stimuli that a person is able to discriminate. Overall, our difference threshold for taste is not that impressive; a change in concentration of about 15-25% is needed to notice a difference in taste.

Adaptation

Adaptation refers to a decrease in sensitivity when a stimulus is presented continuously. People are less likely to show taste adaptation in real life than they are

in laboratory situations. In a controlled experiment, a researcher can continuously present a taste stimulus directly to the tongue. In everyday eating, such adaptation effects are usually less robust. People move food to different locations in the mouth, the food is mixing with saliva, and several food stimuli are often mixed together. There are 2 types of adaptation effects; in one, thresholds are raised (cross adaptation) and in the other they are lowered (cross enhancement).

Cross Adaptation

Cross adaptation refers to situations in which adaptation to one substance *raises the threshold* for another substance (i.e., decreases sensitivity to it). For example, if you have been drinking lemonade, vinegar on your fries will not taste so sour. Cross adaptation is specific to a particular taste quality; if you have adapted to a sour taste, you will be less sensitive to other sour tastes, but your sensitivity will not be decreased for salty, sweet, or bitter.

Cross Enhancement

Cross enhancement occurs when exposure to one substance *lowers the threshold* for another substance (i.e., leads to an increase in sensitivity). For example, if you have been eating a candy, orange juice may taste unpleasantly bitter.

If exposure to a particular taste is continued, its absolute threshold may increase until it is higher than the concentration of the adapting solution. At this point, adaptation is complete and no taste experience occurs. After the adapting solution is removed, the adaptation process is reversed and the threshold falls back to its original value.

5.3 KATU RASA

Etymology

The character which spreads all over the tongue due to its severity or the character which produce secretion from eyes, mouth, nose etc. is known as Katu Rasa[45]

The literature of history in Dravyaguna can be categorized in three phrases according to three periods, [46]

1. Ancient period (Up to 7th cent. A.D.)
2. Medieval period (8th to 15th cen. A.D.)
3. Modern period (16th cent. A.D. and onwards)

Systemic utility of herbs will be found in Rigveda - Aushadhi Sukta and also in Atharva Veda. In Vedic literature, Rasa is considered to be Apya (water) in nature. Formation regarding Rasa, Veerya, Vipaka can be found in Atharvaveda.

In **Charaka Samhita**, detailed information about Katu Rasa is provided in 26th chapter of Sutrasthana. Relation with Panchamahabhoota, characteristic, functions, uses, diseases caused by excessive use of katu rasa has been described. Relation between Rasa and Dosha is also documented in Vimanasthana.

In **Sushruta Samhita**, Katu Rasa is described in 42nd chapter of Sutrasthana where relation with Panchamahabhoota, characteristic, functions, uses, diseases caused due to excessive use of Katu Rasa has been described.

In **Astanga samgraha**, we find explanation in sutrasthana 18th chapter,

In **Astanga hridaya**, first time used the word "Ushana" for Katu Rasa. In Sutrasthana 10th chapter, Katu Rasa is mentioned with its relation to Panchamahabhoota, its properties, characteristic, function and uses with Atiyoga Lakshana (symptoms).

In Dhanvantri Nighantu, the numbers of Rasas are six and explained in Mishrakadi Varga while describing Paribhasha with the sequence of Katu, Tikta, Kashaya, Lavana, Amla and Madhura[47].

In Sodhal Nighantu, Brief description regarding Rasa is found in Guna Sangraha of Sodhal Nighantu like numbers of Rasa, Panchabhautika constituent, Karma and Doshaprabhava of rasa[48].

In Sarangdhara Samhita, it focusing on Formulations; Sharangadhara had described only the number of rasa to be six[49].

In **Madanapala Nighantu,** rasa and katu rasa is described in Mishrakadi Varga[50].

In Bhavaprakasha Nighantu, In Purvakhanda 6th chapter, described types of Rasas and their effect on Doshas, their properties and function with uses. Signs and symptom of excessive intake of Katu Rasa mentioned in same one[51].

In Raj Nighantu, description regarding Rasa has been given by Raj Nighantu. Number of Rasas, their functions, symptom of katu Rasa Atiyoga, incompatibility and combination of Rasa has been described under Rogadi Varga[52].

In **Brihat- Nighantu Ratnakara,** the Numbers of Rasa, Panchabhautika constituent, Karma and Atiyoga of its excess use are explained[53].

In Shaligram Nighantu, explanation of Katu Rasa with its Doshas relation, functions are documented[54].

Table No 19- Sequence of Katu Rasa in texts

Sl no	**Text**	**Order**
1.	Charaka samhita	Madhura, Amla, Lavana, **Katu,** Tikta and Kashaya
2.	Sushruta samhita	Madhura, Amla, Lavana, **Katu,** Tikta and Kashaya
3.	Astanga samgraha	Svadu(Madhura), Amla, Lavana, Tiktto hima, **Ushana(Katu)** and Kashaya
4.	Astanga hridaya	Svadu(Madhura), Amla, Lavana, **Ushana(Katu)** Tikta and Kashaya
5.	Sarangdhara Samhita	Madhura, Amla, Lavana, Tikta, **Katu** and Kashaya.
6.	Bhavaprakasha Nighantu	Madhura, Amla, Lavana, **Katu,** Tikta and Kashaya.
7.	Dhanvantri Nighantu	Tikta, **Katu**, Kashaya, Lavana, Amla and Madhura
8.	Sodhala Nighantu	Svadu(Madhura), Amla, Lavana**,** Katu, **Ushana(Katu)** and Kashaya
9.	Raja Nighantu	Madhura, Lavana, Tikta, Kashaya, Amla and **Katu**.
10.	Brihata Nighantu Ratnakara	Madhura, Amla, Lavana, **Katu,** Tikta, Kashaya.

Panchabhautiktva of Katu Rasa

वायुतेजसो कटुकः ॥३॥ (अ.सं.सु.१८)

Vayu and Agni Mahabhoota are main constitution of Katu Rasa.

- Agni Mahabhuta has Katu Rasa dominant
- Vayu Mahabhut has Kashaya and Katu dominant

Relation of Ritu and Katu Rasa

There are six Ritus and according six Rasas are generated[55]. There are some relevance between these two numbers and their origin. In Astanga Samgraha, Indu high-lighted the relation between seasons and rasa, Panchabhoota composition of Rasas and evaluation of Rasas[56]. Katu Rasa is formed in Grishma Ritu when Vayu and Agni Mahabhootas are predominant.

Lakshana of Katu Rasa

- Acharya Charaka opines Katu Rasa dominant drugs and diets cause irritation and pain in tongue, burning and watering in the mouth, nose and eyes[57].
- The thing which hurts the tip of the tongue, causes emotions, causes headache and produces secretion in the nose is known Katuka [58].
- Katu Rasa is that which gives severe stimulation, irritates on the tip of the tongue, throat and cheeks; causes secretion of water from mouth, eyes and nose; and a feeling of burning sensation in the body[59].
- Katu Rasa stimulates the tip of the tongue, causes irritation, brings out secretion from the eyes, nose and mouth and causes burning sensation of the cheeks[60].
- The taste which stimulates the tip of the tongue, irritates and causes headache, creates secretion from nose is Katu Rasa[61].

Properties of Katu Rasa

Laghu,Ushna and Ruksha Guna are attributed with Katu Rasa, due to its dominancy of Agni and Vayu Mahabhuta. Its Tikshna Guna is reported by Acharya Vagbhata[62]

Guna in Katu Rasa

Degree of Gunas in Katu Rasa are as follows,

1) Ruksha-Madhyama

2) Ushna-Avara

3) Laghu-Madhyama

Ruksha & Laghu consider Madhyama compared to Kashaya Rasa (Rukshatama) and Katu Rasa(Sheetatama) respectively, while Ushna is Uttama in Lavana Rasa compared to Katu and Amla Rasa[63].

Actions of Katu Rasa

Table No 20- Actions of Katu Rasa, on Doshas, Dhatus, Malas, Agni and Srotas

Action on	Effect
Dosha	– Kapha Shamaka, Vata-Pitta Vardhaka. – Increases Vata Dosha by its Ruksha and Laghu

	– Increases Pitta Dosha by Ushna, Ruksha and Laghu guna. – Decrease of Kapha-Dosha.
Dhatu	– Absorbing effect, particularly Medadhatu, absorbs Rasa Dhatu
Mala	– Baddhavinamutrakara
Agni	– It also promotes digestion. – Helps in absorption of food.
Srotas	– Srotahsodhana, Mukha Shodhana, Agni Deepana, Indriya Daurbalykara, Kanduhara, Vrana Ropana, Krimihara, Maamsa Lekhana, Sandhibandha Vichchhedana, Stanya Shukra Medasamupahanta. Indications: Kandu, Vrana, Grahani, Agnimandya, Alasaka, Shvayathu, Visha, Sneha-Kleda–Medopachayahara,,etc.

Karma of Katu Rasa

Table No 21- Karma of Katu Rasa by various authors

Charaka Samhita[64]	• Keeps the mouth clean, • Promote the digestion • Increase the absorption of food • Causes nasal secretion and lacrimation, • Creates proper function of sense organs, • Cures many diseases like urticaria, chronic conjunctivitis, obesity • Helps in elimination of waste products which are sticky, produce fomentation, • Deliriousness of food, clarify the passages and alleviates kapha
Sushruta Samhita[65]	• Increases hunger • It is digestive in nature • Helps taste, purifies the body, mitigates obesity, lassitude, • Excess of kapha, worms, poison, leprosy (and some other skin diseases) and itching; • Releases stiffness of joints, • Causes depression of the mind • Decreases breast milk, semen and fat
Astanga Samgraha[66]	• Cures alasaka, dropsy, allergy, obesity, ophthalmic, worms, oral disease, poisoning, skin disease and itching, healing of ulcers, • Dries moisture and unctuous substance, • Improves taste, helps digestion, scratching, causes hunger, cleanses the body, causes the burning during digestion of food • Increases the sharpness of senses • Breaks the clotting of the blood • Removes the constriction, clears the passages, removes kapha
• **Astanga Hridaya**[67]	• Cures disease of throat, allergic rashes and other skin disease, indigestion, oedema etc • Suppress the ulcers, digestive, appetizer • Eliminates the doshas, breaks up the hard masses, clears the channels, mitigates kapha

Bhavaprakasha Nighantu[68]	• Which increase vata-pitta • Destroys worms, itching, poisons • Reduces semen, breast milk, fat and obesity • Causes stimulation in ear and nose resulting in watery secretion • Dries up the moisture, fat, muscle fat, stool and urine, • Dilates the tissue pores • Good for intelligence • Causes constipation.
Raja Nighantu[69]	• Alleviates Kapha and its diseases • Cures throat disorders • Lowers appetite and skin diseases.

Table No 22- Effects of Katu rasa on Dosha- Dushya and Indriya

Dosha-Dhaatu-Mala	**Effects**
Vata	Vata prakopaka
Pitta	Pitta vardhaka
Kapha	Kapha shamaka
Dhatu	Dhatu kshaya karaka
Mala	Baddha vinmutra
Twaka	Swedaghna, kandughna, kushthaghna, daahaprashamana
Chakshu	Stravayati
Nasa	Ghraanamapadayati
Others	Sphutikaroti Indriya

Table No 23- Functions of Katu Rasa according to Srotas

Strotas	**Karma**
Annavaha	Rochana, deepana, pachana, krumighna, malamutrashoshana, vibandhakrut, apakarshana
Rasavaha	Sneha-kleda-sweda upahanti, stanyashodhana,
Raktavaha	Shonitasanghata bhinatti
Mamsavaha	Mamsa vilikhati
Medovaha	Bandhan chhinatti, meda-kleda upahanti
Purishavaha	mala-mutrashoshana, vibandhakrut
Mutravaha	Mutrashoshana

Atiyoga of Katu rasa

Table No 24 – Showing Sign and Symptom caused by Atiyoga of Katu Rasa

Charaka Samhita	causes impotency by its Vipaka, causes unconsciousness, giddiness, asthma, emaciation, fainting, burning sensation in throat, hyperthermia,thirst.
Sushruta Samhita	Giddiness, toxicity, dryness of the throat, palate and lips; burning sensation, heat exhaustion, loss of strength, trembling, pricking pain
Astanga Sangraha	thirst, intoxication, fainting, vomiting, delusion, weakness of body-strength and also semen, dryness of throat, tremors,

	giddiness, feeling of warmth, exhaustion, severe emaciation, burning in hands, feet and back, constricting, and pricking pain in limbs
Astanga Hridaya	giddiness, burning sensation, dryness of the mouth, palate and lips, pain in the throat etc., causes burning and destroys strength and complexions.
Bhavaprakasha Nighantu	giddiness, burning sensation, dryness of mouth, palate and lips, pain in throat, fainting, burning inside the abdomen and destroys strength and complexions.
Raj Nighantu	In excess use causes several disorders and destroys potency and strength.

Atiyogajanya vikara of Katu rasa

Table No 25- Katu Rasa as a causative factor of disease

Charaka Samhita	Pittaja Shotha, Gulma, Prameha, Madhumeha, Vataj – Pittaja Arsha, Pittaatisara, Visarpa, Trishna, Vaatashonita, Asrugdara,
Sushruta Samhita	Bhagna, Klaibya
Ashtanga Sangraha	Vaataj and Pittajavikara nidaana, Garbhinisevanavarjya,
Madhava Nidaana	Pittajajvara, V – P Arsha, Raktapitta, P Unmada, Vaatarakta, P.Shula, Gulma, Prameha, Visarpa, Visphota, Masurika, Nasaroga, Stanyadushti.
Bhavaprakasha	Klaibya, Ojakshaya, Atisara, Vaatarsha,Pittarsha, Raktapitta, Amlapitta, Vaatavyaadhi, Vaatarakta,Pittajavyaadhi, Shoola, Udaavarta, Gulma, Visphotaka, Masurika, Netraroga, Garbhapaatanakara

5.4 DRUG REVIEW

HISTORICAL ASPECT OF THE DRUG

Ardraka / Shunti is one of the spice which is used not only as food material but also have great therapeutic values. We get lot of reference in Ayurvedic classical texts in various contexts as mentioned below.

Vedic reference

- **Jaimini Brahmana** firstly quotes the name Shringabera. Shunta or Shunti described in guhya sutra as one type of grass. The above mentioning confirms that Shunti and Ardraka is relatively new name[70].
- Ardraka is delineated in Agnivesha Grhyasutra
- Visvabhesaja term is used for water and rice in Rigveda (1/13/20 and 1/137/3). The above references confirm that Ardraka and Shunti are relatively new names not familiar in the ancient times.
- Mujumdar is of the opinion that Ardraka described in Rgveda may be *Z. officinale*.

Samhita kala

- **Charaka** has stated Shunti as Mahaushadhi, Nagara etc. in 10 gana amongst the 50 mahakashaya. It is having Vrushya property and hrudya properties which is not the usual (saamanya) property of dravya. This is as per Charaka Samhitha (च.सू.२६/५१) (च.सू.२७/२९६)
- Acharya Charaka has cited Shunti and Ardraka having almost similar properties; he has given description on use of Shunti as treatment for Shvayathu, Atisara, Udararoga, Vatavyadhi etc. Shunti was included in approximately 250 preparations of therapeutics.
- **Sushruta** has mentioned the drug in 4 various varga('Trikatu') Hridya karma of Shunti along with its vrishya, dipana, pachana effects. Sushruta has made use of Shunti in various 150 formulations for treatments of various diseases.
- **Vagbhata** has explained the drug in Aushadha varga and other 2 categories.
- Vagbhata has reported that Ardraka and Shunti having similar Rasa Panchaka. *Lavanardraka bhakshana* was appreciated by him, and used Shunti in 200 various preparations for therapeutic purpose. Also he has reported mixing of Ardraka and other Deepaniya and Hridya dravya to achieve Brimhana Karma.

- All the Acharyas have mentioned the drug having Vrushya property which is not usually seen in Katu dravyas. (C.S. Su. 4/48; S.S.Su. 42/18 and A.H.Su. 2/47 etc.).

Nighantu kala:

- **Dhanvantari Nighantu,** characters of Shunti and Ardraka are described separately and having vrishya and hridya property.
- **Kaiyadeva Nighantu,** in this text we get details under Aushadhi varga where 'Ardranagara' is also described. It may be the Shunti with ardraka swarasa bhavana.
- **Bhavaprakash Nighantu,** bhavamishra has described Shunti in Haritakyadi varga where importance of *Lavanardraka bhakshana* is emphasized. Properties of both in dry (Shunti) and wet (Ardraka) forms have been differentiated.
- **Raja Nighantu:** Pt. Narahari has described 16 synonyms of the drug and Ardraka properties were separately emphasized.
- **Shaligrama Nighantu:** described Ardraka- Shunti properties and also mentioned some therapeutics uses. It has mentioned contraindicated conditions of Shunti, e.g. in sharad and grishma rutu, in raktapitta etc.
- **Dravyaguna vijnana:** Acharya Priyavrata Sharma has described Latin, vernacular name and synonyms of Shunti, botanical description with action of drug in different system of human being and chemical constituents of the drug is also mentioned.
- **Priya nighantu:** Acharya P.V.Sharma has appreciated its therapeutic efficacy; also it is reported as remedy for disease.
- **Indian Medicinal Plant:** The author Kirtikar and Basu have described it under the family Zingiberaceae with botanical description, species, its medicinal uses etc.
- **Materia Medica:** The author Dr. K. N. Nadkarni has discussed Shunti as above and emphasized its use in rheumatoid disease.

Nirukti[71]

Ardraka

शुण्ठी : शुष्कार्द्रक,

Synonyms

Synonyms were indicative of its physical characters, properties, actions, habitat, therapeutic uses, specific natural characteristics etc. Hence the knowledge of synonym of the drugs plays an important role in identifying a plant botanically in the present era.

Table No 26- Paryaya of Shunti in Various classical texts.

Paryaya	CS	SS	AH	DN	SDN	MN	KN	RN	BPN	SLN	NA
Shunti	+	+	+	+	+	+	+	+		+	+
Saikateshta				+				+		+	
Mahaushadham	+	+	+	+	+	+	+	+	+	+	+
Vishvam				+	+	+		+	+	+	
Naagaram	+	+	+	+	+	+	+	+	+	+	+
Vishvabheshaja	+			+	+	+	+	+	+	+	+
Vishvaushadham	+	+	+	+			+	+			
Shrungavera	+	+	+	+	+	+			+	+	+
Katubhadra	+	+		+	+	+	+	+	+		
Katugranthi								+			
Ushanam						+		+	+		
Raahuchhatram							+				
Katu							+	+			
Utkatam				+			+				
Katubhanga				+						+	
Avakchhatram					+						
Vishva	+		+			+			+	+	+
Shushkardra										+	
Bhesajam										+	
Kaphari										+	
Varam				+				+			
Chandrakhya				+				+		+	
Gulmamula				+				+			
Kandala				+				+			
Mahija				+							

Table No 27-Interpretation of synonyms [72]

Based on nama Rupa (Plate)	कटुग्रिन्थ	It is having pungent rhizomes in the roots.
	श्रुङ्गवेरं	It possesses several Shring as (germinated buds) on its surfaces.
	शुण्ठी - शुठी प्रितघाते।	Shunti word is used in the sense of 'equalizing' or 'to combat' and it is fighting with Aama dosha.
	शठ शोधने।	It purifies the body.
Based on properties	ऊषणम् - भा.-दाहकाठर	It is having pungent taste acrid and irritating properties.

Based on action/uses	कफाठर - कफनाशक:। नागरम् - नागरं श्रेष्ठम्। महौषधम् - मिह वृद्धौ। मंहते वधरते यत् औषधं तत्।	It is best medicine that promotes the growth of human body
	महच्च तदौषधम् - प्रकृष्टकमर कतुर्वात्।	Resembles its clinical efficacy, it promotes the growth of the body.
Based on cultivation and availability	विश्वभेषजम्	It almost cures every disease.
	विश्वा – विशेषेण व्याप्यति	It can be cultivated /available all over the world.
	नागरम् - नगरे प्राप्यम् विणजामापणेषु बहुशो लभ्यते। नागरं श्रेष्ठम्।	It is easily available in the market and best amongst the spices.

Gana and Varga: According to Different Classics

Table no 28- Classification according to classics

Charaka samhita	Deepaniya Trushna nigrahana Sheetaprashamanam Stanyashodhana Mutra virechaniya Truptighna Krimighna Anuvasanopaga Arshoghna
Sushruta samhita	Vidarigandadi Veeratarvad
Ashtanga Sangraha	Krimighna Mootravirechan Vidaryadi Veerataradi
Dhanvantari Nighantu	Guducchyadi varga
Madanapala Nighantu	Abhayadi varga
Raja Nighantu	Shatavhadi varga
Kaiyadeva Nighantu	Oushadi varga
Bhavaprakasha Nighantu	Guducchyadi varga
Nighantu Adarsha	Laghugokshuradi varga
Amara kosha	Vanoushadi varga

Karma according to different authors

Table No29 - Karmas of Shunti

Karma	Cha	Su	A.Hr	D.N	M.N	K.N	BP.N
Vrushya	+	+	+	+	+	+	+
Pachana	-	-	-	-	+	+	+
Rochana	+	+	+	-	+	+	+
Hrudya	+	+	+	-	-	+	-
Deepana	+	-	+	-	-	+	-
Swarya	-	+	-	-	+	+	+
Grahi	-	-	+	-	-	+	+
Anulomana	-	-	-	-	+	-	-
Arshoghna	+	-	-	-	-	-	-

Vernacular Names[73]

Table No 30 – Name of Shunti in various languages

Assamese	Adasuth, Aadar Shuth
Bengali	Suntha, Sunthi
English	Ginger root, Ginger
Guajarati	Sunth, Sundh, Suntha
Hindi	Sonth
Kannada	Shunti
Kashmiri	Shonth
Malayalam	Chukku , Inchi
Marathi	Sunth, Ardrak, Ale
Oriya	Sunthi
Punjabi	Sund
Tamil	Sukku, Chukku
Telugu	Sonthi, Sunti ,Allamu, Allam
Urdu	Sonth, Zanjabeel, Adrak

Varieties[21]

- There are various varieties, categories and qualities of ginger available in the market.
- Fresh rhizome in green state is Ardraka, dry rhizome is known as Shunti or saunth. (Kai.N)
- Different varieties as per market availability –
  - **Rio-de-janerio** (Kerala),
  - **Maran** (Assam),
  - **Narsapattam** (Andhra Pradesh)

Types of ginger

1. Jamaican ginger

2. Indian ginger

3. African ginger

4. Chinese ginger

Types of Indian ginger

a. **Cochin ginger**, which comes from central Kerala, is the peeled type, light brown to yellowish grey externally.

b. **Calicut ginger**, from Malabar, is orange or reddish brown, periderm is usually removed, it is inferior to Cochin ginger.

c. **Calcutta ginger**, greyish brown to greyish blue externally, it is similar to Calicut ginger.

GUNA OF SHUNTI (DRY) ACCORDING TO DIFFERENT AUTHORS

Table no 31- Guna of Shunti (Dry)

GUNA	Cha	Su	A.Hr	D.N	M.N	R.N	K.N	BP.N	N.A
Rasa									
Katu	-	+	-	+	+	+	+	+	+
Guna									
Laghu	-	+	+	-	+	-	+	+	-
Snigdha	+	+	+	+	+	+	+	+	-
Veerya									
Ushna	+	+	+	-	+	+	+	+	+
Vipaka									
Madhura	+	+	+	-	+	-	+	+	+
Doshaghnata									
Kapha Vataghna	+	+	+	-	+	+	+	+	+
Kaphaghna	-	-	-	+	-	-	-	-	-

GUNA OF ARDRAKA (FRESH)

Rasa: Katu

Guna: Guru, Snigdha(Sho.N)

Veerya: Ushna

Vipaka: Madhura

Doshakarma: Kaphavatahara (DN)

ROGAGHNATA ACCORDING TO DIFFERENT AUTHORS

Table No 32- Rogaghnata of Shunti

Roga	Su	D.N	M.N	R.N	K.N	BP.N
Shoola	+	-	+	+	+	+

Udara	-	+	+	+	+	+
Shwasa	-	+	+	+	+	+
Kasa	-	-	+	-	+	+
Shleepada	-	+	+	+	+	+
Vibandha	+	-	+	-	+	+
Aruchi	-	+	-	-	-	-
Amavata	-	-	+	-	-	+
Vamana	-	-	+	-	+	+
Arsha	-	-	+	-	+	+
Aanaha	+	-	+	-	+	+
Hrudroga	-	-	+	-	+	+
Shotha	-	-	-	-	-	+
Shopha	-	+	+	+	+	-
Pandu	-	+	-	-	-	-
Hidhma	-	-	-	+	+	-

PRAYOJYA ANGA

Kanda (Rhizome)

POSOLOGY

Ginger fresh juice: 5-10 ml

Powder: 1-2 gm

Syrup : 2-4ml

Therapeutic uses

1. Ardraka juice mixed with honey should be taken in kasa,shwasa and jvara.(H.S 3\12)
2. Juice of ardraka mixed with honey used in kasa,swasa and kaphaja disorders.(V.M 11\10)
3. Intake of salt and ginger in the beginning of the meal is always wholesome. It stimulates digestion,adds relish and purifies tongue and throat.(V.M6\9)
4. Small cup or basin like structure is formed around the umbilicus by the paste of amalaka and is filled with ardraka juice. It checks even severe diarrhoea. (Cd 3\36-37)
5. Kaphaja piles,ardraka and kulathe are useful.(S.S.Chi 6\16)
6. One should take Ardraka mixed with equal quantity of guda increasing 20g per day upto 200gm for a month. After drug is digested diet of rice and soup is given.

7. This regime alleviates gulma, udara, piles, oedema, prameha, shwasa, ajeerna, kamala, kasa.(Ah ci 17\6-7)
8. Intake of ardraka juice with old guda with diet of goats milk alleviates all types of shopha.(Vm 39\13)
9. One suffering from shopha,shvayathu,udara and ajeerna is freed by taking ghee cooked with paste and ardraka juice.(Ah ci 17\18)
10. Milk processed with juice of ardraka should be used in udara roga.(Ss.ci.1\84)
11. In murcha nasya with ardraka juice.(Bp.ci 14\10)
12. In karnashula,warm juice of ardraka mixed with oil,honey and rocksalt,used for karnapurana,2-5ml(Ss ci 5\25)
13. Ardraka juice with dashamula kashaya is used in katishula.(Bp.m.26\55)
14. Ushna kashaya of nagar in hridroga.(V.m 3\1-4)
15. Eranda juice with nagaram in Amaatisara (Bp. Jwaradhikara 1\2)
16. Ardraka juice with purana guda in sheetapitta (Bp.sheetapitta udarda kotha ci. 55-11)
17. Ghrita prepared with nagar kalka in grahani,pandu,pleeha roga(Cd grahani 4\42)
18. Guda-pippali-Shunti churna in shotha-ama ajeerna-shoola and basti shodhana.(Cd.shotha ci 39\14)
19. Nagarakalka vimishra ksheeram used as nasya in tridoshaja shiroroga (Cd. Ci 60\22)
20. In hikka ksheera and nagara (Bp.m 3\18)

Use of Shunti in different Yogas

Table No 33 - Different yogas of Shunti

SL No	YOGA	INDICATION	REFERENCE
1.	Nagaradi grutha	Udara roga k&v gulma	Cha.chi 13/115
2.	Vidangadi kshara	Gulma and Pleeha roga	Cha. Chi 13/80
3.	Gandiradyarista	Shotha, Bagandara, Arsha	Cha. Chi 12/29-31
4.	Pippalyadi lavana	Hrudaya and shotha	Cha. Chi. 13/158-161
5.	Nilinyadhya choorna	Udara roga and gulma	Cha. Chi. 13/137
6.	Kshara vatika	Shotha and Jalodara	Cha. Chi. 13/162-164
7.	Pippalyadi grutha	Arsha	Cha. Chi. 14/104
8.	Chavyadi grutha	Pravahika	Cha. Chi. 14/107-109

9.	Nagaradhya grutha	Arsha. Grahani	Cha. Chi. 14/110-112
10.	Trushandya grutha	Mandagni	Cha. Chi. 15/87
11.	Nagaradhya choorna	Pittaja grahani. Raktapitta	Cha. Chi. 15/130-131
12.	Bhallataka kshara	Hrudroga, pandu, grahani	Cha. Chi. 15/177-78
13.	Navayasa choorna	Pandu. Hrudroga	Cha. Chi. 16/70-71
14.	Mandoora vataka	Pandu	Cha. Chi. 16/73-77
15.	Datryavaleha	Kamala. Pittavikara	Cha. Chi. 16/100-101
16.	Sauvarchaladi choorna	Hikka swasa	Cha. Chi 17/109
17.	Shuntyadi choorna	Tamaka swasa Hikka	Cha. Chi. 17/123-124
18.	Vidangadi Choorna	Vataja kasa	Cha. Chi. 18/47
19.	Chitrakadi leha	Hrudroga, Swasa	Cha. Chi. 18/53-56
20.	Pushkaramooladi kalka	Vataja Hrudroga	Cha. Chi. 26/84
21.	Nagaradi kwatha	Raktapitta pittashoola	Sha. S.M. Kha. 2/97
22.	Shunti putapaka	Amatisara	Sha. S.M. Kha. 1/42-43
23.	Nagaradi kwatha	Jwara, Atisara	Sha. S.M. Kha. 2/62
24.	Shuntyadi kalka	Parinama shoola and Amavata	Sha. S.M. Kha. 5/18
25.	Shunti kalka	Grahani	Sha. S.M. Kha. 5/28
26.	Panchakola choorna	Deepana, Pachana, Anaha	Sha. S.M. Kha. 5/13.14
27.	Shuntyadi choorna	Amatisara	Sha. S.M. Kha. 6/46
28.	Chitrakadi choorna	Gulma, Grahani	Sha. S.M. Kha. 6/110-113
29.	Gudadi gutika	Swasa, Kasa	Sha. S.M. Kha. 7/16
30.	Yoshadi vati	Swasa, Kasa	Sha. S.M. Kha. 7/22.23
31.	Yogaraj guggulu	Tridosha shamaka, Rasayana	Sha. S.M. Kha. 7/53-69
32.	Pippalyadi grutha	Vishamajwara, Pleeharoga	Sha. S.M. Kha. 9/19.20
33.	Changeri ghruta	Grahani, Vatavikar	Sha. S.M. Kha. 9/21-24
34.	Mahaushadi kwatha	Vishama jwara	C.D. 1/210
35.	Nagaradi kashaya	Jwara, Atisara	C.D. 2/4
36.	Nagaradi kwatha	Atisara, Shoola	C.D. 2/30

37.	Shunti grutha	Shotha, Amadosha yukta grahani	C.D. 4/41
38.	Nagaradhya modaka	All types of Arsha	C.D. 5/27
39.	Navayasa loham	Pandu, Kusta, Hrudayavikara	C.D. 8/10-11
40.	Vishwadi leha	Vatika kasa	C.D. 11/6
41.	Kantakari grutha	Swarabheda, All types of Kasa	C.D. 13/12
42.	Chandana kalka	Cchardhi	C.D. 15/6
43.	Mahaushadi kwatha	Moorcha and mada	C.D. 17/6
44.	Amrutadi choorna	Amavata, Sandishotha	C.D. 25/14
45.	Patyadi choorna	Shotha, Agnimandya, Amavata	C.D. 25/44
46.	Trikatukadi varti	Anaha and shoola	C.D. 29/8.9
47.	Varunadi kwatha	Vatajanya Ashmari	C.D. 34/2.1
48.	Shuntyadi kwatha	Ashmari, Mutrakrucchra	C.D. 34/5.7
49.	Nagaradi kashaya	Ashmari	C.D. 34/28
50.	Swadamstradi kashaya	Ashmari	C.D. 34/30
51.	Ashta Dashanga Kwatha	Jwara	Y R Jwara chi 3rd Shloka
52.	Navayasa Choorna	Pandu, Hridroga	Y R Pandu roga chikitsa - 1st Shloka

SHLOKA:

- शुण्टी विश्वा च विश्वञ्च् नागरम् विश्वभेषजम् ।
- ऊषणम् कटुभद्रञ्च श्रुङ्गवेरम् महौषधम् ॥
- शुण्टी रुच्यामवातघ्नी पाचनी कटुका लघु ।
- स्निग्धोष्णा ंमधुरा पाके कफवातविबन्धनुत्॥
- वृष्या स्वर्यावमिश्वासशूलकसह्रिदमयान्।
- हन्ति श्लीपदशोथार्शा आनहोदरमारुतान् ॥
- आग्नेयगुणभूयिष्टात् तोयाम्ष्परिशोषि यत् ।
- सम्म्यग्ह्णाति मलम् तत्तु ग्राहि शुण्ट्यादयो यथा ॥
- विबन्धभेदिनी या तु सा कथम् ग्रहिणी भवेत् ।
- शक्ति विबन्धभेदे स्यद्यतो न मलपातने॥ भा.प. 44 ट्ट 48
- आर्द्रक श्रिन्वेरम् स्यत्कटुभद्रम् तथा आर्द्रिका ।

- आर्द्रिका भेदिनी गुर्वि तीक्ष्णोष्णा दीपनी मता ॥
- कटुका मधुरा पाके रुक्शा वातकफापहा ।
- ये गुणाः कथिताः शुण्ट्यास्ते अपि सन्त्यार्द्रके अखिलाः॥
- भोजनग्रे सदा पथ्यम् लवणार्द्रक भक्शणम् ।
- अग्निसन्दीपनम् रुच्यम् जिह्वकण्टविशोधनम्॥
- कुष्टपण्ड्वामये क्रिच्छ्रे रक्तपित्ते व्रणे ज्वरे ।
- दाहे निदाघशरदो नै वा पूजितमार्द्रकम् ॥ भा.प. 49 ट्ट 52
- कफानिलहरम् स्वर्यम् विबन्धानहशूलजित् ।
- कटूष्णम् रोचनम् व्रिष्यम् ह्रिद्य् चैव आर्द्रकम् स्म्रितम् ॥ रा.नि.
- स्निग्धोष्णा कटुका शुण्टी व्रष्या शोथकफारुचिः ।
- हन्ति वतोदर श्वासान् पाण्डुश्लीपदनाशिनी ॥ ध.नि.
- रोचनम् दीपनम् व्रष्यम् आर्द्रकम् विश्वभेषजम् ।
- वातश्लेश्म विबन्धेषु रसस्तस्योपदिश्यते ॥ चरक
- नागरम् कफवातघ्नम् विपाके मधुरम् कटु ।
- व्रिष्योष्णां रोचनम् ह्रिद्यम् सस्नेहम् लघु दीपनम् ॥
- कफानिलहरम् स्वर्यम् विबन्धानहशूलजित् ।
- कटूष्णम् रोचनम् व्रिष्यम् ह्रिद्य् चैव आर्द्रकम् स्म्रितम् ॥ सुश्रुत
- प्रयोजयेत् आर्द्रनागरम् तुल्यम् गुडेनाध्रपलभिव्रिद्द्या ।
- मत्रपरम् पन्च्पलनि मासम् जीर्णे पयोयूषरसन्न भोक्ता ॥
- गुल्मोदरार्श्: ष्वयथु प्रमेहन् ष्वासप्रतिश्यायालसकाविपकान ्।
- सकामलाम् शोषमनोविकरान् कासम् कफम् चैव जयेत्प्रयोगः ॥ च.चि. 17\44–45
- शुण्ठी महौषधं विश्वं नागरं विश्वभेषजम् । (अष्टाङ्ग निघण्टु– पिप्पल्यादि गण)
- शृङ्गवेरन्तथा कोलं नागरं विश्वभेषजम् ।
- कटुः शुण्व्युष्णा प्रोक्ता महिच्छत्रमथापि वा ॥ (सौश्रुत निघण्टु– पिप्पल्यादि गण)
- शुण्ठिगोक्षुरक्वाथः प्रातः प्रातर्निषेवितः ।
- सामे वाते कटीशुले पाचनो रुग्विनाशनः ॥ (वृन्द)
- नागरं वा पिबेदुष्णं कषायं चाग्निवर्धनम् ।

- कासश्वासानिलहरं शुलहृद्रोगनाशनम् ॥ (वृन्द)
- गुडार्द्रकम् भक्षयित्वा मदिरातर्पणम् पिबेत् ।
- सस्नेहैः सक्तुभिः युक्तम् बद्दविट् गुदजतुरः ॥ (भा. प्र.)
- शुण्टी गुडतिलैः कल्को दुघ्देन सह योजयेत् ।
- परिणामभवम् शूलम् आमवातम् च नशयेत् ॥ (शा.सं)
- स्वरसम् श्रृङ्गवेरस्य माक्षिकेण सम्न्वितम् ।
- पाययेत् श्वासकसघ्नं प्रतिश्यायकफापहम् ॥ (चक्रदत्त)
- चुर्णम् किञ्चित् घृताभ्यक्तम् शुण्ठया एरण्डाजैः तैलैः ।
- वेष्टितम् पुटपकेन विपचेत् मन्द वह्निना ॥
- तत्त् उध्दृत्य तच्चूर्णं ग्राह्यं प्रातः सितन्वितम् ।
- तेन यान्ति शमं पीडाः आमातिसारसम्भवः॥ (शा.सं)
- नागरक्वाथकल्काभ्याम् घृतप्रस्थं विपचयेत् ।
- चतुर्गुणेन् तेनाथ केवलेन उदकेन वा ॥ (भा.प्र)
- अतिसारसंहरणमाग्निहितम् ग्रहणीविकरगुदकीलहरं ।
- जठरार्ति शोफगररुक् शमनम् सुमहौष्धम् जयत्तिक्रयुतम्॥ (शोढल)

5.4 DRUG REVIEW

History of *Zingiber officinale*

The English botanist William Roscoe (1753-1831) gave the plant the name *Zingiber officinale* in 1807.It consists of the fresh or dried roots. The ginger family is a tropical group especially abundant in Indo-Malaysia, consisting of more 1200 plant species in 53 genera. The genus *Zingiber* includes about 85 species of aromatic herbs from East Asia and tropical Australia. The name of the genus, *Zingiber*, derives from a Sanskrit word denoting "horn-shaped," in reference to the protrusions on the rhizome[74].

Zingiber officinalis Roscoe, commonly known as ginger belongs to family Zingiberaceae is cultivated commercially in India, China, South East Asia, West Indies, Mexico and other parts of the world. It is consumed worldwide as a spice and flavouring agent and is attributed to have many medicinal properties. A large number of commercial varieties of ginger exist.

- Nigerian Ginger is darker in color, minute size and more pungent taste.
- Cochin Ginger is habitually larger, well scraped, contains more starch and breaks with a shorter fracture.
- African Ginger is darker in color, more pungent in taste and less flavour than Jamaica Ginger.

Ginger plant is propagated by rhizome cuttings each bearing a bud. The pieces of rhizome are planted in holes during March and April in a well- drained clayey soil. In December or January rhizomes are unruffled. Ginger requires a warm and humid atmosphere. A well distributed rainfall is required for its cultivation. If the area is getting fewer rainfalls, the crop needs habitual irrigation[75].

Botanical Description

- Botanical Name: *Zingiber officinale* (Rosc)
- Meaning of *Zingiber officinale* is -

  Zingiber – Altered form of the shrungber

  Officinale – Sold in shops or used in medicine or in the arts.

Vernacular Name

- Latin - *Zingiber officinalae*
- English - Ginger
- Bengal - Sonth
- Maharastra - Sunt

- Telugu - Sonti
- Tamil - Shukku
- Kannada - Vanashunti
- Malayalam - Chukka
- Konkani - Alem
- Punjab - Sonth
- Hindi - Adrak
- French - Gingembre
- Italian - Zenzero
- Malaya - Alea
- Tulu - Sunthi
- Urdu - Adrak
- Oriya - Adroko
- German - Inqwer

Taxonomical Position (according to Bentham and hooker classification)

- Kingdom - Plantae
- Division - Spermatophyta
- Subdivision - Angiospermae
- Class - Monocotyledonae
- Natural order - Scitaminae
- Family - Zingiberaceae
- Genus - Zingiber
- Species - Officinale
- Botanical name- *Zingiber officinale* Rosc.
- Synonyms - *Amomum zingiber* L.

  Zingiber cholmondeleyi (F.M.Bailey) K.Schum.

  Zingiber missionis Wall.

  Zingiber officinale var. cholmondeleyi F.M.Bailey

  Zingiber officinale f. macrorhizonum (Makino) M.Hiroe

  Zingiber officinale f. rubens (Makino) M.Hiroe

  Zingiber officinale var. rubrum Theilade

  Zingiber sichuanense Z.Y.Zhu, S.L.Zhang & S.X.Chen

Author Details: Roscoe, William (1753-1831)

Morphology

Key features of family – *Zingiberaceae*

Presence of aromatic oils, ligule, marked differentiation of perianth into Calyx and corolla, single stamen and large usually petaloid staminoidium.

- Habit – Herbaceous perennial plants
- Root - Fibrous root system
- Stem - Usually an underground rhizome may be horizontal or tuberous. The rhizome periodically produces aerial shoots
- Leaf - Leaves may be radical or couline. Petiolate or subsessile. Leaf base sheathing. Lamina is linear to elliptic or lanceolate. Venation unicostate parallel. A ligule is present between the petiole and lamina.
- Inflorescence- Flowering clusters may be present on leafy aerial shoots or on leafless scapes as in zingiber. The inflorescence is varied. It is a spike, head, raceme or panicle.
- Flower – Bracteate, pedicellate or sessile, complete, zygomorphic, complete, Bisexual, Epigynous, Calyx and Corolla are distinct. Flowers are large in size and brightly coloured.
- Calyx - Sepals three in number united to form a tube, odd sepal anterior in position. Aestivations valuate.
- Corolla - Petals three, gamo petalous forming a coralline tube. Petals unequal in size. Posterior petal largest covering the margins of the remaining two. Aestivation valvate. Petals are brightly coloured and often delicate.
- Androecium -Basic number of stamens is six. Arranged in two whorls of three each. However all except one are sterile. The outer whorl is supposed to have three stamens of which the anterior one is always absent. The remaining two are represented by leafy staminodes. Among the three members of the inner whorl one is a fertile stamen it is epipetalous. The remaining two members are united to form a petaloid labellum. The labellum closely apresses the fertile stamen.
- Gynoecium - Ovary inferior tricarpellary, syncarpous trilocular with many ovules on axile placenta. Style is single and is more or less enclosed by the groove of the fertile stamen. Stigma simple capitate or three lobed. Epigynous nectar secreting glands are present.
- Fruit- Loculicidal capsule, opening by three valves.

- Seeds - Seeds have a meaty endosperm with a straight embryo. An aril is often present.

Characters of *Zingiber officinalae* morphology

It is perennial herb, rhizome stout, tuberous with erect leafy stem, 60-90 cm.tall. Leaves sessile, linear-lanceolate, 10-25 x 1.5-3 cm, narrowed to the base, acute or acuminate, sheath 10-15 cm.long. Flowers greenish with a small dark purple lip, in oblong, cylindric spikes ensheathed in a few scarious, glabrous bracts, 4-7 cm.long. Fruits are oblong capsules.

Macroscopic[76,77]: Rhizome, laterally compressed bearing short, flattish, ovate, oblique, branches on upper side each having at its apex a depressed scar, pieces about 5-15cm long, 1.5-6.5cm wide (usually 3-4cm) and 1-1.5cm thick, externally buff coloured showing longitudinal striations and occasional loose fibres, fracture short, smooth, transverse surface exhibiting narrow cortex (about one-third of radius), a well-marked endodermis and a wide stele showing numerous scattered fibro-vascular bundles and yellow secreting cells, odour agreeable and aromatic, taste, agreeable and pungent.

Microscopic: Transverse section of rhizome shows cortex. of isodiametric thin walled parenchyma with scattered vascular strands and numerous isodiametric idioblasts, about 40-80µ In diameter containing a yellowish to reddish-brown oleo-resin, endodermis slightly thick walled, free from starch immediately inside endodermis a row of nearly continuous collateral bundles usually without fibres stele of thin-walled, parenchyma cells[78,79], arranged radially around numerous scattered, collateral vascular bundles, each consisting of a few unlignified, reticulate or spiral vessels upto about 70µ in diameter, a group of phloem cells, unlignified, thin-walled, septate fibres upto about 30µ wide and 600µ long with small oblique slit, like pits, present, numerous scattered idioblasts, similar those of cortex, and associated with vascular bundles, also present, idioblasts about 8-20µ wide and up to 130µ long with dark reddish-brown contents: in single or in axial rows, adjacent to vessels, present, parenchyma of cortex and stele packed with flattened, rectangular, ovate, starch grains, mostly 5-15x30-60µ long about 25µ wide and 7µ thick, marked by five transverse striations[80,81]

Chemical constituents[82]: The active ingredients in ginger are resided in its volatile oils, which comprise approximately 1-3% of its weight. The major active ingredients

in ginger oil are the sesquiterpenes: bisapolene, zingiberene, and zingiberol, Sesquiphellandrene, Curcurmene. The Phenolic compounds of shogaols and gingerols also present[83]. The other ingredients are 6-Dehydrogingerdione, galanolactone, gingesulfonic acid, zingerone, geraniol, neral, monoacyl- digalactosylglycerols, gingerglycolipids[84].

Details of Chemicals found in ginger

Volatile Oil containing Cineole zingiberol, and sesquiterpene like zingiberene, bisobolene and sesqui phellandrene, gingerosol in the oleo-resin.

Table no 34- Details of Chemicals found in ginger[85]

Compound	**Chemical Formula**	**Molecular Weight**	**Isolation or extraction**	**Biological Activity**
6-Gingerol	C17H26O4	294.38	6-Gingerol is isolated from ginger root using ethanol and other organic solvents	A bioactive ingredient of ginger root (*Zingiber officinale*), a medicinal plant having anti-nausea, anti-inflammatory, and anti-carcinogenic properties and a carminative effect
8-Gingerol	$C_{19}H_{30}O_4$	322.44		
10-Gingerol	$C_{21}H_{34}O_4$	350.49		
6-Shogaol 6-Shogaol is a dehydrated 6-gingerol molecule that has lost a molecule of water during the drying or cooking process.	$C_{17}H_{24}O_3$	276.37	6-Shogaol is isolated from dried or cooked ginger root using ethanol and other organic solvents followed by chromatographic purification	
Zingerone				
Zingiberene contribute up to 30% of the essential oils in ginger	$C_{15}H_{24}$			

Pungent components of Ginger

1. **Shogaols:** The name *shogaol* is derived from the Japanese name for ginger, Shogaols are pungent constituents of ginger, Shogaol is rated 160,000 SHU on Scoville scale. When compared to other pungent compounds, shogaol is

moderately more pungent than piperine, but less than capsaicin. (4)-Shogaol, (8)-shogaol, (10)-shogaol, and (12)-shogaol (all found in ginger) together constitute the group shogaols. There also exist in ginger cultivars methylated shogaols: methyl 6-shogaol and methyl 8-shogaol, respectively.

Compound	**Scoville Heat Units (SHU)**
Capsaicin	16,000,000
(6)-Shogaol	160,000
Piperine	100,000
(6)-Gingerol	60,000

2. **Zingerone** key component of the pungency of ginger, but imparts the "sweet" flavor of cooked ginger. The metabolism of 4-(4-hydroxy-3-methoxyphenyl)butan-2-one (zingerone), a pungent principle of ginger, has been investigated in rats. Oral or intraperitoneal dosage (100mg/kg) of zingerone resulted in the urinary excretion of most metabolites within 24 h, mainly as glucuronide and/or sulphate conjugates. While zingerone itself accounted for roughly 50—55% of the dose, reduction to the corresponding carbinol (11–13%) also occurred. Side chain oxidation took place at all three available sites and oxidation at the 3-position, giving rise to C_6—C_2 metabolites, predominated. About 95–97% of the dose was accounted for. Appreciable (40% in 12 h) biliary excretion occurred. Biliary studies and studies in vitro using caecal micro-organisms indicated that several *O*-demethylated metabolites found in the urine are of bacterial origin[86].

All the gingerols and shogaols increased intracellular calcium concentration in rat transient receptor potential vanilloid subtype 1 (TRPV1)-expressing HEK293 cells via TRPV1. n this regard, the shogaols were more potent than the gingerols. Interestingly, [10]-shogaol is the only nonpungent compound among the gingerols and shogaols, suggesting its usefulness as a functional ingredient in food[87].

POWDER[88] – Light yellow; shows thin walled parenchymatous cells, septate fibres with oblique, elongated pits on their walls, reticulate and spiral vessels, oleo resin cells abundant single starch grains of varying shapes with eccentric hilum, measuring 5-25 micro in diameter.

Distribution (Habitat)

Ginger is cultivated in many parts of India. It is cultivated on a large scale in the warm, moist regions. Chiefly it is cultivated in Karnataka, Madras, Cochin and Travancore, and to somewhat lesser extent in Bengal and the Punjab.

Geographical origin and distribution

It is cultivated throughout the sub-Himalayan tracts of Uttarpradesh, occasionally cultivated in Bihar and Orissa, W.Bengal, Madhyapradesh, Himachalpradesh, Karnataka and Kerala and run wild in some places of western ghats.

Part used: Rhizome

Substitute and Adultration

There are several varieties of ginger, derived from *Z.officinale* Rosc. Apart from this some types are derived from other species, viz., Japaneze ginger is obtained from *Z.mioga* Rosc., The rhizomes of *Z.casummar* Roxb are sometime used as substitute.

Trade and commerce

India is one of the chief ginger producing countries. A considerable quantity of fresh as well as dry ginger is exported to west Asian countries, USA, Japan, U.K., Germany, Netherlands and several other countries. India also exports ginger oil to several countries.

Identity Purity and Strength

- Foreign matter - not more than 1 percent
- Total ash - not more than 6 percent
- Acid- insoluble ash - not more than 1.5 percent
- Alcohol (90%) soluble extractive - not less than 3 percent
- Water soluble extractive - not less than 10 percent

Cultivation

The plant of ginger is a perennial herb about 1 meter high. For cultivation the rhizome is cut into pieces and each piece containing a bud is planted into trenches in well-drained and loamy soil in March and April. The plant requires about 80" rainfall per year and if rainfall, in inadequate water may be supplied by irrigation. Collection is done in December or January when the plants wither after flowering period. Rhizomes are carefully dugout, aerial stems, fibrous roots and buds are removed and washed. Rhizome is peeled on flat surface as well as between the fingers and thoroughly washed in running water. Drug is then dried completely by keeping in the sun on mats. After drying it loses about 70% of its weight.

- **Preparation of Land:** Raised beds 3m × 1m are laid out at a distance of 30-45cm from each other. Small shallow pits for planting are then made on the bed. A

spacing of 15 or 20cm × 22cm is done. The beds are smaller in slopy areas. A handful of cattle manure is applied to each of these pits. Seed rhizome of weight 20 – 30g with at least two sprouted eyebuds is placed 3- 5cm deep in the pits.

- **Spacing:** The optimum spacing for planting of ginger is 25 – 45cm. between the rows and 15 – 20cm. between the plant in a row.
- **Manuring:** Ginger is an exhaustive crop and requires heavy manuring. Well rotten cattle manure at the rate of 25-30tonnes per hectare is applied at the time of planting.
- **Fertilizer**: NPK- 8:8:16, 750kg of the mixture is applied per hectare.
- **Rotation and Intercropping:** The crop is grown either pure or as an intercrop with coconut, coffee, and oranges. Under irrigated conditions it is rotated with chillies, vegetables, groundnut, ragi and maize.
- **Climate and Soil:** Ginger requires a warm and humid climate, laterite, loamy, clayey soil is suitable for the crop.
- **Seasons:** In south india, the major portion of the crop is s a mansoon crop from april – may to December.
- **Collection:** Collection is done in December or January when the plants wither after flowering period. Rhizomes are carefully dugout, aerial stems, fibrous roots and buds are removed and washed.
- **Processing of Ginger:** Raw rhizomes are scraped and then soaked in water for a day and later in thick milk of lime (1kg slaked lime/12 litres of water). This material is dried in sun and then rubbed with gunnybag, pieces to remove last remnants of the skin; the treatment imparts a smooth finish to the final product.
- **Precaution:** Deep scraping should not be done, as the essential oil is contained in the epidermal cells.
- **Drying of ginger:** Sun drying followed by shade drying. The rhizome is uniformly turned during drying.

Nutrient Composition [89]

Ginger is widely used in a variety of foods because of its nutritional composition and flavouring compounds. Ginger rhizomes are rich source of carbohydrates, vitamins, minerals and iron. The different vitamins, minerals and phytochemicals content in present in ginger rhizomes are shown in Table 4, 5 & 6. Ginger possesses a high nutritional value. However, α-acids, reducing sugars, and vitamin C can give rise to

the Maillard reaction upon heating (similarly as in other foods) with the formation of off-flavors (mainly heterocyclic compounds) and the formation of melanoidins.

Table No35- Nutrient composition of Ginger (per 100g)

Constituents	**Ginger root (ground)**	**Ginger root (Raw)**
Energy	1404KJ(336Kcal)	333 KJ (80 KCal)
Carbohydrates	71.6g	17.7 g
Sugars	3.39g	1.7g
Dietry Fibre	14.1g	2.0g
Fat	4.24g	0.75g
Protein	8.98g	1.82g

Table No36- Vitamin content of Ginger (per 100g)

Vitamins	**Ginger root(Ground)**	**Ginger root(Raw)**
Thiamine(B1)	0.046mg	0.025mg
Riboflavin(B2)	0.17mg	0.034mg
Niacin(B3)	9.62mg	0.75mg
Panthenic acid(B5)	0.477mg	0.203mg
Vitamin B6	0.626mg	0.16mg
Folate(B9)	13µg	11µg
Vitamin C	0.7mg	5mg
Vitamin E	0.0	0.26mg

Table No37- Minerals content of ginger (per 100 g)

Minerals	**Ginger root(Ground)**	**Ginger root(Raw)**
Calcium	114mg	16mg
Iron	19.8mg	0.6mg
Magnesium	214mg	43mg
Manganese	33.3mg	0.229mg
Phosphorus	168mg	34mg
Potassium	1320mg	415mg
Sodium	27mg	13mg
Zinc	3.64mg	0.34mg

6.5 CONCEPT OF DEEPANA

Definition of Deepana

- **Sushruta -** Deepana Dravya are predominant in Agni mahabhoota as both the Deepana drugs and Agni mahabhoota are having Shamana Karma[90].
- **Vagbhata -** The activity which increases agni without doing Amapachana is called Deepana[91] eg. Ghrita
- **Sharangadhara and Bhavaprakasha-** The one which does not do Amapachana but does Agnideepana is called Deepana[92]. eg. Mishi.

  Deepana are those Dravyas (drugs) or Karma (activity) like Snana, Vyayama etc. which increases the Agni but are incapable of Ama Pachana . The best Dravya for Deepana is Mishi according to Acharya Sharangdhara[93].
- **Sharangdhara-** Opines *Deepana* as that which increases the *Agni* but does not do the *AmaPachana*. The *Mahabhuta* predominant in *Deepana* is *Agni Mahabhuta*. Thus as the *Deepana Dravya* has the predominance of only *Agni* it just increases the *Agni.*
- **Adhmalla**- *Deepana* increases the *Jatharagni,* as the other two *Agni* i.e. *Bhutagni* and *Dhatwagni* are depended upon it. Thus increasing *Jatharagni*, will also lead to the increase of *Bhutagni* and *Dhatwagni*. Thus *Deepana Dravya* is used in the conditions where we have to increase the *Agni* say in the case of before intake of a meal.
- **Yoga-Ratnakara** - Has rightly pointed out that, before taking food one should always chew small pieces of *Ardraka* well mixed with *Lavana* and it promotes *Agni*[94]
- **Charaka** - Describes Deepaniya Dasemani i.e. Pippali, Pippalimula, Chavya, Chitraka, Srngavera, Amlavetasa, Maricha, Ajamoda, Bhallatakasthi and Hingu Niryasa[95]. *Charaka* has mentioned *Deepaniya* action; and introduced a group of drugs under *Deepaniya Dashemani* (Best of ten drugs possessing stomachic activity[96].

This list also includes *Pachaneeya* (Digestants) drugs. The drugs of this *Deepaniya* groups can be categorized them into three group viz; *Deepaniya* (appetizer), *Pachaniya* (Digestants), and *Deepaniya-Pachaniya* (appetizer and Digestants) on the basis of main therapeutic activity of herbs included in the group

Table No 38- Drugs included in Deepaniya group according to Charaka

No	Name	Rasa	Guna	Veerya	Vipaka	Karma
1.	Pippali *(Piper longum)*	Katu	Laghu, Snigdha, Tikshna, Guru	Ushna	Madhura	Deepana
2.	Pippalimoola *(Piper longum)*	Katu	Laghu, Snigdha	Ushna	Madhura	Deepana, Pachana
3.	Chavya *(Piper chaba)*	Katu	Laghu, Ruksha	Ushna	Madhura	Deepana, Pachana
4.	Chitraka *(Plumbagozeylanica)*	Katu	Laghu, Ruksha, Tikshna	Ushna	Katu	Deepana pachana
5.	Shringavera *(Zingiberofficinale)*	Katu	Guru, Ruksha, Tikshna	Ushna	Madhura	Deepana, Bhedana
6.	Amlavetas *(Garcinia pedunculata)*	Amla	Laghu, Ruksha	Ushna	Amla	Deepana
7.	Maricha *(Piper nigrum)*	Katu	Laghu, Tikshna, Ruksha	Ushna	Katu	Deepana
8.	Ajamoda *(Apiumgraveolens)*	Katu, Tikta	Laghu, Ruksha, Tikshna	Ushna	Katu	Deepana
9.	Bhallataka *(Semecarpusanacardium)*	Katu, TIkta, Kashaya	Laghu, Snigdha, Tikshna	Ushna	Madhura	Deepana, Bhedana
10.	Hingu niryas *(Ferula foetida)*	Katu	Laghu, Snigdha, Tikshna	Ushna	Katu	Rochan, Pachana, Bhedana

Table No 39- Drugs included in *Shushruta* with *Deepana* and *Pachana* properties

S. No.	Name of the group	Rasa of the first substance	Action
1.	Pippalyadigana	Katu	Amapachana, Deepan
2.	Haridradi	Katu,Tikta	Doshapachana
3.	Vachadi	Katu, Tikta	Doshapachana
4.	Guduchyadi	Tikta, Kashaya	Deepan
5.	Mustakadi	Tikta, Katu, Kashaya	Pachana
6.	Triphala	Kashaya	Deepana
7.	Trikatu	Katu	Deepana
8.	Amalakyadi	Amla	Deepana
9.	Brihatpachamool	Tikta, Kashaya	Deepana
10.	Dashmoola	Tikta, Kashaya	Pachana

Table No 40- Drugs amongst group of Deepana and Pachana by Vagbhata

No.	Name of the best herb	Rasa	Guna	Veerya	Vipak	Karma
1.	Musta *(Cyperusrotundus)*	Tikta, Katu, Kashaya	Laghu, Ruksha	Sheeta	Katu	Deepana, Pachana
2.	Ativisha *(Aconitum heterophyllum)*	Tikta, Katu	Laghu, Ruksha	Ushna	Katu	Pachana
3.	Bilwa *(Aegle marmelos)*	Kashaya, Tikta	Laghu, Ruksha	Ushna	Katu	Deepana
4.	Udichya *(Pavoniaodorata)*	Tikta	Laghu	Sheeta	Katu	Deepana
5.	Katvanga *(Oroxylumindicum)*	Tikta, Kashaya	Laghu, Ruksha	Sheeta	Katu	Deepana
6.	Prishniparni *(Urariapicta)*	Madhura , Tikta	Laghu, Snigdha	Ushna	Madhura	Deepana Pachan
7.	Pippalimoola *(Piper longum)*	Katu	Laghu, Snigdha	Ushna	Madhura	Deepana pachan
8.	Chitrak *(Plumbagozeylanica)*	Katu	Laghu, Ruksha, Tikshna	Ushna	Katu	Deepana pachan
9.	Hingu *(Ferula foetida)*	Katu	Laghu, Snigdha, TIkshna	Ushna	Katu	Pachaneeya
10.	Amlavetas *(Garcinia pedunculata)*	Amla	Laghu, Ruksha	Ushna	Amla	Deepana
11.	Guduchi *(Tinosporacordifolia)*	Tikta, Kashaya	Guru, Snigdha	Ushna	Madhura	Deepana

Table No 41- Showing predominant Rasa in Deepana.

Sl. No.	Charaka Sutra 26/42	Sushruta Sutra 42/9(1-5) /& 10	AstangaHrdhya Sutra 10/10-21
1.	Amla	Amla	Amla
2.	Katu	Katu	Lavana
3.	Tikta	Tikta	Katu
4.	Lavana		

Table No 42- Showing predominant *Rasa* in *Pachana.*

Sl.NO	Charaka(Su. 26/42)	Sushruta(Su.42/9)	Astanga Hrdhya (Su 10/10-21)
1.	Lavana	Amla	Amla
2.	Tikta	Lavana	Katu
3.		Katu	

Application of Deepana concept

- **As Purvakarma in Shodhana**

According to AstangaSangraha[97], before giving Sneha Pana, Mridu Bhesaja must be given to increase Agni and for achieve Kostha Laghutha (lightness of the GI Tract) with the help of Deepana and Pachana.

- **As Paschat Karma in Shodhana**

Acharya Charaka explained in Apamarga Tanduliya Adhyaya, second chapter of sutrasthana of Charaka Samhita[98] that, Agnimandhya will appear after the Shodhana. As a small fire turns into huge fire by the addition of Trna (dried grass) and Gomaya (cow dung cake) similarly after Shodhana, Peyadi Krama facilitate in increasing the Agni and thus able to digest the food. So to increase the Agni various Deepana and Pachana Yavagu are used.

- **To treat the Vyapat of Shodhana**

Deepana Pachana is used as Chikitsa in the case of Adhmana, Parikartika, Srava and Sthamba Vyapad of Vamana and Virechan, and also in Klama, Ayoga, Srava and Parikartika Vyapad of Basti[99]

5.6 RESEARCH UPDATES

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MATERIAL AND METHODS

Study design – Analytical, Experimental and Observational study

Study was mapped in following steps,

I. Conceptual study
II. Analytical study /Pharmaceutical
III. Experimental study for screening of Agnideepana activity
IV. Taste threshold study

I. Conceptual study

The Review of Literature will be performed by formulation of search keys as follows,

- Literature review on Concept of rasa and Katu Rasa
- Drug Review- Ardraka(wet *Zingiber officinale* Roscoe *)* and Shunti (dry *Zingiber officinale* Roscoe *)*
- Literature Review will be done from all available sources such as contemporary books, articles and internet etc.

II. Analytical study /Pharmaceutical

The Analytical study /Pharmaceutical will be performed by following methods,

- **Collection of drug:** Collection of the Ardraka (wet *Zingiber officinale* Roscoe*)*from Natural Habitat and dried to obtain Shunti(wet *Zingiber officinale* Roscoe*).*
- **Authenticationof drug**: The genuinity of the trial drugs were confirmed and authenticated done at Agarkar research Institute, Pune. The reference number Ayu/16/189; Dated 14-01-2016and it is enclosed in annexure.
- **Place of Study**
    - Macro and Microscopic study was carried out at Analytical Laboratory of Department of Dravyaguna, SDM College of Ayurveda and Hospital, Bengaluru, Karnataka
    - Physico-chemical and phyto-chemical analysis was carried out at MerieuxNutri sciences Bangalore Pvt. Ltd, Bengaluru, Karnataka
    - HPLC Study was carried out at Natural remedies Pvt. Ltd, Bengaluru, Karnataka
    - GC-MS of analysis of the trial drugs was done at Bureau Veritas Consumer products services, Pvt. Ltd. Chennai.

- **Experimental study :**The animal experimental study for Deepana activity was done at SDM Centre for Research in Allied Sciences at Udupi ,Karnataka
- **Taste threshold study** :Study was done at SDM college of Ayurveda & Hospital, Hassan, Karnataka

6.1 Analytical Study/Phamaceutical study

6.1.1 Organoleptic study

It means evaluation of drug by the organs of sense (skin, eye, tongue, nose and ear) or Macroscopic evaluation and it includes evaluation of drugs by color, odor, taste, size, shape and special feature, like touch, texture etc. It is the technique of qualitative evaluation based on the study of morphological and sensory profile of whole drugs.

6.1.2 Pharmacognostic study

1. Macroscopic study[100]

The macroscopic characters of the trial drugs Ardraka and Shunti were observed for the following features,

- Colour
- Size and Shape
- Taste
- Surface
- Odour

2. Microscopic study

The T.S of the Ardraka was done as per the protocol of Microscopic Description.

6.1.3 Physicochemical Analysis[101]

1. Determination of Foreign Matter Take 100 gm of sample (unless otherwise Specified) and spread in a thin layer on a suitable platform. Examine in daylight with unawed eye or using 6 X or 10 X magnifying glass and separate the foreign matter. Dust regarded as mineral admixture is separated by sifting the sample through a 250 µm sieve. Weigh the sorted foreign matter and calculate the foreign matter content in per cent with reference to drug sample.

2. **Determination of Loss on Drying (Determination of Moisture):** Place about 10 gm of drug (without preliminary drying) after accurately weighing, in an evaporating dish. Dry at 105° for 5 hours and weigh. Continue the drying and weighing at one hour interval until difference between two successive weighing corresponds to not more than 0.25%. Constant weight is reached when two

consecutive weighing after drying for 30 minutes and cooling for 30 minutes in a desiccator, show not more than 0.01gm difference.

Calculation: weight of empty petriplate +weight of sample-weigh of petriplate with sample after drying X100

Weight of sample

Result= Percentage of loss of drying.

3. **Mesh size of the powder:** The standard protocol mentioned in Quality control methods of medicinal plant materials was followed for the mesh size determination of the powder. All the particles will pass through a No.355 sieve and not more than 40% through a No180 sieve.

4. Determination of Angle of Repose: As per the protocol given by Dutta et al., 1988; Olaoye2000, a topless and bottomless box made of plywood, with a removable front panel was prepared and placed on even surface. Then box was filled with rhizomes of ginger and the front panel was quickly removed. A natural slope of rhizome was find as they slide down, Then the angle of repose was calculated using formula by $\theta = tan^{-1}(h/l)$

θ: is the Angle of Repose (degrees),

h :is the Height of the free surface of the rhizomes

l: is the Length of the heap formed outside the box

5. Determination of Total Ash: Take about 2 gms accurately weighed, ground drug in a previously tared silica dish, previously ignited and weighed. Scatter the ground dry in a line even layer on the bottom of the dish. Incinerate by gradually increasing the heat not exceeding dull red heat (450°C) until free from carbon. Cool and weigh. Calculate the percentage of ash with reference to the air dried drug.

Formula = Weight of ash X 100 = % w/w
Weight of powder

6. Determination of acid insoluble ash: Boil the ash obtained in the process described under determination of total ash for 5 minutes with 25 ml of dilute hydrochloric acid. Collect the insoluble matter on an ash less filter paper. Wash with hot water and ignite. Weigh it and calculate the percentage of acid insoluble ash with reference to the air dried drug.

7. Determination of water soluble extractive: Macerate about 5 gms of air dried drug with 100 ml of Chloroform water in a closed flask for twenty four hours, shaking frequently during six hours and allowing standing for eighteen hours. Filter this and

pipette 25 ml of this liquid and evaporate to dryness in a tared flat bottomed dish at dry at 105°C, to constant weight. Calculate the percentage of water soluble extractive with reference to air dried drug.

8. **Determination of alcohol (ethanol) soluble extractive:** Macerate about 5 gms of the air dried sample with 100 ml of ethanol in a closed flask for twenty four hours, shaking frequently during six hours and allowing standing for eighteen hours. Filter rapidly taking precautions against loss of solvent, evaporate 25 ml of the filtrate to dryness in a tared flat bottomed dish and dry at 105°C, to constant weight and weigh it. Calculate the percentage of alcohol-soluble extractive with reference to the air dried drug.

9. pH Value: The pH values of the trial drugs Ardraka and Shunti are tested as per the standard protocols. The instrument was calibrated with standard buffer solution(6 pH tablets) after calibration the electrodes were dipped in sample extracts and readings were noted.

6.1.4 Preliminary Phytochemical Evaluation

1. Identification Of Natural Flavonoids

Mobile Phase- Benzene: Ethyl Acetate (4: l)

Weigh about 5 gm of sample into a separating funnel, add about 20 ml of Methanol and shake for new minutes. Filter to the residue obtained, again add 20 ml of Methanol and shake, filter methanol, combine both the filtrates and evaporate to dryness. To this dried sample, add 1 ml of Methanol and spot about 10µl on the TLC plate. Elute the plate with Mobile phase to $3/4^{th}$ of the plate, dry the plate at 105^{O} C and view as below:

Table No 43 - Colour reactions of natural flavonoids compounds on paper

Class	**REAGENT-NONE LIGHT-VISIBLE**	**NON UV**	**NH3 VISIBLE**	**NH3 UV**
Anthocyanins	Pink, Orange, red purple	Dull Red or purple Pink brown	Blue-grey Blue	Bluish
Flavones	Pale Yellow	Dull Brown Red Brown Yellow Brown	Yellow	Bright Yellow Yellow Green Dull Purple
Flavonols	Pale Yellow	Bright Yellow Yellow Green	Yellow	Bright Yellow Yellow Green Green

		Brown		
Chalcones	Yellow	Brown Black Yellow Brown	Yellow Orange Red Orange Pink	Orange Red Purple Black
Flavones	Colorless	Colorless	Colorless	Colourless Pale Yellow Yellow Green
Catechins	Colorless	Colorless	Colorless	Fluorescent Pale Blue Black
Leucoanthocyanins	Colorless	Colorless		
Chlorogenic acids	Colorless	Blue	Colorless Pale Yellow	Bright Blue Green

2. Identification of Alkaloids

System: Silica Gel 60 F254 Merck pre-coated plates.

Mobile Phase: Chloroform: Methanol (90:10)

Location Reagent:Dragendroff' s Reagent

Procedure: Weigh about 2.0 gms of the sample into a separating flask. Add about 20 ml water. Basify with dilute ammonia and extract with two quantities 25 ml of chloroform. Filter through anhydrous Sodium sulphate. Evaporate the chloroform layer to the residue obtained. Add about 1 ml of Methanol. Shake well to dissolve and spot about 10µl solution on the TLC plate. Elute the plate with Mobile Phase to 3/4th of the plate. Dry the plate at 105°C and spray the plate with Dragendroff's reagent. If alkaloids are present, brownish red spots are obtained. Brownish red spots were obtained in the sample solution.

3. Test of Carbohydrates

Molisch's Test (General Test): 2 to 3 m1 aliquoteextract + few drops of alpha naphthol solution in alcohol, shake and add concentrated sulphuric acid from sides of test tube, Violet ring is formed at thejunction of the two liquids.

4. Test for Amino Acids

Ninhydrin Test (General Test): Heat 3ml test solution and 3 drops of 5% Ninhydrin solution and boil in water bath for 10 minutes, a purple or bluish colour appears.

5. Tests for Steroids

Salkowski reaction: To 2ml of the test solution add 2ml of chloroform and 2ml of concentrated H_2SO_4, Shake well, chloroform layer appears red and acid layer shows greenish yellow fluorescence.

6. Tests for cardiac glycosides

Test for Deoxysugars (Keller -Killani Test): To 2ml extract, add glacial acetic acid, one drop of 5% FeCL3 and concentrated H_2SO_4. Reddish brown colour appears at junction of the two liquid layers and upper layer appears bluish green.

7. Test for saponin glycosides

Foam Test: Shake the drug extract vigorously; with water honey comb shaped foam appears which is persistent for 10 minutes indicates the presence of saponins.

6.1.5 T.L.C (Thin Layer Chromatography) [102]

Thin layers of glass plates of size 15×15 cm were used. Pre-coated Silica gel plates Activated at 1100 C in hot air oven for an hour and later used.

Solvent system: N Hexane: Di ethyl ether (4:6)

Procedure: One micro liter of extracted sample was spotted on TLC plates using capillary tube in a horizontal line about two cm from lower end. Then the plates were transferred to a chamber containing solvent system and closed. Solvent migrates and when it reached upper end, plates are taken out and air dried. Rf values were noted based on the separation which expresses relative rate of movement of solute and solvent.

Visualization: The spotted plated were observed under ultra-violet light (254 nm and 366 nm) and later derivatization with Vanillin Sulphuric acid.

H.P.T.L.C (High Performance Thin Layer Chromatography)

On consultation with subject experts and experts of Analytical laboratory at Natural remedies Pvt. Ltd. Bengaluru, suggested that HPTLC is a semi quantitative analysis and lower version of finger printing which is not much accurate to do the quantification of the active constituents which is required in the present study. Hence it was advice to take up HPLC analysis which is latest and higher version of fingerprinting technique and quantification of the active constituents can be done.

6.1.6 H.P.L.C (High Performance Liquid Chromatography) [103]

Reference Sample(s) Reference:

Individually dissolve 0.5 mg each of 6-gingerol and 6-shogaol in 1 mL of methanol. Optional: individually dissolve 0.5 mg each of 8-gingerol and 10-gingerol in 1 mL of methanol.

Stationary Phase: Silica gel 60, F254

Mobile Phase: Ethyl acetate, formic acid, water 88:6:6 (v/v/v)

Sample Preparation Method Sample: Mix 1 g of powdered sample with 10 mL of methanol and sonicates for 10 minutes, then centrifuge or filter the solutions and use the supernatants / filtrates as test solutions.

Derivatization reagent: Anisaldehyde reagent Preparation: 170 mL of ice-cooled methanol are mixed with 20 mL of acetic acid, 10 mL of sulfuric acid, and 1 mL of anisaldehyde. Use: Dip (time 0, speed 5), heat at 100C for 3 min.

Detection Method Saturated chamber; developing distance 70 mm from lower edge; relative humidity 33%

6.1.7 GC-MS (Gas Chromatography with Mass Spectrophotometry)

Plant materials fully matured rhizomes of ginger were collected from the natural habitat. GC-MS analysis of essential oil Chemical analysis. The steam volatile oil from ginger was extracted and the oil was analyzed using agas chromatograph equipped with QP 2010 mass spectrometer.

The injection port was maintained at 250°C; the detector temperature was 220°C; oven temperature was programmed as follows: 60°C for 5 min and then increased to 110°C at the rate of 5°C min-1, then up to 170°C at the rate of 3°C min-1 , again up to 220°C at the rate of 5°C min-1 , at which the column was maintained for 3 min. The split ratio was 1:40 and ionization energy 70 eV.

The calibration time was 0.25 min with the maximum temperature of 450^0C with the injection volume 1µl.

The major factors influencing instrument performance include sensitivity and resolution (primarily due to the condition of the ion source and focusing), chromatographic resolution and sample transfer. The analytical sample must also be in a form suitable for analysis by GC-MS. Data handling and Storage Procedures described in SOP/ACH/OOI is followed. Data held on disc should be transferred to magnetic tape in order so that they may be examined.

6.2 Experimental study for screening of Agnideepana activity

Design: Deepana Pachana model

The experimental study was carried out based on the model designed by Dr Ravishankar B et.al[104] with slight modificatons.

Place of experimental study: SDM Centre for Research in Allied Sciences, Udupi,Karnataka.The experiments were carried out in conformity with the

Institutional Animal Ethics Committee(IAEC) after obtaining its permission (Approval letter number: IAEC/9/11/15).

Grouping: No of Groups-3

- Group 1-Test drug 1–Ardraka (Wet *Zingiber officinale* Roscoe)
- Group2-Test drug 2- Shunti (Dry *Zingiber officinale* Roscoe)
- Group3- Normal-Control Group

Animals were fed with Amrut brand rat pellet feed supplied by Pranav Agro Mills Pvt. Limited. For their drinking purpose potable drinking water *ad libitum* was used.

The standard drug group cannot be taken here as there is no standard drug material used as appetizer and hence only normal control group was taken for the study.

Selection of the Animal

Wistar Strain Healthy Albino rats having weight ranging from 150- 200 gm of either sex were randomly selected and taken for study. The study comprised of 3 groups with 6 rats in each group.

Dose calculation

Human dosage will be converted into animal dosage based on dose fixation formula by Paget and Barnes (1964)[105]

Human dose x Body surface area constant of the rat x 5

= H. Dose x 0.018x5 / k.g body weight

=.... x 0.018 x5/ k.g body weight

=...../ k.g body weight

The trial drugs werefed orally to all the rats of respective groups for 10 days.

1. **Ardraka (wet *Zingiber officinale* Roscoe)**- administered in Swarasa form.

Human dose of swarasa is 48 ml.

= H. Dose x 0.018x5 / k.g body weight

= 48 ml x 0.018 x5/ k.g body weight

= 4.32 ml/kg body wt

So for the rat of approximate body wt 150gm dose is = 0.648 ml in divided dose was administered.

2. **Shunti (Dry *Zingiber officinale* Roscoe)**–administered after soaking the powder of Shunti in water for 18hours.

= H. Dose x 0.018x5 / k.g body weight

= 80 ml x 0.018 x5/ k.g body weight

= 7.2 ml/kg body wt.

So for the rat of approximate body wt 150gm dose is = 1.08 ml in divided dose was administered.

Drug – with the water and Gum acacia as vehicle

Route of administration: oral route with the help of a syringe.

Study protocol: The animals were acclimatized for 5 days prior to administration of test drugs in metabolic cage and received equal quantity of food and water. Then the test drugs (Ardraka and Shunti) were administered orally to respective groups for next 10(from 6^{th} day to 15^{th} day) consecutive days. Control group rats received equal quantity of food and water. In all the 15days of the study, the body weight, food consumption, water intake, urine output, feacal output. were recorded during this period.

On 15^{th}day all animals were kept for overnight fasting.On 16^{th} day under ether anesthesia animals were sacrificed with the cervical dislocation and then abdomen was dissected. Dissecting out the stomach and itsgastric secretion was collectedand sent for biochemical analysis

(Total protein, pH, Total acid, free acid, Carbohydrate estimation, D-Peptic activity)

Assessment criteria

Each rat from three groups were placed in metabolic cage provided separately with measured amount of water and food per day. After 24 hrs the amount of water and food remaining in the respective holders were measured to obtain the quantity of water and food consumed per day.The quantity of stool and urine collected from the rats were also measured. This was recorded initially for consecutive 5 days without administering the drug to the rats to obtain base line data of each rat.

Sixth day onwards, the drugs were administered and the same procedure was repeated for 10 more days. Quantity of urine and stoolwere measured every day. On the 1^{st},10^{th} and 15^{th} day, the weight of each rat from all the groups were noted.The following Parameters were used for assessement of Deepana & Pachana action,

1. Food consumption
2. Water consumption
3. Fecal output
4. Urine output
5. Food conversion ratio(FCR) = Food intake / Fecal output.

6. Gastric Juice-Volume, total& free acids, peptic activity, total Protein and total Carbohydrate ratio (Tp: TC) was considered.

- Increase in food consumption without increase in the food conversion ratio would be considered as Deepana effect and increase in food conversion ratio was considered as Pachana effect.
- Enhanced food intake is considered to indicate increased Deepana property. Decreased fecal output without concomitant increase in the food conversion ratio is considered to indicate increase in the Pachana property. Deepana property is mainly concerned with food breakdown and digestion. If there is decrease in food digestion, there may be reflex inhibition in food intake. Pachana property is concerned with assimilation of digested food into body constituents. Any change in it was reflected by the changes in food conversion ratio (FCR) and body weight[106].
- Fecal consistency and urine output was considered.

Statistical methods

The data is represented as Mean and SEM for experimental study.Evaluation was done by using one way ANOVA followed by Dunnet's multiple t tests and Post hoc test.

6.3 Taste Threshold Study (Rasa Nirdharana)

The taste Threshold Study (Rasa Nirdharana) was carried out as mentioned below,

1. Pilot study
2. Main study

Principle: The criteria for determination of Rasa is the taste of the tongue (*RasoNipate Dravyanaam*)

Source: The study was carried out at SDM College of Ayurveda and Hospital, Hassan and approval was obtained for conducting the observational study (Approval number –SDM /IEC/90/2015-2016)

Study design: Observational study

To obtain the reliability for the questionnaire designed for the assessment of taste threshold, pilot study was carried out as mentioned below before conducting the actual taste threshold study.

1. Pilot study

The pilot study was conducted in 3 groups and sample size each group is 30.

1. Standard Group (*Capsicumannum*)-30 subjects
2. Ardraka (Wet *Zingiber officinale* Roscoe) -30 subjects
3. Shunti (Dry*Zingiber officinale* Roscoe)-30 subjects.

Test Drug preparation

- 10gm of the Ardraka was crushed in mortar and pestle and used for the solution preparation.
- Shunti was also taken 10gms and crushed and made into coarse powder in mortar and pestle and used for the solution preparation.

Inclusion criteria

1. Apparently healthy volunteers
2. Age - between 18 to 25 years
3. Gender - either
4. Informed written consent will be taken

Exclusion criteria

1. JihwaSamata
2. Diseased persons-Allergy and endocrine disorders
3. Pregnancy
4. Smoking and Tobacco chewers
5. Chronic alcoholics

Methodology of Pilot study: WHO method for determination of Bitterness value was adopted for the Katu rasa (Pungent taste) determination.

Taste threshold test with the questionnaire which includes parameters mentioned in the classics and the Likert Values Scale and Visual analog Scale. Questionnaire designed were validated for internal consistency using Cronbach's Alpha. It was found that Cronbach's Alpha for the questionnaire was "good" so main study was continued with the same questionnaire.

2. Main study (Taste threshold observational study)

Sample Size

1. Standard Group (Capsicum)-100 subjects
2. Ardraka (Wet *Zingiber officinale* Roscoe) -100 subjects
3. Shunti (Dried *Zingiber officinale* Roscoe)-100 subjects

Test Drug preparation

- 10gm of the Ardraka was crushed in mortar and pestle and used for the solution preparation.
- Shunti was also taken 10gms and crushed and made into coarse powder in mortar and pestle and used for the solution preparation

Inclusion criteria

1. Apparently healthy volunteers
2. Age - between 18 to 25 years
3. Gender - either
4. Informed written consent will be taken

Exclusion criteria

1. Jihwa Samata
2. Diseased persons-Allergy and endocrine disorders
3. Pregnancy
4. Smoking and Tobacco chewers
5. Chronic alcoholics

Methodology [107]

WHO method is used for determination of Bitterness value and it is adopted for the determining Katu rasa (Pungent taste).

The standard drug chosen for this was *Capsicum annum* which is said to be highest in pungency[108].

The following steps based on the WHO methodology was applied,

1. Safe drinking water was used for extract preparation and also for mouth wash after each tasting for both groups of test drug as well as the standard drug.
2. In order to take Informed consent from the healthy volunteers, they were given orientation session on taste threshold test and how to fill the given proforma and subsequently a date for the test was agreed. The participants further agreed for refraining from the food, beverages and medicaments an hour before the test.
3. Participants were given to taste drinking water first that was to be used in the test and a solution prepared with 0.058gm of *Capsicum annum* in 10mlof that water.
4. The tasting of the extract of serial dilution was started with the lowest to the highest concentration in order to retain sufficient sensitivity of the taste buds.
5. The temperature during the testing hours was $25^{O}C$ -$28^{O}C$

Preparation of Standard Solution *(Capsicum annum)*

The standard drug chosen for this study was *Capsicum annum* which is said to be highest in pungency.(Lim T K "Edible medicinal and non-medicinal plants " springer publication Vol 6, Fruits ,PP171).The taste threshold for the standard drug *Capsicum annum* will be performed by the same method and the taste threshold of the Adraka (Wet *Zingiber officinale* Roscoe) and Shunti (Dried *Zingiber officinale* Roscoe)will be compared with taste threshold of standard 0.1 gm of Capsicum was dissolved in sufficient drinking water to produce 100m. 5ml of this solution was diluted to 500ml with safe drinking water to give the stock standard solution of capsicum annum labeled Sc and contained 0.01mg of the capsicum/ml and the serial dilution was prepared as mentioned below,

Table No 44-Serial dilution and concentration of *Capsicum annum* in 10 ml of solution

Test tube no	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Stock Solution in ml Sq (ml)	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6	5.8	10.0
Safe Drinking Water in ml	5.8	5.6	5.4	5.2	5.0	4.8	4.6	4.4	4.2	-
Capsicum annum in 10 ml of solution (= c) (mg	0.042	0.044	0.046	0.048	0.050	0.052	0.054	0.056	0.058	1

Preparation and Dilution of herbal extract (Test) stock solution

Exactly 10gms of the Ardraka and Shuntiwas extracted with drinking water to produce 100 ml of aqueous extract.5ml of this solution was taken and was diluted to 500ml with drinking water.This solution was labeled the stock extract (Sh).It contained 0.01mg of the herb /ml .Ten tubes labeled 1 to 10 were set up and it contained the drug dilution as follows

Table No 45-Serial dilution and concentration of Ardraka *(WET Zingiber Officinale*) in 10 ml of solution

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Stock Solution in ml Sq (ml)	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.0
Safe Drinking Water in ml	9.00	8.00	7.00	6.00	5.00	4.00	3.00	2.00	1.00	-

Ardraka (WET Zingiber Officinale) constituents in 10 ml of solution mg	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	1

Table No 46-Serial dilution and concentration of Shunti *(*Wet *Zingiber Officinale*) in 10 ml of solution

Test tube no	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Stock Solution in ml Sq (ml)	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.0
Safe Drinking Water in ml	9.00	8.00	7.00	6.00	5.00	4.00	3.00	2.00	1.00	-
Shunti (Dry Zingiber Officinale) constituents in 10 ml of solution (= c) (mg	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	1

Procedure of Test

First, the participants rinsed their mouth with drinking water and then tasted 10ml of the most dilute solution by swirling it in the mouth for 30sec, noting whether or not the solution tasted any. They held the solution in the mouth for another 30sec and noting whether or not there was a loss of pungency. After this the solution was spit out and the mouth rinsed with drinking water. The participant waited for 10min before the next higher concentration was tasted. The tasting started from the lowest to the highest concentration was tasted.

After the first series of tasting (either with the *Capsicum annum* or the test drug), the mouth was rinsed thoroughly with drinking water until no pungency sensation remained. Waiting of around 5 to 10 min gap was given before carrying out the second series of tasting.

The participants in the test filled the questionnaire and the Pungency value (units/gm) was computed from equation as mentioned in procedure.

Assessment criteria

The taste threshold for the standard drug *Capsicum annum* was performed by the same method and the taste threshold of the Adraka (Wet *Zingiber officinale* Roscoe) and Shunti (Dry *Zingiber officinale* Roscoe) were compared with taste threshold of standard drug chosen, that is *Capsicum annum* under two parameters

a) **Determination of Taste threshold**

Taste threshold test with the questionnaire which includes parameters mentioned in the classics and the Likert Values Scale and Visual analog Scale[109]. Visual Analog Scale (VAS) for the assessment of Pain is taken which is considered as one of the standard method for the assessment criteria of pain. The katurasa dravya has Tikshna and Sukshma guna, when kept on the tongue it irritates and create sensation of Pain. This is experienced while taking Katurasa. Katurasa will cause Jihwagraudvejana, which is a sensation of Ginger[110].

Questionnaire designed and validated for internal consistency using Cronbach's Alpha.

b) Determination of Pungency Value

The pungency of the Ardraka (Wet *Zingiber officinale* Roscoe) and Shunti (Dried *Zingiber officinale* Roscoe) was determined by the method described by W.H.O. This method is identical to the European Pharmacopeia and by Sunday J Ameh et.al[111]method prescribed and adopted.

$$\text{Pungency value} = \frac{2000 \times c}{a \times b}$$

a-The concentration of the herbal stock solution (Sh) in (mg/ml),

b- The volume of Sh (in ml) in the tube with the threshold pungency concentration,

c-The quantity of *Capsicum annum* (in mg) in the tube with the threshold pungency concentration

7. Observation and Results

The observation followed by results are depicted as follows,

I. Conceptual study
II. Analytical study / Pharmaceutical
III. Experimental study for screening of Agnideepana activity
IV. Taste threshold study

I. Observation on Conceptual study

The detailed review of literature is prepared. All these points were discussed under basic concepts, modern points and Research updates in discussion chapter.

7.1.1 Observation on Organoleptic study

The fresh and dried rhizomes, powder of *Zingiber officinale* were observed on characters like taste, odour, colour and touch, with the panchajanendriya pariksha. On evaluation with burning it was observed that both the fresh and dry rhizome of the *Zingiber officinale* had aromatic odour indicating of presence of essential oil content.

Table No 47 –Showing results of Organoleptic Characters

	Roopa /Colour	**Rasa /Taste**	**Shabda**	**Sparsha /Touch**	**Gandha /odor**
Adraka	Brownish	Katu Kashaya	Breaks with sound and short fracture &Fibrous in nature	Warty &smooth surface	Tikshnagandha,aromatic characteristic odor
On burning	Turns Blackish	N.A	Burns with noise	N.A	Characteristic in the beginning and later burnt odor
Shunti	Light brownish grey shrivelled surface	Katu	Breaks with sound and fibrous	Rough and warty	Characteristic aromatic odor
Powder form	Greyish	Katu	N.A	Coarse and fibrous	Characteristic aromatic odour
On burning	Turns into ash	N.A	Burns and turns into ash, no sound	N.A	aromatic odour and later burnt odour

7.1.2 Observation on Pharmacognostic study

Macroscopic Features: Macroscopic characters of both rhizomes were studied for the detection of its authenticity. The characters were compared with the API standards and other pharmacognosy books.

The fresh rhizome is flattened laterally and cylindrical with scaly leaves and axillary buds. Surface of the rhizome is fairly smooth, having pale yellowish brown breaks with a short fracture and a few fibrous elements.

The dried rhizome consists of grayish buff coloured with striated outer surface.

Table No 48 - Pharmacognostic study

Parameter	Wet	Dry
Macroscopic description	Wet rhizome is brownish buff colored with longitudinal striations. Laterally compressed with a length of around 2 to 4 inches and 1 to 1.5 cm width. Undeveloped bud and scar seen when the rhizome is broken it yields a short fracture.	Dry rhizome is longitudinally shriveled & laterally compressed, bearing short, flattish, ovate oblique branches on upper side each having at its apex a depressed scar externally buff coloured showing longitudinal striations and occasional loose fibres.
Microscopic description	Black outer cork and colourless inner cork is seen. Cortex is containing polygonal, thin walled parenchymatous ground tissue. The presence of oleoresin cells, tracheids, starch granules, lignified pitted fibers & Ring of vascular bundles.	

Distribution

Shunti consists of dried rhizome, widely cultivated in India, rhizomes dug in January-February, buds and roots removed, soaked overnight-in water, decorticated, and sometimes treated with lime and dried.

Macroscopic characters

Rhizome, laterally compressed bearing short, flattish, ovate, oblique, branches on upper side each having at its apex a depressed scar, pieces about 5-15 cm long, 1.5-6.5 cm wide and 1-1.5 cm thick, externally buff colored showing longitudinal striations and occasional loose fibers, fracture short, smooth, transverse surface exhibiting narrow cortex, a well-marked endodermis and a wide stele showing numerous scattered fibro-vascular bundles and yellow secreting cells, odor agreeable and aromatic, taste, agreeable and pungent.

Microscopic characters

Transverse section of rhizome showed outer and inner cork, parenchymatous ground tissue, endodermis, a vascular bundle. Cortexof isodiametric thin-walled parenchyma with scattered vascular strands and numerous isodiametric idioblasts, containing a yellowish to reddish-brown oleo-resin, endodermis slightly thick walled, free from starch immediately inside endodermis a row of nearly continuous collateral bundles usually without fibers stele of thin-walled. Parenchyma cells, arranged radially around numerous scattered, collateral vascular bundles, each consisting of a few unlignified, reticulate or spiral vessels, a group of phloem cells. Yellow polygonal oleo-resin cell is also present in the cortical region. Endodermis is single layered and a ring of vascular bundle is present below endodermis.

Diagnostic characters

- Presence of black outer cork and colorless inner cork.
- Presence of polygonal, thin walled parenchymatous ground tissue.
- Presences of vascular bundles are not surrounded by bundle sheath.
- Presenceof oleo-resin cells in cortical region.
- Presence of prominent endodermis followed by ring of vascular bundles.

7.1.3 Physiochemical/Pharmaceutical analysis

Physicochemical analysis was carried out by using various Physiochemical parameters as mentioned in Ayurvedic Pharmacopoeia of India.

a) Foreign matter estimation

Ardraka had more foreign matter like mud particles and little of insect content. Ardraka had 0.7 % than 0.4% of the Shunti.

b) Loss on drying

In loss on drying it was observed that Ardraka had 84.40% of moisture and Shunti showed 12.00% .The loss on drying indicates that the drug is safe regarding any growth of bacteria, fungi and yeast. Moisture content of the drug determines the shelf life and keeping quality of ginger. The fresh rhizome was highly irregular in size and shape and Consists of primary, secondary and tertiary finger rhizomes. On drying reduction in the length of rhizome was observed.

c) Angle of repose

The angle of repose for fresh whole ginger rhizomes was 34.6° and for dry ginger the value increased to 39.5°.The angle of repose increases on drying. Thus there was increase in the angle in Shunti when compared to Ardraka[112].

d) pH Value

The pH of the Ardraka was 7.74 % and Shunti was 4.48% indicative of Ardraka is alkalinity and Shunti being acidic in nature.

e) Mess size of the powder

The particle size of Shunti was found to be within limit. While for Ardraka mesh size cannot be calculated as it is in fresh form.

f) Ash value

The total ash value of the Ardraka was 1.04 % w/w and that of Shunti was 4.48 %. w/w the ash value is indicative of the purity of the drug. More presence of inorganic matter will have an effect over the ash value of the drug. It was observed that the ash value of Ardraka and Shunti is within the limits as prescribed by the API

g) Acid - insoluble ash

The acid insoluble ash value of Ardraka was 0.07 % while that of Shunti was 0.71%. Acid insoluble ash is indicative of the mineral contents in the drug.

h) Water - soluble extractive

The water soluble extractive value was 3.79% for Ardraka and for Shunti it was 13.62 % suggesting Shunti to be more soluble in the water when compared with Ardraka which may be because of the more polar components present in the Shunti than that of Ardraka.

i) Alcohol - Soluble extractive

Ardraka had 2.68% and for Shunti it was 6.72% which indicates that alcohol serves as an excellent solvent for Shunti.

Table No 49- Physiochemical/Pharmaceutical analysis

(Protocol followed API Part I)

Sl No	Parameter	Adraka	Shunti	API Standards for Shunti
1.	Foreign matter	0.5%	0.3%	Not more than 1%
2.	Loss on drying, *wlw*	84.40 %	12.00%	not more than 12.0 per cent
3.	Mesh size of the powder	---	50	
4.	Angle of repose	34.6°	39.5 °	
5.	pH (10.0% aqueous solution)	7.74	4.48%	

6.	Ash value, w/w	1.04 %	4.48 %	Not more than 6%
7.	Acid - insoluble ash, w/w	0.07 %	0.71%	Not more than 1.5%
8.	Water - soluble extractive, w/w	3.79%	13.62 %	Not less than 10%
9.	Alcohol - Soluble extractive, wM	2.68%	6.72%	Not less than 3%

7.1.4 Phytochemical Study

Table No 50- Preliminary phytochemical screening

(Protocol followed API Part I)

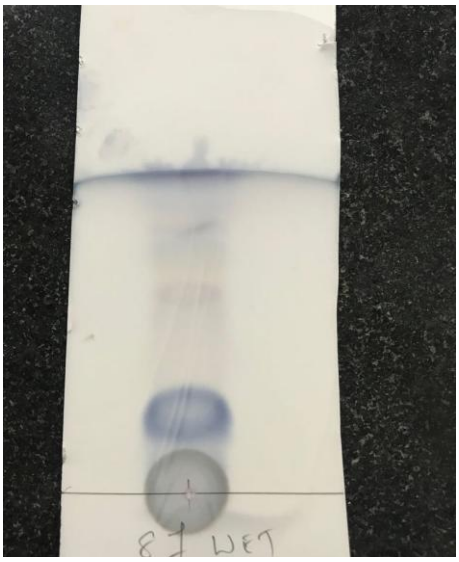
Sl No	Parameter	Adraka	Shunti
1.	Flavonoids	Present	Present
2.	Alkaloids	Absent	Absent
3.	Carbohydrates	Absent	Absent
4.	Amino acids	Present	Present
5.	Triterpenoids steroids	Absent	Absent
6.	Glycosides	Absent	Absent
7.	Saponins	Present	Present

7.1.5 T.L.C (Thin Layer Chromatography)

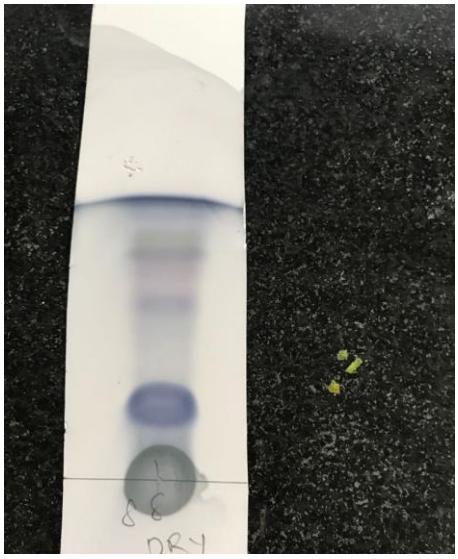
The solvent system used for the T.L.C was N-Hexane: Diethy ether in the ratio of 4: 6.Major spot identified was with the Rf value 0.40 (Brown) for Ardraka and 0.54 (Brown) for Shunti which is near to the Rf value of 0.5 (Gingerol) mentioned in API. Only Gingerol could be clearly identified in T.L.C, and hence higher methods of Fingerprinting was adopted for the further analysis of the active pungent constituents.

Table No 51 -Thin Layer Chromatography results

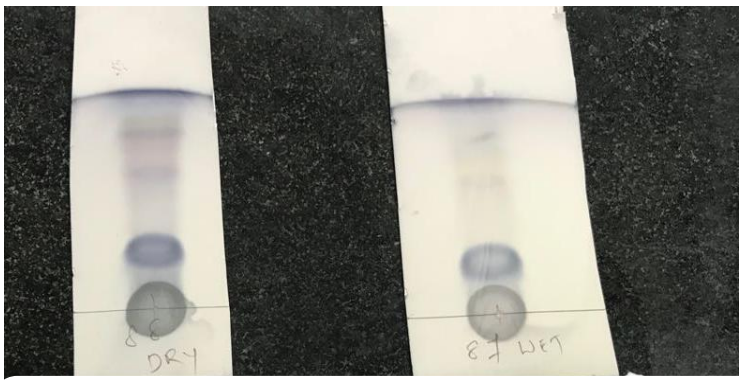
Parameters	Adraka Rf value	Shunti RF value	As per API
Under UV 254 nm major spots	0.60 (grey)	0.60 (grey)	
after derivatization of vanillin-sulphuric acid reagent major spots	0.16 (violet)	0.16 (violet)	
	0.22(violet)	0.22(violet)	
	0.27(violet)	0.27(violet)	
	0.40 (Brown)	0.54 (Brown)	0.5 (Brown) Gingerol
	0.63(violet)	0.63(violet)	
	0.68 (light violet)	0.68 (light violet)	
	0.77(light violet)	0.77(light violet)	



Ardraka



Shunti



Dry Wet

After Derivatization of Vanillin Sulphuric Acid Reagent

7.1.6 HPLC study(High Performance Thin layer Chromatography)

Standard reference component 6-Gingerol was used along with the test drugs Ardraka and Shunti for the quantitative estimation of the active constituents. Four trials were done for the 6-gingerol and the most accurate reading was considered 6-Gingerol%(w/w) 8- Gingerol%(w/w) 6-Shogaol%(w/w) 10- Gingerol%(w/w) was estimated inboth samples with Ardraka showing 0.16, 0.03, 0.003, 0.04 and shunt having 0.37, 0.06, 0.100, 0.08. Total pungent compounds as 6- Gingerol %(w/w) were estimated, indicating that Shunti (0.61) has more pungent components than Ardraka (0.23).

HPLC Analysis

Results of the pure component 6-Gingerol (4 trails) HPLC study

Sample Name : 6-Gingerol

Sample ID :Std

Tray# : 2 Vail# : 16

Injection Volume : 20 uL

Data Filename : Std-0002.lcd

Method Filename : Ginger Stdrp.Met.lcm

Batch Filename : Batch-0001.lcb

Report Filename :ram.lcr(Read only)-42.lcr

Detector:A Ch1 278nm

Table No 52 - 6-Gingerol Peak Table (Trail number 1)

Peak #	Ret. Time	Name	Area	Area%
1.	5.583		20753	0.777
2.	5.819	6-Gingerol	2651623	99.223
Total			2672376	100.000

Table No 53- 6-Gingerol Peak Table (Trail number 2)

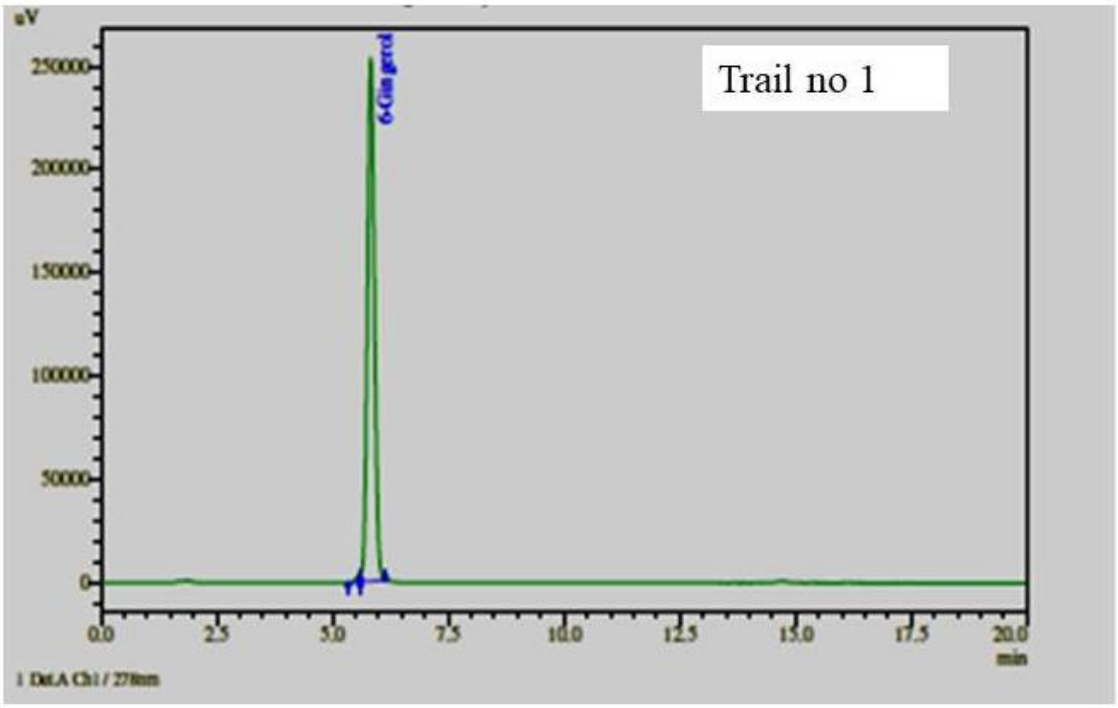
Peak #	Ret. Time	Name	Area	Area%
1.	5.600		25434	0.950
2.	5.817	6-Gingerol	2650509	99.050
Total			2675942	100.000

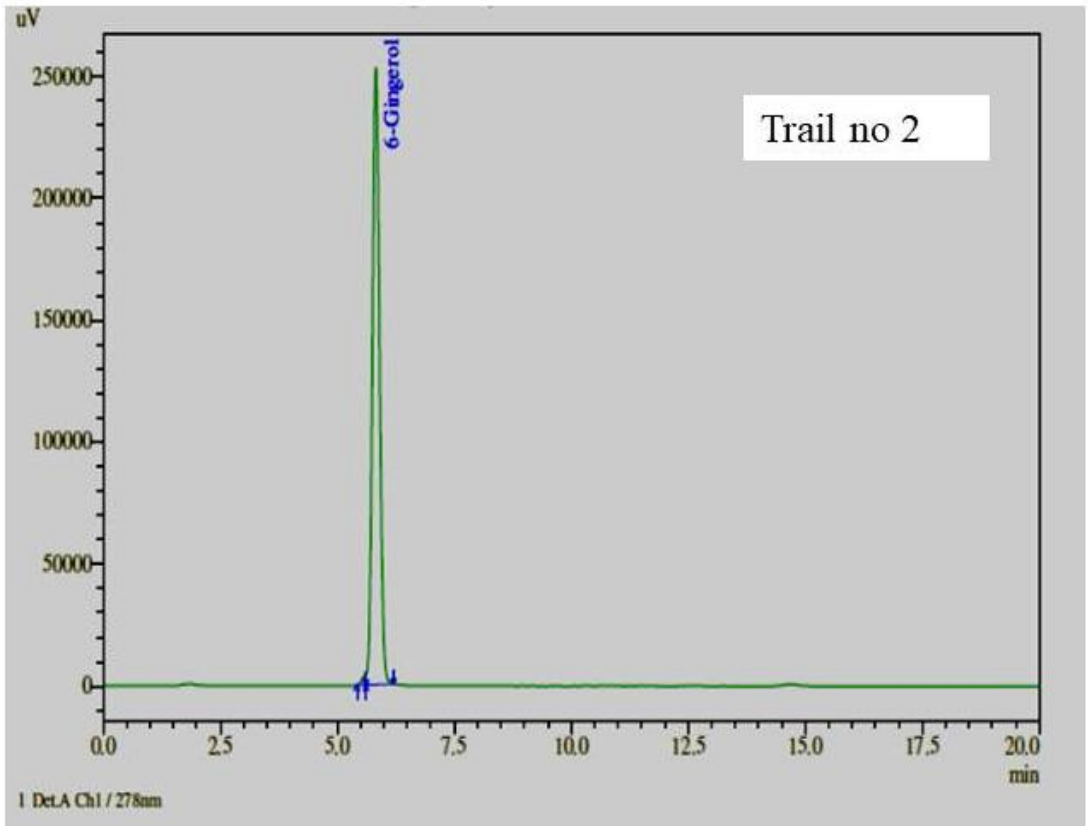
Table No 54 - 6-Gingerol Peak Table (Trail number 3)

Peak #	Ret. Time	Name	Area	Area%
1.	5.583		21816	0.815
2.	5.818	6-Gingerol	2655342	99.185
Total			2677158	100.000

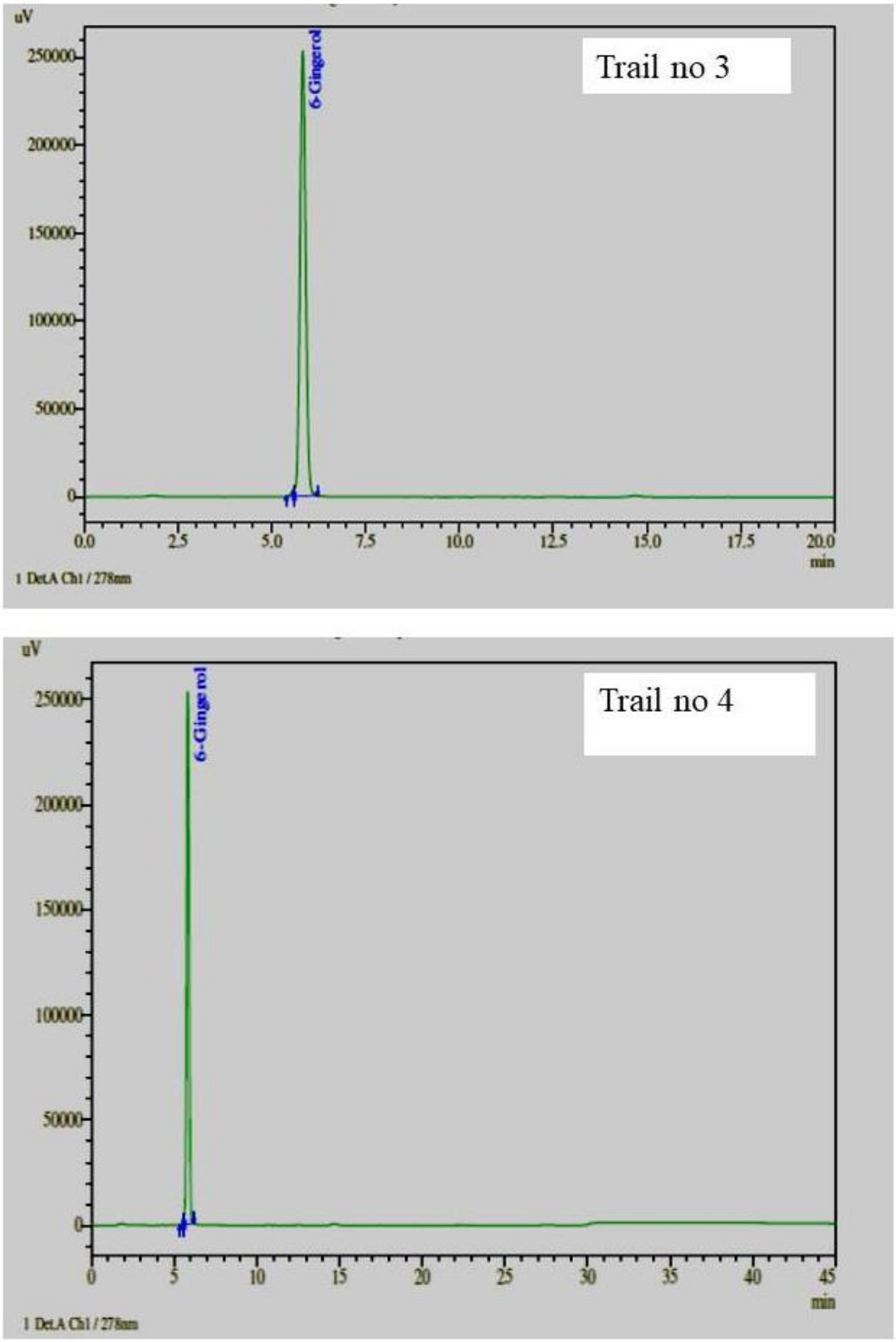
Table No 55- 6-Gingerol Peak Table (Trail number 4)

Peak #	Ret. Time	Name	Area	Area%
1.	5.600		26684	0.994
2.	5.817	6-Gingerol	2656510	99.006
Total			2683194	100.000





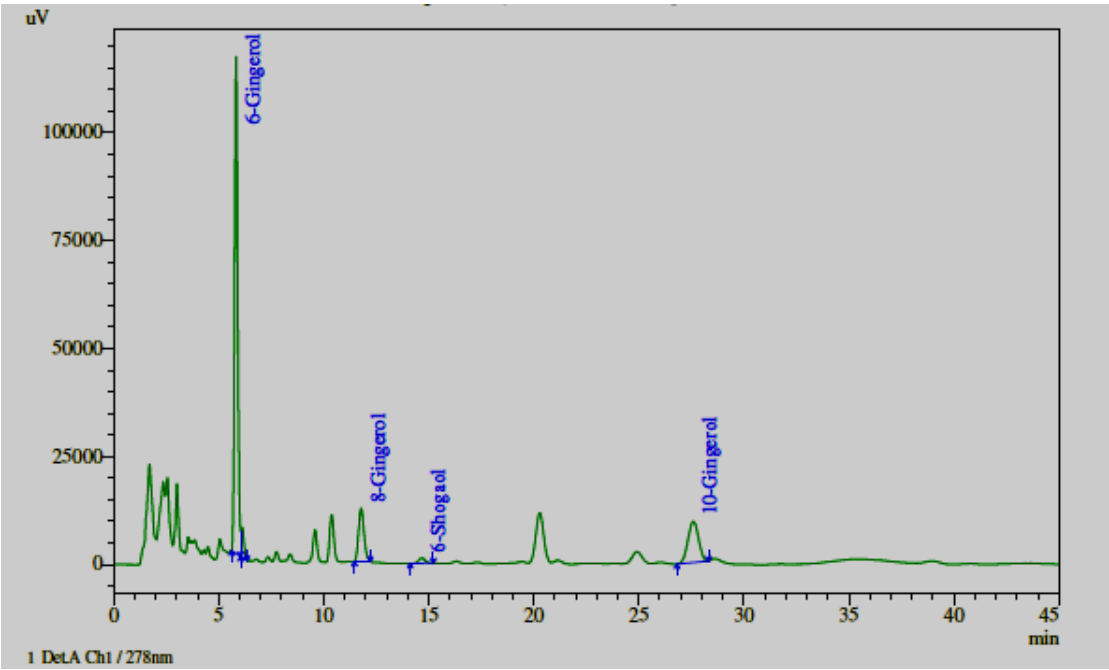
Graph No 1- Pure component 6-Gingerol -HPLC Analysis (Trail 1&2)



Graph No2 - Pure component 6-Gingerol - HPLC Analysis (Trail 3&4)

Results of the Ardraka (Wet *Zingiber officinale* Roscoe) HPLC study

Sample Name : Wet Ginger
Sample ID : 1805037E
Trial number:01
Tray# : 2
Vail# : 18
Injection Volume : 20 uL



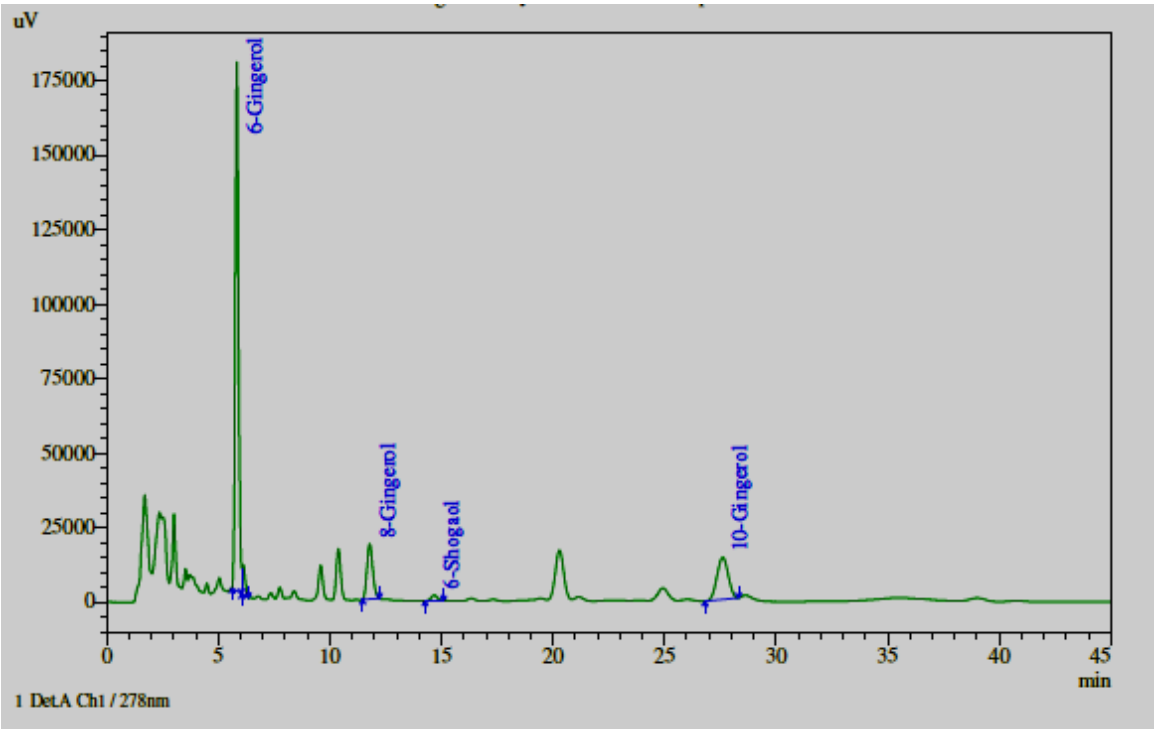
Graph No 3 - Ardraka (Wet *Zingiber officinale* Roscoe) - HPLC Analysis (Trail 1)

Table No 56: Showing HPLC Analysis of Ardraka (Wet *Zingiber officinale* Roscoe)

Trail number – 1 data, Detector A Ch1 278nm

Peak #	Ret. Time	Name	Area	Area%
1.	5.818	6-Gingerol	1200579	65.124
2.	6.113		64022	3.473
3.	11.771	8-Gingerol	219423	11.919
4.	14.663	6- Shogaol	26108	1.416
5.	27.581	10- Gingerol	333086	18.068
Total			1843518	100.000

Sample Name: Wet Ginger
Sample ID: 1805037E
Trial number: 02
Tray#: 2
Vail#: 19
Injection Volume: 20 uL



Graph No 4 - Ardraka (Wet *Zingiber officinale* Roscoe) - HPLC Analysis (Trail 2)

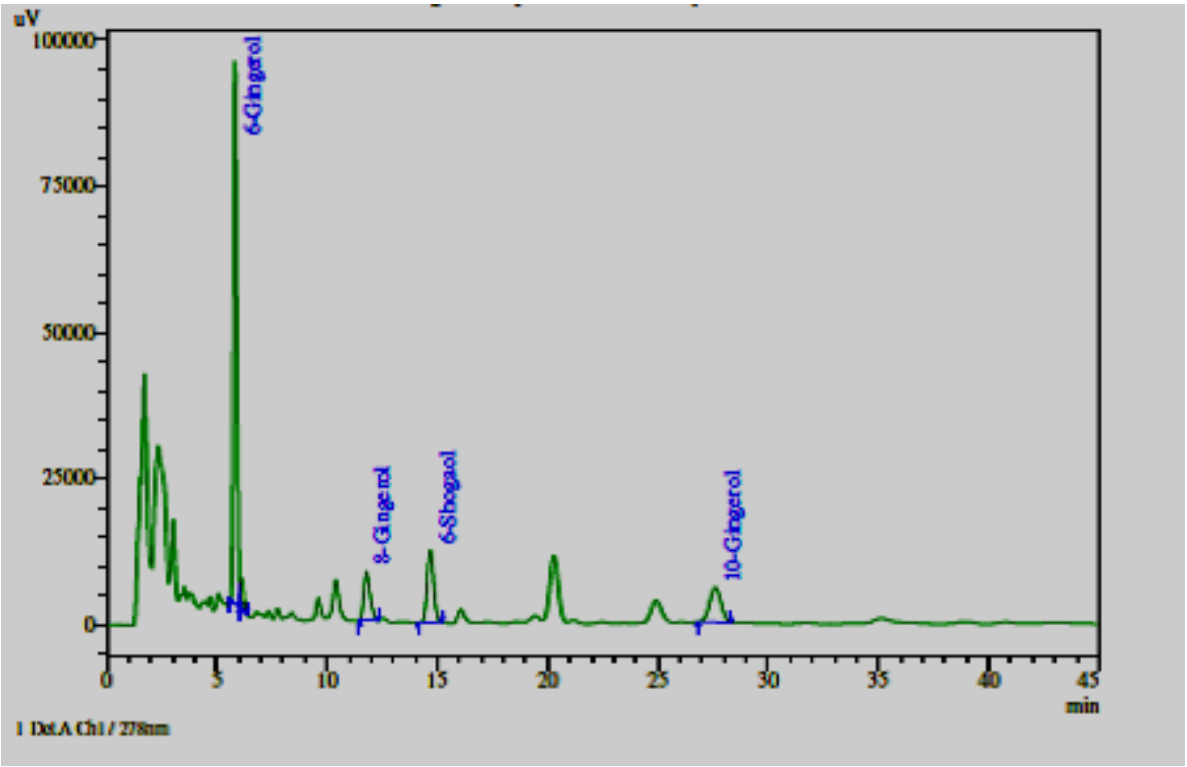
Table No57- Showing HPLC Analysis of Ardraka (Wet *Zingiber officinale* Roscoe)

Trail number – 2 data, Detector A Ch1 278nm

Peak #	Ret. Time	Name	Area	Area%
1.	5.818	6-Gingerol	1841958	65.767
2.	6.114		92839	3.315
3.	11.776	8-Gingerol	332931	11.887
4.	14.668	6- Shogaol	37799	1.350
5.	27.595	10- Gingerol	495210	17.681
Total			2800737	100.000

Results of the Shunti (Dry *Zingiber officinale* Roscoe) HPLC study

Sample Name: Dry Ginger
Sample ID: 1805038E
Trial number: 01
Tray#: 2
Vail#: 20
Injection Volume: 20 Ul



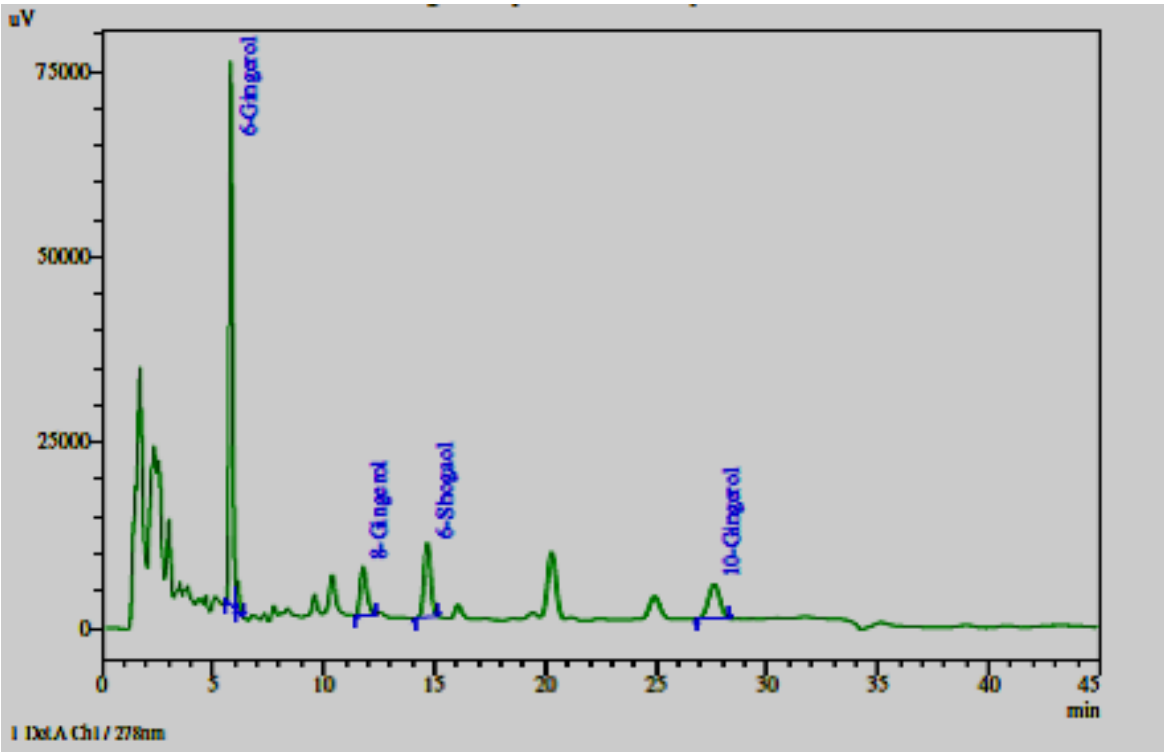
Graph No 5- *Shunti* (Dry *Zingiber officinale* Roscoe) - HPLC Analysis (Trail 1)

Table No58- Showing HPLC Analysis of *Shunti* (Dry *Zingiber officinale* Roscoe)

Trail number – 1 data, Detector A Ch1 278nm

Peak #	Ret. Time	Name	Area	Area%
1.	5.819	6-Gingerol	955943	58.479
2.	6.116		48377	2.959
3.	11.778	8-Gingerol	168159	10.287
4.	14.676	6- Shogaol	250101	15.300
5.	27.593	10- Gingerol	212084	12.974
Total			1634664	100.000

Sample Name: Dry Ginger
Sample ID: 1805038E
Trial number: 02
Tray#: 2
Vail#: 21
Injection Volume: 20 uL



Graph No 6 - *Shunti* (Dry *Zingiber officinale* Roscoe) - HPLC Analysis (Trail 2)

Table No 59- Showing HPLC Analysis of *Shunti* (Dry *Zingiber officinale* Roscoe)

Trail number – 1 data, Detector A Ch1 278nm

Peak #	Ret. Time	Name	Area	Area%
1.	5.813	6-Gingerol	751900	58.471
2.	6.109		36721	2.856
3.	11.772	8-Gingerol	130157	10.122
4.	14.672	6- Shogaol	202345	15.735
5.	27.600	10- Gingerol	164816	12.817
Total			1285939	100.000

Table No 60- Comparative Analytical results of *Ardraka* and *Shunti* HPLC

Sl No	Test	Results		Protocol
		Ardraka	**Shunti**	
1.	Description	Brown wet rhizome	Brown dry rhizome	By visual
2.	**Assay %(w/w)**			
i.	6-Gingerol%(w/w)	0.16	0.37	By HPLC
ii.	8- Gingerol%(w/w)	0.03	0.06	
iii.	6-Shogaol%(w/w)	0.003	0.100	
iv.	10- Gingerol%(w/w)	0.04	0.08	
v.	Total pungent compounds as 6- Gingerol%(w/w)	0.23	0.61	

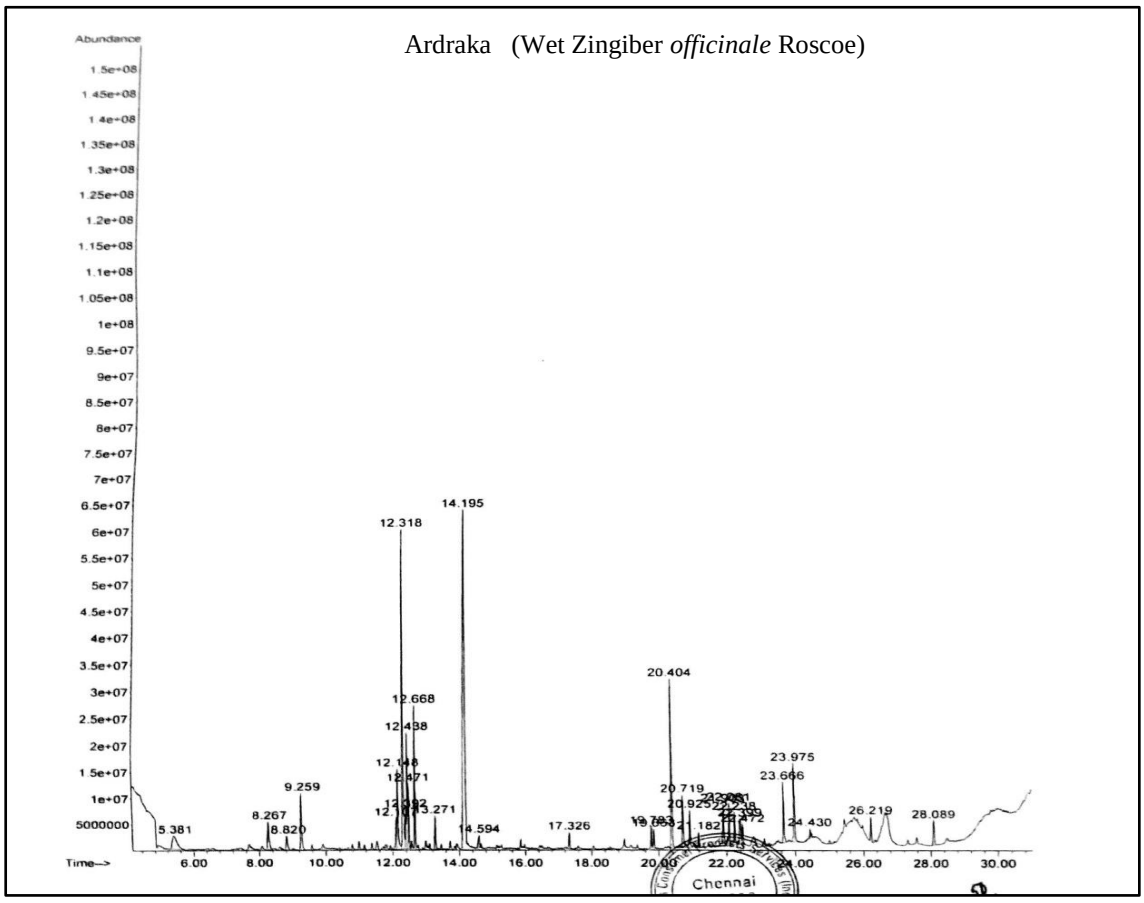
7.1.7 Gas Chromatography with Mass Spectrophotometric (GC-MS Analysis)

Quantity: Ardraka 160 gm

Shunti 140 gm, (Method of testing GC MS 5975 C Agilent)

Table No 61 – GCMS study of Ardraka and Shunti

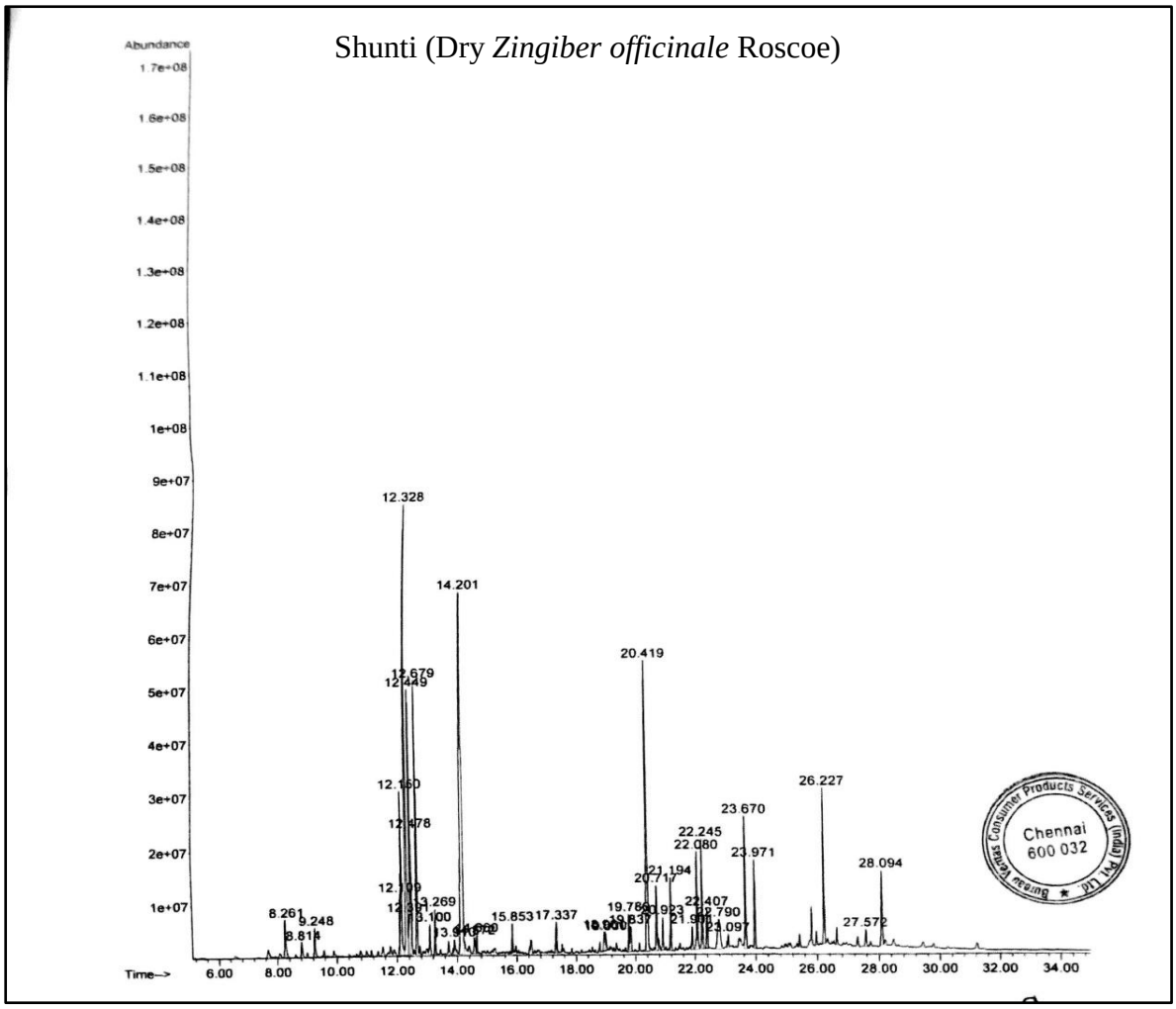
Sl No	Test Parameter	Units of measurements	Results	
			Ardraka	**Shunti**
1.	Gingerol	%	26.72	19.21



Graph No 7- GCMS study of Ardraka (Wet *Zingiber officinale* Roscoe)

Table No 62– Library Id of Ardraka (Wet *Zingiber officinale* Roscoe)

PK	RT	AREA PCT	AREA	LIBRARY/ID
1.	5.3795	2.8976	260487637	Beta-phellandren
2.	8.2693	1.7971	161555540	Decanal
3.	8.819	0.8739	78562281	2,6-octadienal,3,7-dimethyl(Z)
4.	9.2573	3.0257	271998967	Citral
5.	12.1099	1.4076	126540073	Beta-curcumene
6.	12.147	3.6038	323969918	Benzene,1-(1,5-dimethyl-1-hexenyn)-4-methyl
7.	12.3179	13.4377	1208006653	1,3-cyclohexadiene,5-(1,5-dimethyl4-hexenyl)-methyl-,[s-(R*,S*)]-
8.	12.3922	1.6002	143850629	Naphthalene,1,2,4a,5,6,8a-hexahydro,7-dimethyl-1-(1-methylethyl)
9.	12.4367	4.203	377838681	Alpha-famesene
10.	12.4739	2.1302	191496072	Beta-bisabolene
11.	12.667	5.1776	452218	Cyclohexene,3-(1,5-dimethyl-4-hexenyl)-6-methylene-,[s-(R*,S*)]-
12.	13.2687	1.3414	120583494	Pyrazine,2methoxy-3-(1-methylethyle)
13.	14.1973	26.7253	2402517271	Butan-2-one,4-(3-hydroxyl-2-methoxyphenyl)-**GINGEROL**
14.	14.591	0.6833	61427713	2-methyl-2-adamantanol
15.	17.3248	0.6926	62266555	n-hexadecanoic acid
16.	19.7837	0.8632	77599098	6-amino-2,4-dimethylphenol
17.	19.8654	0.7747	69646431	3-decanone,1-(4-hydroxy-3-methoxyphenyl)
18.	20.4077	7.5872	682063296	3-pyridineacetic acid
19.	20.7197	2.7297	244775974	N,N,N-trimethyl-N-[4-acetoxyphenyl]ammonium hydride
20.	20.9277	1.6228	145884930	9-octadecanamide (Z)
21.	21.1802	0.5212	46826066	2-butanole,4-(4-hydroxy-3-methoxyphenyl)
22.	21.9082	2.1293	191417182	1,4-butanediol,2,3-bis[(4-hydroxy-3methoxyphenyl)methyl],[R-(R*,R*)]
23.	22.0791	1.589	142847594	6-(3,5dimethyl-furan-2-yl)-6methyl-hept-3-el-2-one
24.	22.2351	1.3007	116926665	Butan-2-one,4-(3hydroxy-2-methoxyphenyl)
25.	22.3985	1.6652	149697065	5-(4-hydroxy-3methoxybenzyl)-1-4-methoxyphenol),4,6(1H,3H,5H)-pyrimidinetrione
26.	22.4728	0.8863	79678557	1H-indene-2butyle-5-hexyloctahydro
27.	23.6688	2.3188	208452740	Benzene[bis(methyl rhio)methyl]
28.	23.9734	3.7741	339277502	Propan-2-one,1-(4-isopropoxy-3-methoxyphenyl)
29.	24.4265	0.1402	12602117	Bicycle(4,1,0)heptanes-7-carbohydrazide,N2-(3-allyl-2hydroxybenzydeno)
30.	26.2169	1.0425	93720767	Ruthenium,tricarbonyl(3,4-eta)-4,5-dithyl-2,2-dimethyl-3-(1-methylethenyl)-1-selena-2-sita-5-borocyclopenta
31.	28.0889	1.4648	131677553	Gamma –sitosterol



Graph No 8- GCMS study of Shunti (Dry *Zingiber officinale* Roscoe)

Table No 63 – Library Id of Shunti (Dry *Zingiber officinale* Roscoe)

PK	RT	AREA PCT	AREA	LIBRARY/ID
1.	8.2619	1.3606	212510770	Decanal
2.	8.8116	0.5071	79203753	2,6-Octadienal,3,7-dimethyl-,(Z)-
3.	9.2499	0.8792	137323973	2,6-Octadienal,3,7-dimethyl-,(E)-
4.	12.1099	1.4795	231083559	1H-Benzocycloheptene,2,4a,5,6,7,8-hexahydro-3,5,5,9-tetramethyl-(R)-
5.	12.147	4.2856	669372180	Benzene,1-(1,5–dimethyl-4-hexenyl)-4-methyl-
6.	12.3253	13.4149	2095274858	1H-3a,7-Methnoazulene,2,3,4,7,8,8a-hexahydro-3,6,8,8-tetramethyl-,[3R 3.alpha,3a.beta,7beta,8a,alpha)]
7.	12.3922	0.9875	154242263	Naphthalene,1,2,4a,5,6,8a-hexahydro-4,7-dimethyl-l-(l-methylethyl)-
8.	12.4516	5.9557	930220396	.alpha, -Famesene
9.	12.4739	2.0646	322465750	.beta-Bisabolene

10.	12.6819	6.2161	970882923	Cyclohexene,3-(1,5-dimethyl-4-hexenyl)-6-methylene-,[s-(R*,S*)]-
11.	13.0979	0.7504	117205141	1,6,10-Dodecatrien-3-ol,3,7,11-trimethyl-[S-(Z)]
12.	13.2688	1.1018	172087096	Pyrazine,2-methoxy-3-(1-methylethyl)-
13.	13.9076	0.489	76379509	7-epi-cis-sesquisabinene hydrate
14.	14.2048	19.2132	3000898666	Butan-2-one,4-(hydroxyl-2-methoxyphenyl)-**GINGEROL**
15.	14.5688	0.6097	95221508	Di-epi-alpha-cedrene
16.	14.6579	0.3526	55065077	1Formyl-2,2-dimethyl-3-trans-(3-methyl-but-2-enyl)-6-methylidene-cyclohexane
17.	15.8539	0.5761	89977837	2-Cyclohexene-1-carboxaldehyde,2,6-dimethyl-6-(4-methyl-3-pentenyl)
18.	17.3396	0.9958	155527475	n-Hexadecanoic acid
19.	18.39591	0.6843	106887622	9,12,Octadienoic acid (Z,Z)-
20.	19.0037	0.5009	78228518	9,17-Octadecadienal,(Z)-
21.	19.7762	0.8446	131912701	Homovanillyl alcohol
22.	19.8357	1.0024	156562660	N-(3,5-dimethyl –furan-2-yl)-6-methyl-hept-3-en-2-one
23.	20.4225	9.4741	1479754450	6-(3,5-Dimethyl-furan-22yl)-6-methlyhept-3en-2-one
24.	20.7197	1.8742	292737913	N,N,N-Trimethyl-N-[4-acetoxyphenyl]ammonium iodide
25.	20.9202	0.7884	123139349	9-octadecenamid,(Z)
26.	21.1951	1.8068	282198458	2-butanone,4(4-hydroxy-3-methoxyphenyl)
27.	21.9008	0.6926	108176230	1,4-butanediol,2,3-bis[(4-hydroxy-3methoxyphenyl)methyl],[R-(R*,R*)]
28.	22.0791	2.4725	386174229	6-(3,5-dimethyl-furan-2-yl)6-methyl-hept-3-en-2-one
29.	22.2425	2.5282	394883551	Bis(2-methylphenyletio-methane)
30.	22.406	1.3148	205356516	Benzene acetic acid,3,4-dimethoxy,methylester
31.	22.7922	2.3579	368271689	1-(2,2,3,5,6-penta methyl cyclohex-4-enyl)-9-(3,3,4-trimethylcyclohex-1-enyl)3,6-dimethyl-6-ethenyl-dec-4-ene
32.	23.0968	0.3568	55722890	6-amino-2,4-dimethylphenol
33.	23.6688	3.1617	493818982	Propan-2-one,1-(4-isopropoxy-3-methoxyphenyl)
34.	23.9734	2.314	361415433	Propan-2-one,1-(4-isopropoxy-3-methoxyphenyl)
35.	26.2243	3.707	578990008	6-(3,5-dimethyl-furan-2-yl)-6-methyl-hept-3en-2-one
36.	27.5689	0.5394	84255786	Stigmasterol
37.	28.0963	2.3403	365526839	Gamma-sitosterol

7.2 Experimental study- Deepana activity

The experimental study to asses Deepana activity was carried out for 15 days and the assessment criteria considered are given below. The absolute and the relative values were calculated for the given assessment criteria and the readings were noted down and statistical analysis was done with one way ANOVA followed by Dunnet's multiple t tests and Post hoc test.

The following Parameters will be used for assessement of Deepana & Pachana action:

1. Food consumption
2. Water consumption
3. Fecal output
4. Urine output
5. Food conversion ratio = Food intake / Fecal output
6. In gastric Juice-Volume, total& free acids, peptic activity, total Protein and total Carbohydrate ratio (Tp:TC) was considered

The observation s are presented along with the results under each assessment criteria

Table No 64 – Observed Values and Results of Experimental study-Deepana Activity

Food intake - Absolute value						
First 5 days				6^{th} to 15^{th} day		
No	Control	Ardraka group	Shunti group	Control	Ardraka group	Shunti group
1	17.384	9.576	17.312	16.07	7.936	17.116
2	18.456	12.666	17.312	16.705	9.036	17.116
3	17.988	13.118	16.13	19.061	12.72	13.5
4	19.762	11.212	16.13	17.206	8.219	13.5
5	19.146	9.164	17.58	13.895	8.318	14.4
6	15.724	9.41	17.58	14.515	5.263	14.4

Food intake - Relative value						
First 5 days				6^{th} to 15^{th} day		
No	Control	Ardraka group	Shunti group	Control	Ardraka group	Shunti group
1	8.47	5.516	8.338	7.125	4.698	7.489
2	10.238	8.322	9.912	8.115	5.99	9.437
3	10.772	6.368	6.734	8.804	6.192	5.467
4	10.098	6.116	8.154	7.666	4.697	6.76
5	11.192	6.222	8.08	7.103	5.681	6.32
6	9.474	6.6	8.068	7.604	4.069	6.18

Water intake - Absolute value						
	First 5 days			6^{th} to 15^{th} day		
No	Control	Ardraka group	Shunti group	Control	Ardraka group	Shunti group
1	16	28	24	19.5	28	21.5
2	24	20	24	22.5	22	21.5
3	20	36	16	24	29	18.25
4	22	22	16	22.5	27.5	18.25
5	22	14	23	18	19	20.75
6	20	13	23	20.5	17.5	20.75

Water intake - Relative value						
	First 5 days			6^{th} to 15^{th} day		
No	Control	Ardraka group	Shunti group	Control	Ardraka group	Shunti group
1	7.916	10.15	11.57	8.777	16.657	9.321
2	13.374	13.178	13.734	10.915	14.742	11.768
3	12.066	17.592	6.698	10.998	14.214	7.401
4	11.242	11.992	8.306	9.995	15.691	9.154
5	12.88	9.458	10.604	9.129	13.069	9.198
6	12.108	9.098	10.462	10.826	13.501	8.898

Urine output - Absolute value						
	First 5 days			6^{th} to 15^{th} day		
No	Control	Ardraka group	Shunti group	Control	Ardraka group	Shunti group
1	2.64	8.7	2	1.52	7.95	1.225
2	4.56	5.2	2	1.63	3.8	1.225
3	5.68	9.4	2	2.45	4.55	1.35
4	1.74	4.6	2	1.11	3.25	1.35
5	1.96	5	6.3	1.89	3.95	2.45
6	4.92	3.2	6.3	1.92	4.15	2.45

Urine output - Relative value						
	First 5 days			6^{th} to 15^{th} day		
No	Control	Ardraka group	Shunti group	Control	Ardraka group	Shunti group
1	1.314	0.96	5.024	0.671	4.751	0.44
2	2.59	1.138	4.636	0.805	2.607	0.56
3	3.528	0.832	4.56	1.136	2.236	1.418
4	0.928	1.036	2.498	0.502	1.885	0.664
5	1.17	2.912	3.392	0.958	2.74	1.141
6	3.044	2.908	2.238	1.017	3.26	1.055

Fecal wet - Absolute value						
	First 5 days			6^{th} to 15^{th} day		
No	Control	Ardraka group	Shunti group	Control	Ardraka group	Shunti group
1	8.148	4.774	11.966	8.66	2.901	11.59
2	8.948	4.732	11.966	7.75	5.012	11.59
3	8.666	8.344	8.906	9.256	2.785	8.954
4	10.584	4.354	8.906	7.693	2.951	8.954
5	10.14	5.03	10.518	7.316	3.537	10.458
6	7.674	3.988	10.518	7.759	1.929	10.458

Fecal wet - Relative value						
	First 5 days			6^{th} to 15^{th} day		
No	Control	Ardraka group	Shunti group	Control	Ardraka group	Shunti group
1	4.2	2.734	5.75	3.966	1.712	5.013
2	5.216	3.114	6.856	3.872	3.314	6.389
3	5.088	4.036	3.73	4.207	1.363	3.63
4	5.54	2.386	4.636	3.491	1.684	4.469
5	6.118	3.42	4.832	3.812	2.417	4.627
6	4.77	2.786	4.824	4.129	1.495	4.482

Fecal Dry -Absolute value						
	First 5 days			6^{th} to 15^{th} day		
No	Control	Ardraka group	Shunti group	Control	Ardraka group	Shunti group
1	4.132	2.352	5.3	4.293	1.539	5.043
2	4.254	2.642	5.3	4.009	2.311	5.043
3	3.956	3.678	4.002	4.621	1.443	3.874
4	5.136	2.428	4.002	3.989	1.682	3.874
5	4.39	2.888	4.698	3.771	1.77	4.916
6	3.652	2.148	4.698	3.594	1.008	4.916

Fecal Dry -Relative value						
	First 5 days			6^{th} to 15^{th} day		
No	Control	Ardraka group	Shunti group	Control	Ardraka group	Shunti group
1	2.112	1.346	2.544	1.956	0.906	2.184
2	2.466	1.728	3.03	1.979	1.525	2.756
3	2.332	1.776	1.672	2.161	0.705	1.565
4	2.698	1.334	2.078	1.805	0.957	1.938
5	2.634	1.964	2.156	1.957	1.207	2.166
6	2.272	1.51	2.08	1.916	0.818	2.055

Fecal Water -Absolute value						
	First 5 days			6^{th} to 15^{th} day		
No	Control	Ardraka group	Shunti group	Control	Ardraka group	Shunti group
1	2.088	2.322	3.204	2.01	0.806	2.502
2	2.75	2.078	3.82	1.891	1.789	3.245
3	2.756	2.412	2.042	2.102	0.658	1.646
4	2.842	1.188	2.554	1.686	0.727	2.159
5	3.484	1.852	2.674	1.853	1.21	2.012
6	2.498	1.252	2.67	2.213	0.716	1.946

Fecal Water -Relative value						
	First 5 days			6^{th} to 15^{th} day		
No	Control	Ardraka group	Shunti group	Control	Ardraka group	Shunti group
1	2.112	1.346	2.544	1.956	0.906	2.184
2	2.466	1.728	3.03	1.979	1.525	2.756
3	2.332	1.776	1.672	2.161	0.705	1.565
4	2.698	1.334	2.078	1.805	0.957	1.938
5	2.634	1.964	2.156	1.957	1.207	2.166
6	2.272	1.51	2.08	1.916	0.818	2.055

Food conversion ratio (FCR)						
	First 5 days			6^{th} to 15^{th} day		
No	Control	Ardraka group	Shunti group	Control	Ardraka group	Shunti group
1	4.126	4.758	3.304	3.734	7.608	3.048
2	4.258	5.726	3.304	4.121	4.415	3.046
3	4.656	8.638	4.636	4.115	11.316	3.197
4	3.874	4.644	4.636	4.303	5.196	3.192
5	3.942	3.352	4.444	3.672	4.88	2.649
6	4.222	4.212	4.444	5.388	7.393	2.641

% body weight change						
	First 5 days			6^{th} to 15^{th} day		
No	Control	Ardraka group	Shunti group	Control	Ardraka group	Shunti group
1	5.357	-5.55	15.38	10.24	-6.47	-3.11
2	19.473	4.72	2.28	22.12	-11.61	1.67
3	23.232	-1.47	7.25	25.31	-4.5	-3.22
4	12.558	-4.25	12.22	16.58	-7.77	2.47
5	11.578	0	4.44	18.42	-8.14	-8.07
6	13.114	-4.10	5.33	19.56	-13.57	1.31

Stomach weight			
No	Control	Ardraka group	Shunti group
1	1.86	1.482	1.560
2	1.75	1.621	1.680
3	1.92	1.643	1.510
4	1.54	1.562	1.901
5	1.68	1.681	1.840
6	1.59	1.592	1.508

Gastric juice volume (mI)			
No	Control	Ardraka group	Shunti group
1	6.2	6	5.2
2	5.3	6.5	6.8
3	6.1	10	8.8
4	9.2	5.1	11
5	9.4	7	8.1
6	8.2	2	13.2

pH Value			
No	Control	Ardraka group	Shunti group
1	2	2	2
2	4	4	2
3	2	2	2
4	2	4	2
5	2	2	2
6	2	2	2

Total acid			
No	Control	Ardraka group	Shunti group
1	4.0	3.4	4
2	3.2	3.2	4.6
3	3.4	3.2	4.6
4	3.6	3.8	4.2
5	3.4	4.0	4.8
6	3.4	3.0	3.6

Free acid			
No	Control	Ardraka group	Shunti group
1	1.8	1.9	2
2	1.8	0	2.4
3	2.1	2.1	2.2
4	2.4	2.1	2.6
5	2.1	2.7	2.7
6	2	2	2.4

Carbohydrate Estimation			
No	Control	Ardraka group	Shunti group
1	1080	480	430
2	428	440	1070
3	400	380	1460
4	460	460	280
5	1242	400	431
6	421	1080	370

Total protein			
No	Control	Ardraka group	Shunti group
1	3600	4280	880
2	600	5000	4020
3	560	2020	2280
4	640	6360	800
5	2120	3800	840
6	3900	4000	880

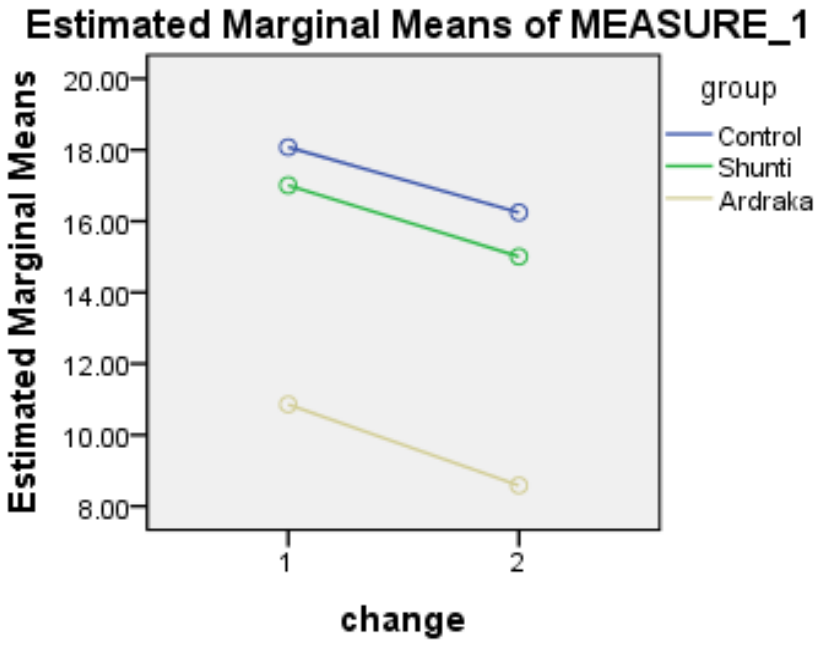
D-Peptic activity			
No	Control	Ardraka group	Shunti group
1	87.3	90.0	14.5
2	123.6	98.7	7.3
3	101.8	70.1	80
4	124.2	257.0	65.5
5	89.2	141.0	94.5
6	96.3	448.0	14.5

STATISTICAL ANALYSIS RESULTS

Table No 65- Statistical analysis results of Food intake absolute

Group	Phase				Change
	Preliminary		Therapeutic		
	Day 0 to 5		Day 6-15		
	Mean	S.D	Mean	S.D	
Control	18.0767	1.42481	16.2420	1.87675	1. 83
Shunti	17.0073	.69007	15.0053	1.68373	2.00
Ardraka	10.8577	1.73848	8.5820	2.40681	2.28
Total	15.3139	3.51296	13.2764	3.93833	2.04
Test statistics	F (change)= 25.928; p=.001				
	F (change x Groups) = 0.103; p=.903				

A significant decrease in the mean food intake absolute values irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of 25.928 was found to be significant at .001 levels. From the mean values it is clear that there was a decrease of 2.04 grams (preliminary 15.3139 g; therapeutic 13.2764g) from preliminary to therapeutic phase, which is highly significant. However, when group-wise comparisons made, a non-significant difference was observed (F=.103; p=.903), indicating a similarity in the decrease of food intake in all the three selected groups. The mean decrease in food intake for control, Shunti and Ardraka groups were 1.83g, 2.00 g, and 2.28 g respectively, which were statistically same.



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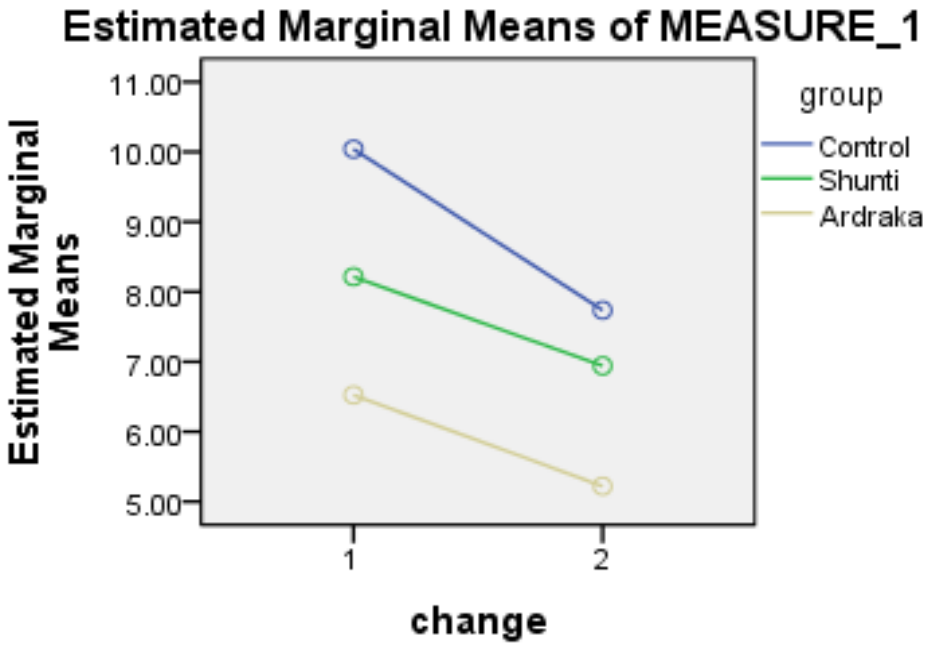
Graph No 9 – Estimated marginal means of Food intake absolute

Table No 66- Statistical analysis results of Food intake relative

Group	Phase				Change
	Preliminary		Therapeutic		
	Day 0 to 5		Day 6-15		
	Mean	S.D	Mean	S.D	
Control	10.0407	.96858	7.7362	.64507	2.34
Shunti	8.2143	1.01310	6.9422	1.39288	1.27
Ardraka	6.5240	.95254	5.2212	.85100	1.3
Total	8.2597	1.74016	6.6332	1.43971	1.62
Test statistics	F (change)= 67.582; p=.001				
	F (change x Groups) = 2.938; p=.084				

A significant decrease in the relative food intake values irrespective of the groups observed from preliminary phase to therapeutic phase as the observed F value of 67.582 was found to be significant at .001 levels. From the mean values it is clear that there was a decrease of 1.62 grams (preliminary 8.2597 g; therapeutic 6.6332 g) from preliminary to therapeutic phase, which is highly significant. However, when group-wise comparisons made, a non-significant difference was observed (F= 2.938; p=.084), indicating a similarity in the decrease of food intake in all the three selected groups. The mean decrease in food intake for control, Shunti and Ardraka groups were 2.34g, 1.27g, and 1.3g respectively, which were statistically same.

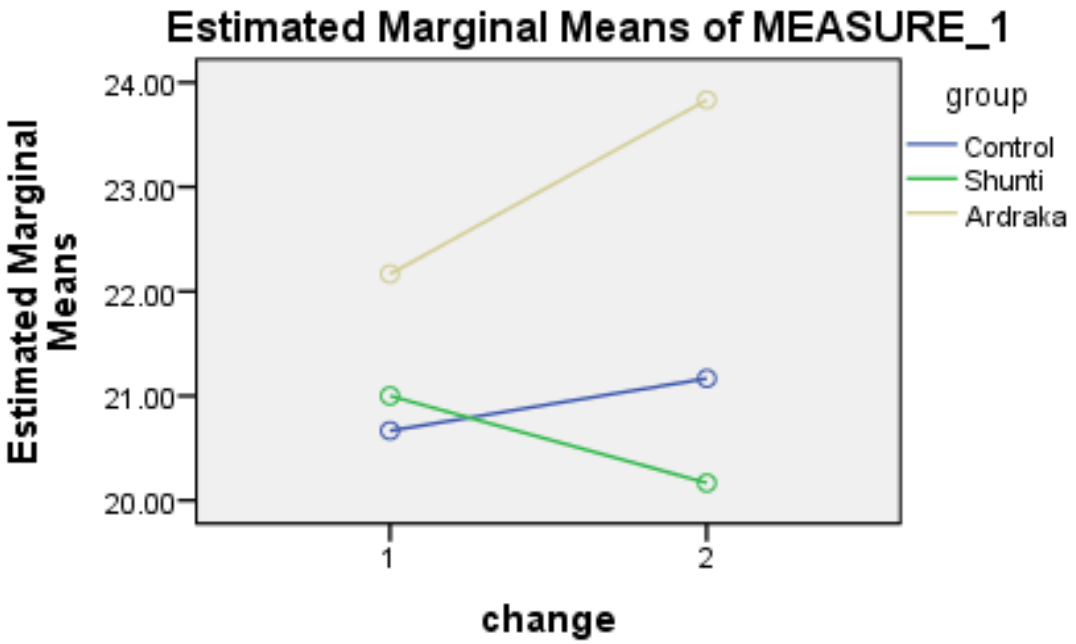


Graph No 10 – Estimated marginal means of Food intake relative

Table No 67- Statistical analysis results of Water intake absolute value

Group	Phase				Change
	Preliminary		Therapeutic		
	Day 0 to 5		Day 6-15		
	Mean	S.D	Mean	S.D	
Control	20.6667	2.73252	21.1667	2.22860	-0.506
Shunti	21.0000	3.89872	20.1667	1.52206	0.834
Ardraka	22.1667	8.72735	23.8333	4.98665	-1.66
Total	21.2778	5.43199	21.7222	3.46292	-0.45
Test statistics	F (change)= .287; p=0.600				
	F (change x Groups) =.758 ; p=0.486				

A non-significant change seen in the water intake absolute values irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of .287was found to be non-significant at 0.600 level. From the mean values it is clear that there was a mild increase of 0.45grams (preliminary 21.2778g; therapeutic 21.7222 g) from preliminary to therapeutic phase, which is not significant. Group-wise comparisons made, also shown non-significant difference was observed (F= =.758; p=0.486), indicating a similarity in the water intake absolute values in control and Ardraka groups. However a mild decrease was noted in Shunti group (0.834) but was very small to bring about statistically significant change.

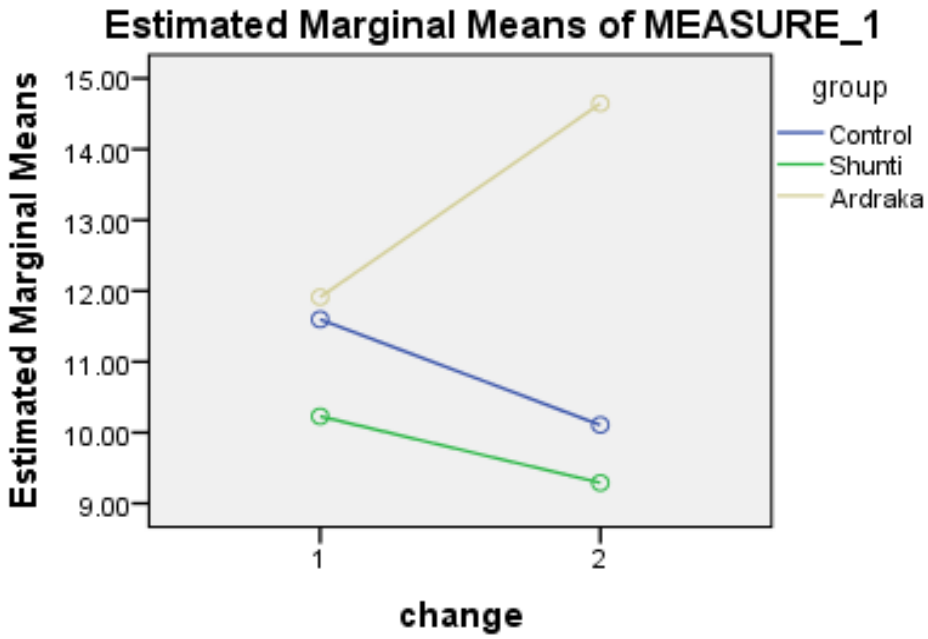


Graph No 11 – Estimated marginal means of Water intake absolute value

Table No 68- Statistical analysis results of Water intake relative value

Group	Phase				Change
	Preliminary		Therapeutic		
	Day 0 to 5		Day 6-15		
	Mean	S.D	Mean	S.D	
Control	11.5977	1.94734	10.1067	.96970	1.491
Shunti	10.2290	2.46755	9.2900	1.40644	0.939
Ardraka	11.9113	3.19114	14.6457	1.35129	-2.7344
Total	11.2460	2.54287	11.3474	2.69670	-0.1014
Test statistics	F (change)= .035 ; p=.853				
	F (change x Groups) = 6.042 ; p= .012				

A significant decrease in the relative water intake absolute values except in Ardraka group was observed from preliminary phase to therapeutic phase as the observed F value of .035 was found to be insignificant at p=.853 level. From the mean values it is clear that there was a increase of 0.1014 ml (preliminary 11.2460 ml; therapeutic 11.3474 ml) from preliminary to therapeutic phase, which is not significant. However, when group-wise comparisons made, a significant difference was observed (F= 6.042 ; p=.012), indicating a slight increase in relative water intake in Ardraka group as compared to other two groups. The mean decrease in relative water intake for control, Shunti and control groups were 1.491 and 0.939ml respectively while Ardraka group showed mean increase in relative water intake. All the values were statistically significant (p= .012).

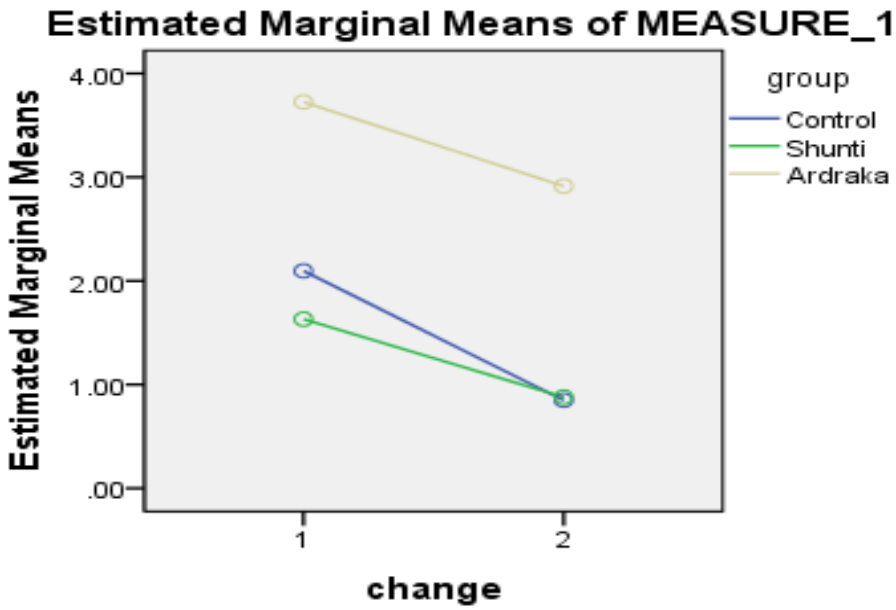


Graph No 12 – Estimated marginal means of Water intake relative value

Table No 69- Statistical analysis results of Urine output absolute value

Group	Phase				Change
	Preliminary		Therapeutic		
	Day 0 to 5		Day 6-15		
	Mean	S.D	Mean	S.D	
Control	3.5833	1.67687	1.7533	.45063	1.83
Shunti	3.4333	2.22051	1.6750	.60291	1.7583
Ardraka	6.0167	2.46123	4.6083	1.69187	1.4084
Total	4.3444	2.35442	2.6789	1.72641	1.6655
Test statistics	F (change)= 18.406 ; p=.001				
	F (change x Groups) = .113 ; p= .894				

A significant decrease in Urine output absolute values irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of 18.406 was found to be significant at .001 level. From the mean values it is clear that there was a decrease of 1.72641 ml (preliminary 4.3444 ml; therapeutic 2.6789 ml) from preliminary to therapeutic phase, which is highly significant. However, when group-wise comparisons made, a non-significant difference was observed (F=.113; p=.894), indicating a similarity in the decrease of Urine output absolute values in all the three selected groups. The mean decrease in Urine output absolute values for control, Shunti and Ardraka groups were 1.83ml, 1.7583ml, and 1.4084ml respectively, which were statistically same.

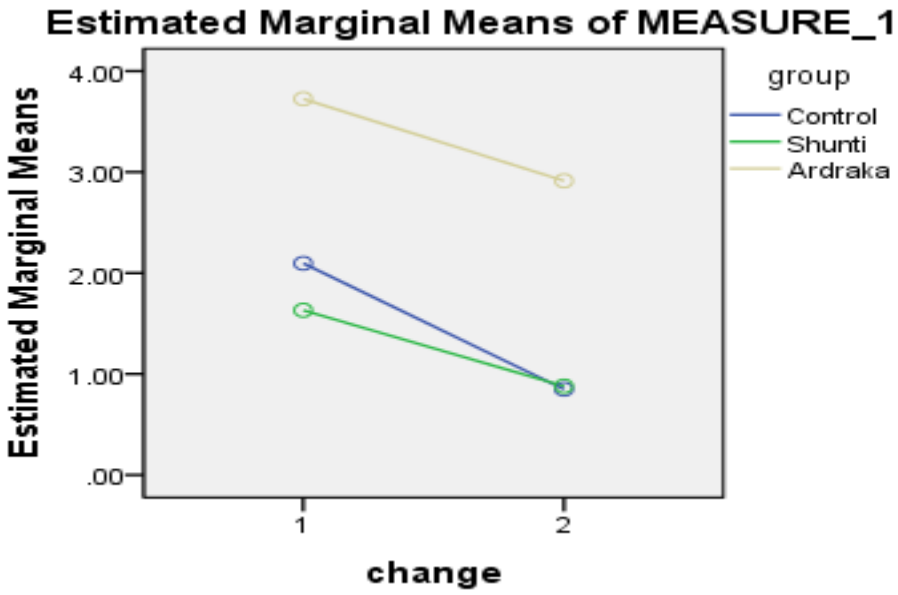


Graph No 13 – Estimated marginal means of Urine output absolute value

Table No 70- Statistical analysis results of Urine output Relative value

Group	Phase				Change
	Preliminary		Therapeutic		
	Day 0 to 5		Day 6-15		
	Mean	S.D	Mean	S.D	
Control	2.0957	1.09787	.8482	.23516	1.2475
Shunti	1.6310	.99573	.8797	.38232	0.7513
Ardraka	3.7247	1.18677	2.9132	1.01364	0.8115
Total	2.4838	1.38335	1.5470	1.16178	0.9368
Test statistics	F (change)= 14.740 ; p=.002				
	F (change x Groups) =.410 ; p= .671				

A significant decrease in Urine output relative values irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of 14.740 was found to be significant at .001 level. From the mean values it is clear that there was a decrease of 1.72641 ml (preliminary 4.3444 ml; therapeutic 2.6789 ml) from preliminary to therapeutic phase, which is highly significant. However, when group-wise comparisons made, a non-significant difference was observed (F=.113; p=.894), indicating a similarity in the decrease of Urine output absolute values in all the three selected groups. The mean decrease in Urine output absolute values for control, Shunti and Ardraka groups were 1.83ml, 1.7583ml, and 1.4084ml respectively, which were statistically same.

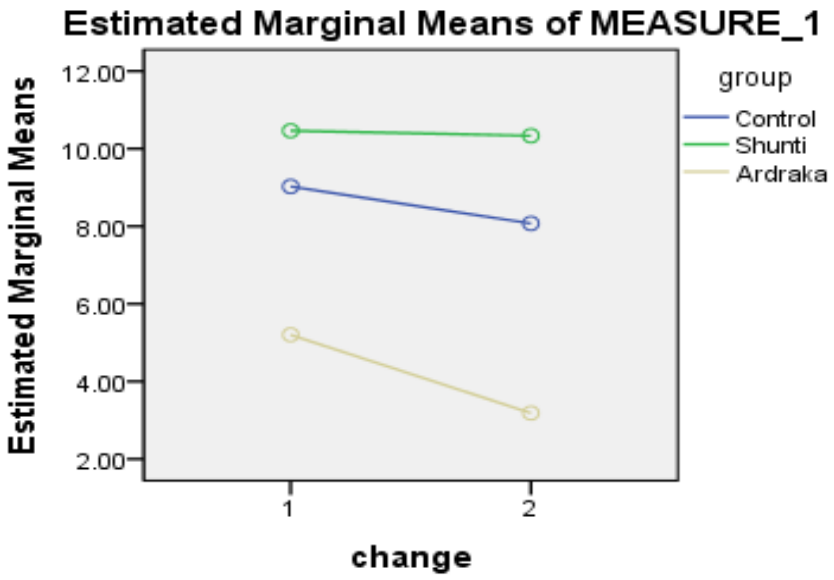


Graph No 14 – Estimated marginal means of Urine output Relative value

Table No 71- Statistical analysis results of Faecal wet absolute value

Group	Phase				Change
	Preliminary		Therapeutic		
	Day 0 to 5		Day 6-15		
	Mean	S.D	Mean	S.D	
Control	9.0267	1.13162	8.0723	.72999	0.9544
Shunti	10.4633	1.36913	10.3340	1.18276	0.1293
Ardraka	5.2037	1.58106	3.1858	1.03294	2.0179
Total	8.2312	2.62299	7.1974	3.21003	1.0338
Test statistics	F (change)= 9.129 ; p=.009				
	F (change x Groups) = 2.552 ; p= .111				

A significant decrease in faecal wet absolute value irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of 9.129 was found to be significant at .009 level. From the mean values it is clear that there was a decrease of 1.0338ml (preliminary 8.2312ml; therapeutic 7.1974ml) from preliminary to therapeutic phase, which is highly significant. However, when group-wise comparisons made, a non-significant difference was observed (F= 2.552; p=.111), indicating a similarity in the decrease of Faecal wet absolute value in all the three selected groups. The mean decrease in faecal wet absolute value for control, Shunti and Ardraka groups were 0.9544ml, 0.1293ml, and 2.0179ml respectively, which were statistically same.

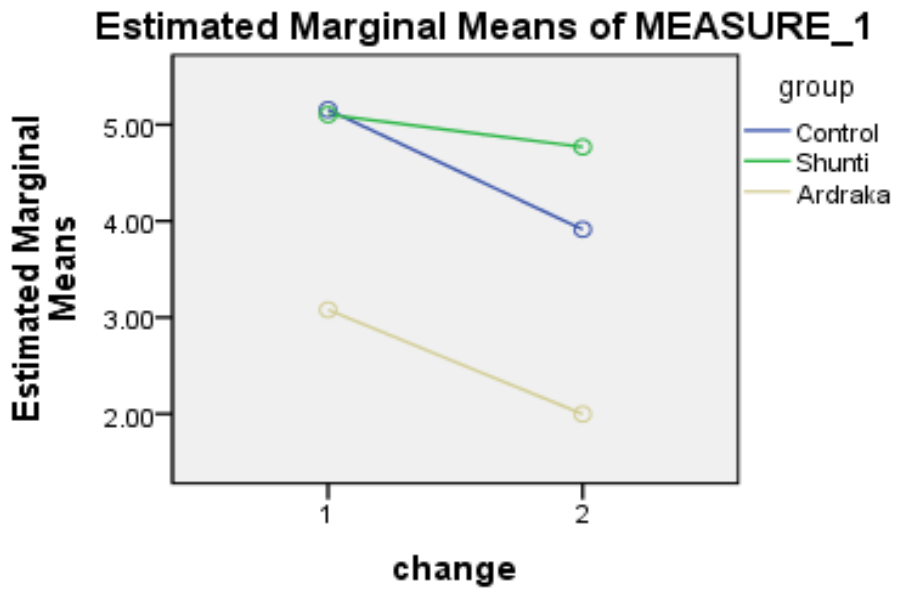


Graph No 15 – Estimated marginal means of Faecal wet absolute value

Table No72- Statistical analysis results of Faecal wet relative value

Group	Phase				Change
	Preliminary		Therapeutic		
	Day 0 to 5		Day 6-15		
	Mean	S.D	Mean	S.D	
Control	5.1553	.65484	3.9128	.25529	1.2425
Shunti	5.1047	1.07202	4.7683	.91365	0.3364
Ardraka	3.0793	.58626	1.9975	.74082	1.0818
Total	4.4464	1.24705	3.5596	1.35905	0.8868
Test statistics	F (change)= 26.702 ; p=.001				
	F (change x Groups) = 2.645; p= .104				

A significant decrease in Faecal wet relative value irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of 26.702 was found to be significant at .001 level. From the mean values it is clear that there was a decrease of 0.8868 ml (preliminary 4.4464ml; therapeutic 3.5596ml) from preliminary to therapeutic phase, which is highly significant. However, when group-wise comparisons made, a non-significant difference was observed (F=2.645; p=.104), indicating a similarity in the decrease of Faecal wet relative value in all the three selected groups. The mean decrease in Faecal wet relative value for control, Shunti and adaraka groups were 1.2425 ml, 1.7583ml, and ml respectively, which were statistically same.

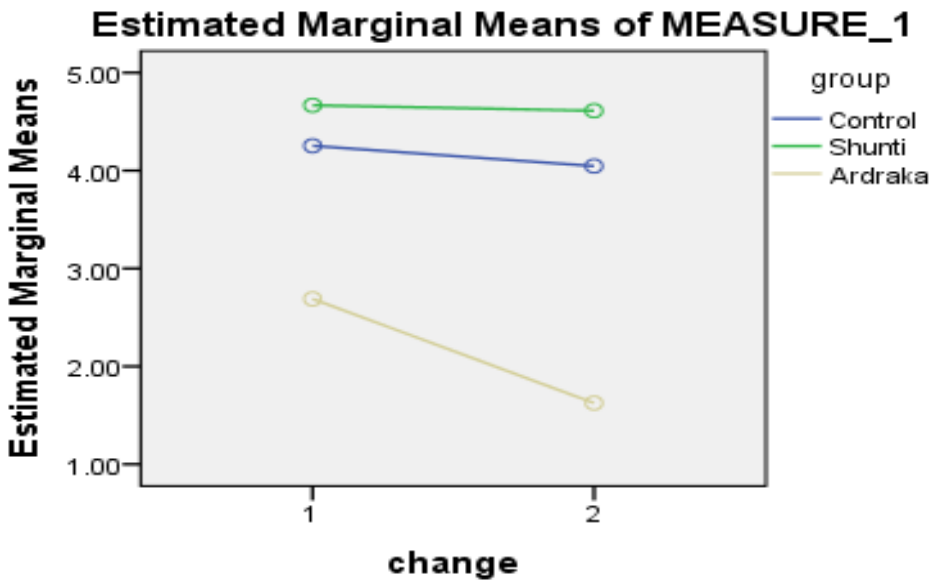


Graph No 16 – Estimated marginal means of faecal wet relative value

Table No 73- Statistical analysis results of Faecal dry absolute value

Group	Phase				Change
	Preliminary		Therapeutic		
	Day 0 to 5		Day 6-15		
	Mean	S.D	Mean	S.D	
Control	4.2533	.50250	4.0462	.36774	0.2071
Shunti	4.6667	.58099	4.6110	.57370	0.0557
Ardraka	2.6893	.54668	1.6255	.42804	1.0638
Total	3.8698	1.01455	3.4276	1.40213	0.4422
Test statistics	F (change)= 12.292 ; p=.003				
	F (change x Groups) = 6.1922; p= .011				

A significant decrease in faecal dry absolute value irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of 12.292 was found to be significant at .003 level. From the mean values it is clear that there was a decrease of 0.4422ml (preliminary 3.8698ml; therapeutic 3.4276) from preliminary to therapeutic phase, which is highly significant. Group-wise comparisons made, significant difference was observed (F= 6.1922; p= .011), indicating better pachana activity of study drug Ardraka amongst all the three selected groups. The mean decrease in Faecal dry absolute value for control, Shunti and Ardraka groups were 0.2071, 0.0557ml, and 1.0638 ml respectively, which were statistically same.

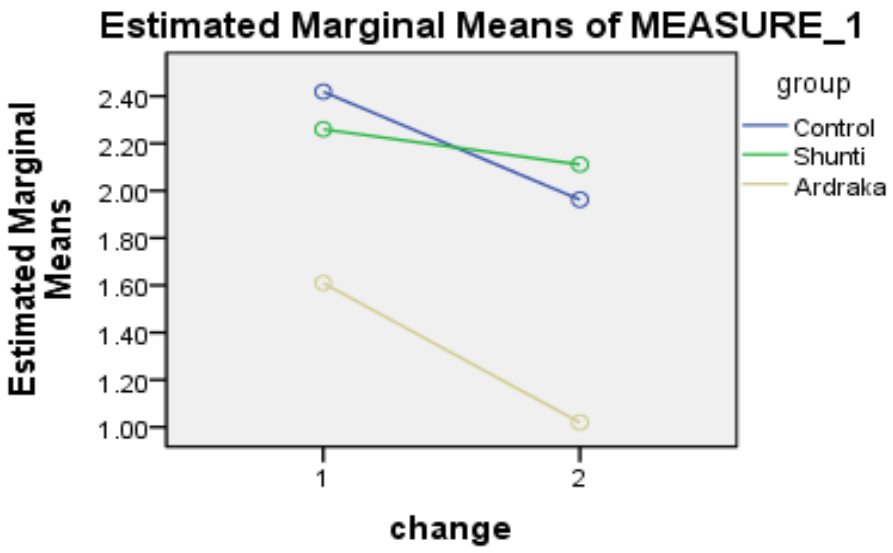


Graph No 17 – Estimated marginal means of Faecal dry absolute value

Table No74 - Statistical analysis results of Faecal dry relative value

Group	Phase				Change
	Preliminary		Therapeutic		
	Day 0 to 5		Day 6-15		
	Mean	S.D	Mean	S.D	
Control	2.4190	.22347	1.9623	.11551	0.4567
Shunti	2.2600	.46811	2.1107	.38873	0.1493
Ardraka	1.6097	.25403	1.0197	.29899	0.59
Total	2.0962	.47740	1.6976	.56730	0.3986
Test statistics	F (change)= 42.406 ; p=.001				
	F (change x Groups) = 4.5426; p=.029				

A significant decrease in Faecal dry relative value irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of 42.406 was found to be significant at .001 level. From the mean values it is clear that there was a decrease of 0.3986ml (preliminary 2.0962ml; therapeutic 1.6976 ml) from preliminary to therapeutic phase, which is highly significant. Group-wise comparisons made, also shows significant difference in the Faecal dry relative value (F=4.5426; p=.029), indicating a similarity in the decrease of Faecal dry relative value in all the three selected groups. The mean decrease in Faecal wet relative value for control, Shunti and Ardraka groups were 0.4567, 0.1493, and 0.59ml respectively, which were statistically significant.

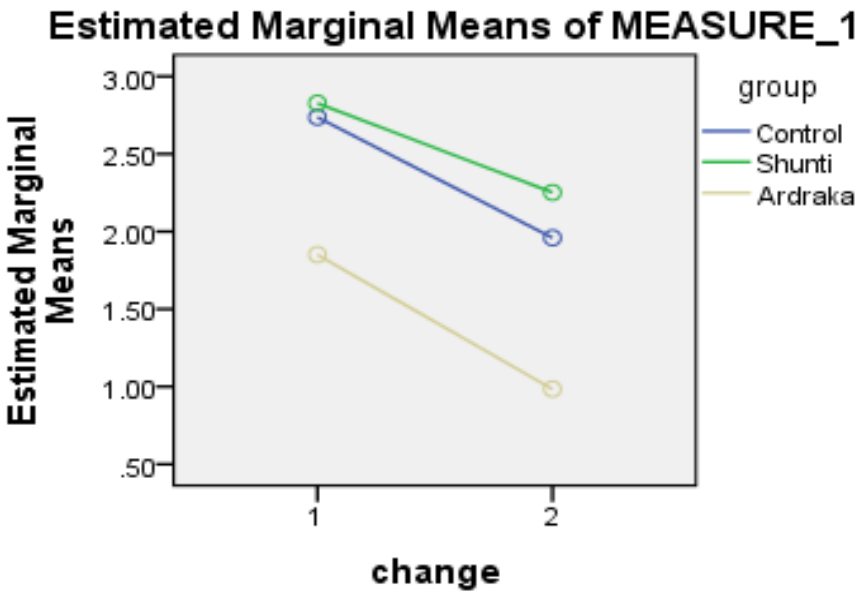


Graph No 18 – Estimated marginal means of Faecal dry relative value

Table No75 - Statistical analysis results of Faecal water absolute value

Group	Phase				Change
	Preliminary		Therapeutic		
	Day 0 to 5		Day 6-15		
	Mean	S.D	Mean	S.D	
Control	2.7363	.45780	1.9592	.18866	2.54764
Shunti	2.8273	.61106	2.2517	.56137	2.26593
Ardraka	1.8507	.52659	.9843	.44157	1.40913
Total	2.4714	.67712	1.7317	.68653	1.78487
Test statistics	F (change)= 41.006 ; p=.001				
	F (change x Groups) = .554; p=.586				

A significant decrease in faecal water absolute value irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of 41.006 was found to be significant at. 001 level. From the mean values it is clear that there was a decrease of 1.78487ml (preliminary 2.4714ml; therapeutic 1.7317) from preliminary to therapeutic phase, which is highly significant. Group-wise comparisons made, significant difference was observed (F= 554; p=.586), indicating a similarity in the decrease of Faecal dry relative value in all the three selected groups. The mean decrease in faecal water absolute value for control, Shunti and Ardraka groups were 2.54764, 2.26593, and 1.40913 ml respectively, which were statistically not significant.

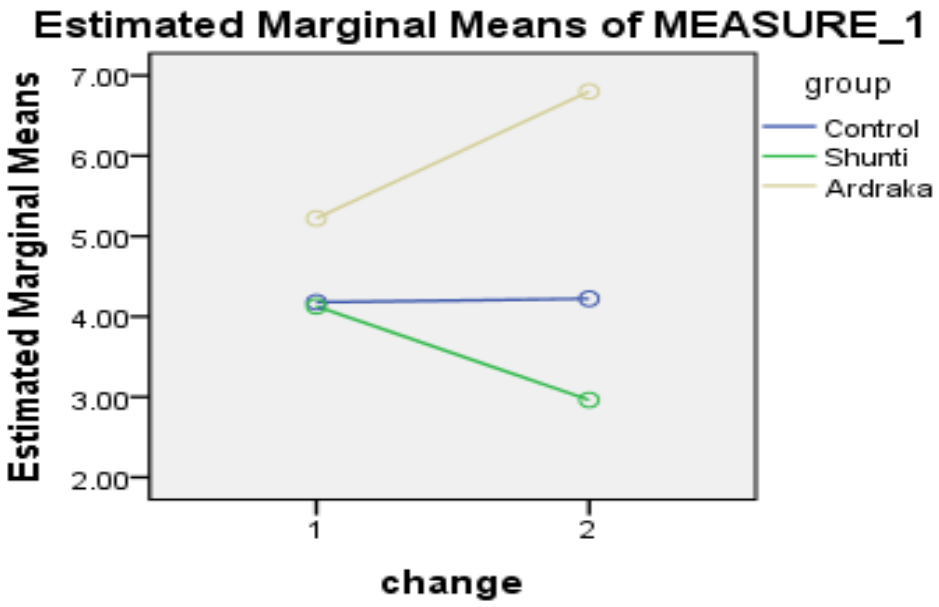


Graph No 19 – Estimated marginal means of Faecal water absolute value

Table No76 - Statistical analysis results of Faecal water relative value

Group	Phase				Change
	Preliminary		Therapeutic		
	Day 0 to 5		Day 6-15		
	Mean	S.D	Mean	S.D	
Control	4.1797	.27843	4.2222	.62103	-0.0425
Shunti	4.1280	.64402	2.9622	.25440	1.1658
Ardraka	5.2217	1.84334	6.8013	2.58249	-1.5796
Total	4.5098	1.18867	4.6619	2.19030	-0.1521
Test statistics	F (change)= .321 ; p=.580				
	F (change x Groups) = 8.750; p=.003				

A nonsignificant decrease in faecal water relative value irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of .321 was found to be nonsignificant at. 580 level. From the mean values it is clear that there was a decrease of -0.1521ml (preliminary 4.5098ml; therapeutic 4.6619) from preliminary to therapeutic phase, which is highly nonsignificant. Group-wise comparisons made, significant difference was observed (F= 8.750; p=.003) indicating a similarity in the decrease of Faecal water relative value in all the three selected groups. The mean decrease in faecal water absolute value for control, Shunti and Ardraka groups were -0.0425, 2.26593, and 1.40913 ml respectively, which were statistically not significant.



Graph No 20 – Estimated marginal means of Faecal water relative value

Table No 77- Statistical analysis results of One-way Descriptive

		N	Mean	Std. Deviation	Std. Error
Food absolute	Control	6	9.8550	10.75731	4.39165
	Shunti	6	11.8420	8.33405	3.40236
	Ardraka	6	21.4693	14.82079	6.05056
	Total	18	14.3888	12.09573	2.85099
Food relative	Control	6	22.5405	7.37489	3.01079
	Shunti	6	16.0114	7.16652	2.92572
	Ardraka	6	19.3101	13.11516	5.35424
	Total	18	19.2873	9.44541	2.22630
Water absolute	Control	6	-3.7027	15.34480	6.26449
	Shunti	6	2.0456	12.48050	5.09514
	Ardraka	6	-14.3142	21.66768	8.84580
	Total	18	-5.3238	17.37163	4.09453
Water relative	Control	6	11.1940	13.16169	5.37324
	Shunti	6	6.8761	13.51116	5.51591
	Ardraka	6	-29.0325	29.37126	11.99077
	Total	18	-3.6541	26.50720	6.24781
Urine absolute	Control	6	44.0498	22.63458	9.24053
	Shunti	6	44.1204	13.45450	5.49278
	Ardraka	6	17.9666	27.23281	11.11775
	Total	18	35.3789	24.13635	5.68899
Urine relative	Control	6	52.7115	19.69851	8.04188
	Shunti	6	32.4950	51.35631	20.96613
	Ardraka	6	16.3768	34.61291	14.13066
	Total	18	33.8611	38.42120	9.05596
Fecal wet absolute	Control	6	9.0590	16.09754	6.57179
	Shunti	6	1.0579	1.68903	.68954
	Ardraka	6	35.5790	24.50578	10.00444
	Total	18	15.2320	22.00354	5.18629
Fecal wet relative	Control	6	22.7949	13.01043	5.31148
	Shunti	6	6.2074	3.68560	1.50464
	Ardraka	6	33.7126	23.99445	9.79569
	Total	18	20.9049	18.93440	4.46288
Fecal dry absolute	Control	6	3.8457	13.72787	5.60438
	Shunti	6	1.1357	4.53456	1.85123
	Ardraka	6	38.3951	17.07980	6.97280
	Total	18	14.4588	21.25784	5.01052
Fecal dry relative	Control	6	18.1563	10.21839	4.17164
	Shunti	6	6.1781	5.31060	2.16804
	Ardraka	6	36.2289	16.44663	6.71431
	Total	18	20.1878	16.73645	3.94482
Fecal water absolute	Control	6	26.2668	16.66935	6.80523
	Shunti	6	20.6157	4.89994	2.00039
	Ardraka	6	44.6996	21.42981	8.74868
	Total	18	30.5273	18.32554	4.31937
Fecal water relative	Control	6	-1.2507	15.22167	6.21422
	Shunti	6	26.4512	15.06103	6.14864
	Ardraka	6	-33.4999	35.39118	14.44839
	Total	18	-2.7665	33.74509	7.95379

Table No 78- Statistical analysis results of ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Food absolute	Between Groups	463.056	2	231.528	1.716	.213
	Within Groups	2024.160	15	134.944		
	Total	2487.216	17			
Food relative	Between Groups	127.890	2	63.945	.691	.516
	Within Groups	1388.777	15	92.585		
	Total	1516.667	17			
Water absolute	Between Groups	826.581	2	413.290	1.441	.268
	Within Groups	4303.571	15	286.905		
	Total	5130.151	17			
Water relative	Between Groups	5852.477	2	2926.238	7.205	.006
	Within Groups	6092.261	15	406.151		
	Total	11944.738	17			
Urine absolute	Between Groups	2728.707	2	1364.354	2.852	.089
	Within Groups	7174.870	15	478.325		
	Total	9903.577	17			
Urine relative	Between Groups	3977.426	2	1988.713	1.413	.274
	Within Groups	21117.781	15	1407.852		
	Total	25095.207	17			
Fecal wet absolute	Between Groups	3918.068	2	1959.034	6.814	.008
	Within Groups	4312.584	15	287.506		
	Total	8230.652	17			
Fecal wet relative	Between Groups	2301.754	2	1150.877	4.551	.029
	Within Groups	3792.943	15	252.863		
	Total	6094.697	17			
Fecal dry absolute	Between Groups	5178.550	2	2589.275	15.513	.000
	Within Groups	2503.681	15	166.912		
	Total	7682.231	17			
Fecal dry relative	Between Groups	2746.299	2	1373.150	10.219	.002
	Within Groups	2015.548	15	134.370		
	Total	4761.847	17			
Fecal water absolute	Between Groups	1903.468	2	951.734	3.751	.048
	Within Groups	3805.566	15	253.704		
	Total	5709.034	17			
Fecal water relative	Between Groups	10803.086	2	5401.543	9.470	.002
	Within Groups	8555.347	15	570.356		
	Total	19358.432	17			

POST HOC TESTS (SCHEFFE METHOD) HOMOGENEOUS SUBSETS

Table No 79 – Post Hoc Tests for Water intake Relative

Group	N	Subset for alpha = 0.05	
		1	2
Ardraka	6	-29.0325	
Shunti	6		6.8761
Control	6		11.1940
Sig.		1.000	.934
Means for groups in homogeneous subsets are displayed.			
A. Uses harmonic mean sample size = 6.000.			

Table No 80 – Post Hoc Tests for Fecal water absolute

Group	N	Subset for alpha = 0.05	
		1	2
Shunti	6	1.0579	
Control	6	9.0590	9.0590
Ardraka	6		35.5790
Sig.		.721	.050
Means for groups in homogeneous subsets are displayed.			
A. Uses harmonic mean sample size = 6.000.			

Table No 81 – Post Hoc Tests for Fecal water relative

Group	N	Subset for alpha = 0.05	
		1	2
Shunti	6	6.2074	
Control	6	22.7949	22.7949
Ardraka	6		33.7126
Sig.		.228	.509
Means for groups in homogeneous subsets are displayed.			
A. Uses harmonic mean sample size = 6.000.			

Table No 82– Post Hoc Tests for Fecal dry absolute

Group	N	Subset for alpha = 0.05	
		1	2
Shunti	6	1.1357	
Control	6	3.8457	
Ardraka	6		38.3951
Sig.		.936	1.000
Means for groups in homogeneous subsets are displayed.			
A. Uses harmonic mean sample size = 6.000.			

Table No 83– Post Hoc Tests for Fecal dry relative

Group	N	Subset for alpha = 0.05	
		1	2
Shunti	6	6.1781	
Control	6	18.1563	18.1563
Ardraka	6		36.2289
Sig.		.234	.051
Means for groups in homogeneous subsets are displayed.			
A. Uses harmonic mean sample size = 6.000.			

Table No 84 – Post Hoc Tests for Fecal water relative

Group	N	Subset for alpha = 0.05	
		1	2
Ardraka	6	-33.4999	
Control	6	-1.2507	-1.2507
Shunti	6		26.4512
Sig.		.097	.167
Means for groups in homogeneous subsets are displayed.			
A. Uses harmonic mean sample size = 6.000.			

Table No 85 - Descriptive statistics of Food conversation ratio

	Group	Mean	Std. Deviation	N
Food conversation ratio Day 0-5	Control	4.17967	.278431	6
	Ardraka	5.22167	1.843337	6
	Shunti	4.12800	.644017	6
	Total	4.50978	1.188671	18
Food conversation ratio Day 6-15	Control	4.22217	.621033	6
	Ardraka	6.80133	2.582487	6
	Shunti	2.96217	.254396	6
	Total	4.66189	2.190299	18

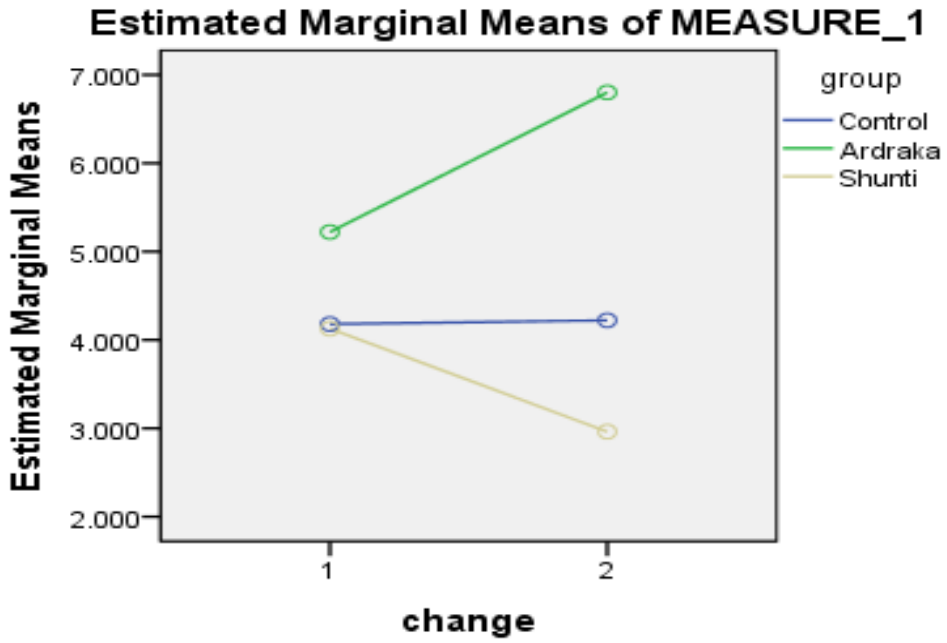
Table No 86- Tests of Within-Subjects Effects (Food conversation ratio)

Source	Type III sum of squares	Df	Mean square	F	Sig.
Change	.208	1	.208	.321	.580
Change * group	11.361	2	5.680	8.750	.003
Error(change)	9.738	15	.649		

Table No 87 - Tests of Between-Subjects Effects (Food conversation ratio)

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	757.075	1	757.075	250.625	.000
group	39.166	2	19.583	6.483	.009
Error	45.311	15	3.021		



Graph No 21 – Estimated marginal means of Food conversation ratio

Table No 88- Descriptive statistics of Body weight percentage

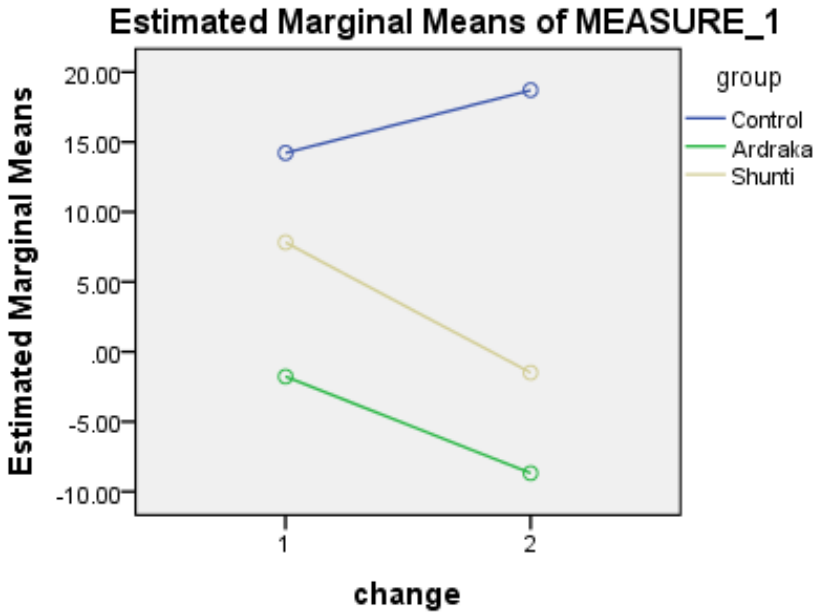
	Group	Mean	Std. Deviation	N
Body weight percentage Day 0-5	Control	14.2187	6.29807	6
	Ardraka	-1.7750	3.77387	6
	Shunti	7.8167	5.00309	6
	Total	6.7534	8.30400	18
Body weight percentage Day 6-15	Control	18.7050	5.14339	6
	Ardraka	-8.6767	3.34584	6
	Shunti	-1.4917	4.06007	6
	Total	2.8456	12.57738	18

Table No 89- Tests of Within-Subjects Effects (Body weight percentage)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
change	137.444	1	137.444	10.911	.005
change * group	325.771	2	162.886	12.931	.001
Error(change)	188.950	15	12.597		

Table No 90- Tests of Between-Subjects Effects (Body weight percentage)
Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	829.267	1	829.267	26.110	.000
group	2870.365	2	1435.183	45.187	.000
Error	476.410	15	31.761		



Graph No 22 – Estimated marginal means of Body weight percentage

Table No 91- One-way Descriptive

		N	Mean	Std. Deviation	Std. Error
Stomach weight	Control	6	1.7233	.14922	.06092
	Ardraka	6	1.5968	.06960	.02842
	Shunti	6	1.6665	.17102	.06982
	Total	18	1.6622	.13932	.03284
Gastric juice	Control	6	7.4000	1.75613	.71694
	Ardraka	6	6.1000	2.60768	1.06458
	Shunti	6	8.8500	2.88565	1.17806
	Total	18	7.4500	2.58690	.60974
pH	Control	6	2.3333	.81650	.33333
	Ardraka	6	2.6667	1.03280	.42164
	Shunti	6	2.0000	.00000	.00000
	Total	18	2.3333	.76696	.18078
Total acid	Control	6	3.5000	.27568	.11255
	Ardraka	6	3.4333	.38816	.15846
	Shunti	6	4.3000	.45166	.18439
	Total	18	3.7444	.53930	.12712
Free acid	Control	6	2.0333	.22509	.09189
	Ardraka	6	1.8000	.92520	.37771
	Shunti	6	2.3833	.25626	.10462
	Total	18	2.0722	.58892	.13881
Carbohydrate	Control	6	671.8333	382.83909	156.29340

	Ardraka	6	540.0000	267.13293	109.05656
	Shunti	6	673.5000	477.67091	195.00833
	Total	18	628.4444	367.89436	86.71353
Total protein	Control	6	1903.3333	1549.93763	632.75939
	Ardraka	6	4243.3333	1432.00093	584.61193
	Shunti	6	1616.6667	1309.31534	534.52575
	Total	18	2587.7778	1810.92292	426.83863
D peptic activity	Control	6	103.7333	16.45499	6.71772
	Ardraka	6	184.1333	145.57417	59.43041
	Shunti	6	46.0500	38.39447	15.67448
	Total	18	111.3056	100.70363	23.73607

Table No 92 – ANOVA

		Sum of squares	Df	Mean square	F	Sig.
Stomach Weight	Between groups	.048	2	.024	1.282	.306
	Within groups	.282	15	.019		
	Total	.330	17			
Gastric juice	Between groups	22.710	2	11.355	1.871	.188
	Within groups	91.055	15	6.070		
	Total	113.765	17			
pH	Between groups	1.333	2	.667	1.154	.342
	Within groups	8.667	15	.578		
	Total	10.000	17			
Total acid	Between groups	2.791	2	1.396	9.721	.002
	Within groups	2.153	15	.144		
	Total	4.944	17			
Free acid	Between groups	1.034	2	.517	1.596	.235
	Within groups	4.862	15	.324		
	Total	5.896	17			
Carbohydrate	Between	70410.111	2	35205.056	.237	.792

	groups					
	Within groups	2230476.333	15	148698.422		
	Total	2300886.444	17			
Total protein	Between groups	24914311.111	2	12457155.556	6.060	.012
	Within groups	30836200.000	15	2055746.667		
	Total	55750511.111	17			
D peptic activity	Between groups	57717.068	2	28858.534	3.775	.047
	Within groups	114683.702	15	7645.580		
	Total	172400.769	17			

Post Hoc Tests (Scheffe Method)

Table No 93 – Post Hoc Tests for Total acid, Total protein, D peptic activity

group	N	Total acid		Total protein		D peptic activity	
		Subset for alpha = 0.05					
		1	2	1	2	1	2
Ardraka	6	3.4333			4243.3333		184.1333
Control	6	3.5000		1903.3333		103.7333	103.7333
Shunti	6		4.3000	1616.6667		46.0500	

7.3 Taste threshold study (Rasa Nirdharana) - Observational study

First Pilot Study was done, than 300 cases study later,

A) Pilot study- 90 cases (Each group 30)

B) Main study-300 cases (Each group 100)

A) Test for Reliability of Pilot study

Taste threshold test with the questionnaire which includes parameters mentioned in the classics, Likert Values Scale and Visual analog Scale. Questionnaire was designed and validated internal consistency using Cronbach's Alpha.

According to the subject experts opinion a point is added in the 4th Domain (Taste of Liquid) of the questionnaire, as it supported the further better analysis and interpretation.

Table No 94 - Cronbach's alpha reliability coefficient results of Pilot study

Sl No	**Domain**	**Cronbach's alpha reliability coefficient**
1.	Irritation on Tongue (Tudativacha)	.867
2.	Pricking /Tingling sensation (Chimchimayana)	.937

3.	Burning sensation in Mouth /Chest (Daha)	.866
4.	Secretions through mouth ,nose and Eye (Chakshurvirechayati)	.870
5.	Burning sensation in chest and abdomen (Vidahatideham)	.896
6.	Irritation in the nasopharangeal region (Kanta and Shiropradesha)	.942
7.	Excessive salivation (Aasya Sravana)	.799
8.	Taste of liquid (Same as water, Doubtful if Pure water, A very faint taste can't say what, A very weak taste can't say what)	.839
9.	A very faint taste of (Madhura, Amla, Lavana, Katu, Tikta, Kashaya)	.773
10.	A faint taste of (Madhura, Amla, Lavana, Katu, Tikta, Kashaya)	.662
11.	A weak taste of (Madhura, Amla, Lavana, Katu, Tikta, Kashaya)	.639
12.	A clear taste of (Madhura, Amla, Lavana, Katu, Tikta, Kashaya)	.861
13.	Visual Analog Scale	.945
		10.896 /13=0.836

To interpret the rule of George and Mallery (2003) is followed as mention below,

Cronbach's alpha	**Internal consistency**
• $0.9 \leq \alpha$	Excellent
• $0.8 \leq \alpha < 0.9$	Good
• $0.7 \leq \alpha < 0.8$	Acceptable
• $0.6 \leq \alpha < 0.7$	Questionable
• $0.5 \leq \alpha < 0.6$	Poor
• $\alpha < 0.5$	Unacceptable

Observation and interpretation of Pilot study

It was observed that Cronbach's alpha reliability coefficient for Taste threshold test with the questionnaire was 0.836 which is said to be good according to the rule of George and Mallery (2003).

By the *Rasa Nirdharana* study an attempt has been made to percept that typical character for that particular *Rasa*. This study will provide the authentification of the drug as well as the *Rasa Lakshana*.

B) Main study-300 cases (Each group 100)

Gender distribution

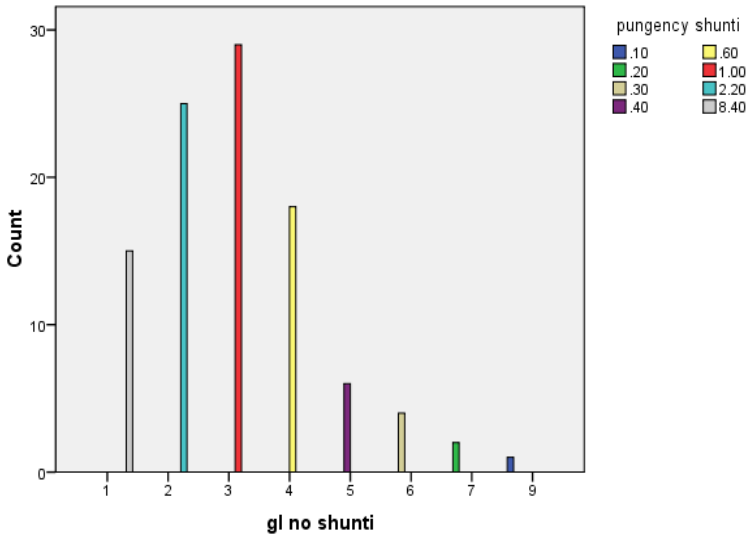
		Group			Total
		Adaraka	Shunti	Capsicum	
Gender	Female	71	71	71	213
	Male	29	29	29	87
Total		**100**	**100**	**100**	**300**

Pungency Value

The pungency value for the test drug group Ardraka and Shunti was calculated based on the procedure and methodology prescribed by W.H.O

Table No 95- Glass number and pungency value of Shunti Cross tabulation

Gl no Shunti		**Pungency value of Shunti**								**Total**
		0.1	0.2	0.3	0.4	0.6	1	2.2	8.4	
1	Count	0	0	0	0	0	0	0	15	15
	% of Total	.0%	.0%	.0%	.0%	.0%	.0%	.0%	15.0%	15.0%
2	Count	0	0	0	0	0	0	25	0	25
	% of Total	.0%	.0%	.0%	.0%	.0%	.0%	25.0%	.0%	25.0%
3	Count	0	0	0	0	0	29	0	0	29
	% of Total	.0%	.0%	.0%	.0%	.0%	29.0%	.0%	.0%	29.0%
4	Count	0	0	0	0	18	0	0	0	18
	% of Total	.0%	.0%	.0%	.0%	18.0%	.0%	.0%	.0%	18.0%
5	Count	0	0	0	6	0	0	0	0	6
	% of Total	.0%	.0%	.0%	6.0%	.0%	.0%	.0%	.0%	6.0%
6	Count	0	0	4	0	0	0	0	0	4
	% of Total	.0%	.0%	4.0%	.0%	.0%	.0%	.0%	.0%	4.0%
7	Count	0	2	0	0	0	0	0	0	2
	% of Total	.0%	2.0%	.0%	.0%	.0%	.0%	.0%	.0%	2.0%
9	Count	1	0	0	0	0	0	0	0	1
	% of Total	1.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	1.0%
Total	Count	1	2	4	6	18	29	25	15	100
	% of Total	1.0%	2.0%	4.0%	6.0%	18.0%	29.0%	25.0%	15.0%	100.0%

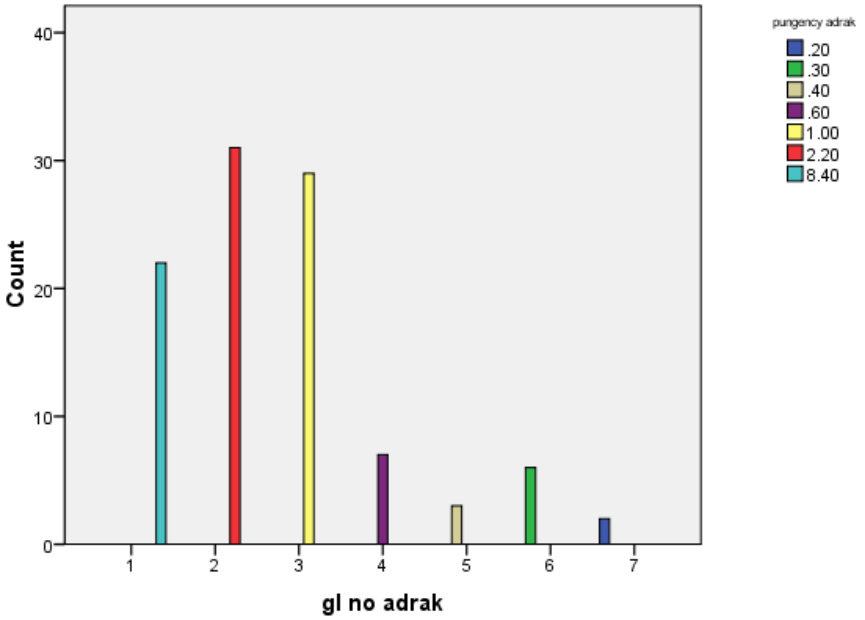


Graph No 23 - Glass number and pungency value of Shunti Cross tabulation

Table No 96 - Glass number and pungency value of Shunti Cross tabulation

Pungency Value of Ardraka									
gl no adrak		pungency adrak							Total
		0.2	0.3	0.4	0.6	1	2.2	8.4	
1	Count	0	0	0	0	0	0	22	22
	% of Total	.0%	.0%	.0%	.0%	.0%	.0%	22.0%	22.0%
2	Count	0	0	0	0	0	31	0	31
	% of Total	.0%	.0%	.0%	.0%	.0%	31.0%	.0%	31.0%
3	Count	0	0	0	0	29	0	0	29
	% of Total	.0%	.0%	.0%	.0%	29.0%	.0%	.0%	29.0%
4	Count	0	0	0	7	0	0	0	7
	% of Total	.0%	.0%	.0%	7.0%	.0%	.0%	.0%	7.0%
5	Count	0	0	3	0	0	0	0	3
	% of Total	.0%	.0%	3.0%	.0%	.0%	.0%	.0%	3.0%
6	Count	0	6	0	0	0	0	0	6
	% of Total	.0%	6.0%	.0%	.0%	.0%	.0%	.0%	6.0%
7	Count	2	0	0	0	0	0	0	2
	% of Total	2.0%	.0%	.0%	.0%	.0%	.0%	.0%	2.0%

Total	Count	2	6	3	7	29	31	22	100
	% of Total	2.0%	6.0%	3.0%	7.0%	29.0%	31.0%	22.0%	100.0%



Graph No 24 - Glass number and pungency value of Shunti Cross tabulation

Table No 97- Taste threshold value with glass number of each case

Case code	Glass no	Shunti	Glass no	Adraka
1	2	2.2	3	1.0
2	1	8.4	1	8.4
3	1	8.4	6	0.3
4	4	0.6	5	0.4
5	6	0.3	1	8.4
6	1	8.4	2	2.2
7	4	0.6	3	1.0
8	4	0.6	6	0.3
9	2	2.2	2	2.2
10	4	0.6	2	2.2
11	7	0.2	3	1.0
12	4	0.6	2	2.2
13	3	1.0	3	1.0
14	4	0.6	2	2.2
15	3	1.0	1	8.4
16	9	0.1	2	2.2
17	1	8.4	4	0.6
18	3	1.0	1	8.4
19	4	0.6	6	0.3

20	2	2.2	5	0.4
21	3	1.0	6	0.3
22	3	1.0	7	0.2
23	2	2.2	3	1.0
24	1	8.4	2	2.2
25	4	0.6	4	0.6
26	1	8.4	2	2.2
27	2	2.2	3	1.0
28	1	8.4	7	0.2
29	4	0.6	2	2.2
30	2	2.2	2	2.2
31	3	1.0	3	1.0
32	3	1.0	3	1.0
33	4	0.6	3	1.0
34	7	0.2	3	1.0
35	2	2.2	3	1.0
36	1	8.4	2	2.2
37	3	1.0	3	1.0
38	2	2.2	1	8.4
39	5	0.4	2	2.2
40	4	0.6	1	8.4
41	3	1.0	1	8.4
42	2	2.2	3	1.0
43	6	0.3	3	1.0
44	2	2.2	2	2.2
45	3	1.0	6	0.3
46	3	1.0	3	1.0
47	3	1.0	2	2.2
48	4	0.6	3	1.0
49	3	1.0	3	1.0
50	2	2.2	4	0.6
51	5	0.4	3	1.0
52	3	1.0	2	2.2
53	2	2.2	4	0.6
54	3	1.0	1	8.4
55	2	2.2	1	8.4
56	3	1.0	1	8.4
57	3	1.0	6	0.3
58	1	8.4	4	0.6
59	2	2.2	5	0.4
60	2	2.2	3	1.0
61	2	2.2	1	8.4
62	1	8.4	2	2.2
63	1	8.4	1	8.4

64	4	0.6	2	2.2
65	2	2.2	3	1.0
66	1	8.4	2	2.2
67	1	8.4	2	2.2
68	1	8.4	2	2.2
69	2	2.2	4	0.6
70	2	2.2	1	8.4
71	1	8.4	3	1.0
72	5	0.4	2	2.2
73	4	0.6	2	2.2
74	4	0.6	3	1.0
75	3	1.0	3	1.0
76	3	1.0	3	1.0
77	3	1.0	3	1.0
78	2	2.2	2	2.2
79	2	2.2	2	2.2
80	6	0.3	4	0.6
81	2	2.2	2	2.2
82	3	1.0	2	2.2
83	4	0.6	2	2.2
84	4	0.6	1	8.4
85	3	1.0	3	1.0
86	3	1.0	3	1.0
87	3	1.0	1	8.4
88	2	2.2	1	8.4
89	2	2.2	1	8.4
90	5	0.4	1	8.4
91	3	1.0	1	8.4
92	3	1.0	2	2.2
93	5	0.4	2	2.2
94	6	0.3	3	1.0
95	3	1.0	2	2.2
96	3	1.0	1	8.4
97	4	0.6	1	8.4
98	5	0.4	1	8.4
99	3	1.0	3	1.0
100	2	2.2	2	2.2
Mean value		**2.3**		**2.9**

7.3 Irritation on Tongue (Tudativacha)

Severity	Group	10%				20%				30%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	79	84	55	218	46	67	45	158	35	46	22	103
	Exp	72.7	72.7	72.7	218.0	52.7	52.7	52.7	158.0	34.3	34.3	34.3	103.0
	% WG	79.0%	84.0%	55.0%	72.7%	46.0%	67.0%	45.0%	52.7%	35.0%	46.0%	22.0%	34.3%
	% of T	26.3%	28.0%	18.3%	72.7%	15.3%	22.3%	15.0%	52.7%	11.7%	15.3%	7.3%	34.3%
+	Count	21	16	42	79	49	31	48	128	49	46	58	153
	Exp	26.3	26.3	26.3	79.0	42.7	42.7	42.7	128.0	51.0	51.0	51.0	153.0
	% WG	21.0%	16.0%	42.0%	26.3%	49.0%	31.0%	48.0%	42.7%	49.0%	46.0%	58.0%	51.0%
	% of T	7.0%	5.3%	14.0%	26.3%	16.3%	10.3%	16.0%	42.7%	16.3%	15.3%	19.3%	51.0%
++	Count	0	0	3	3	5	2	7	14	16	7	20	43
	Exp	1.0	1.0	1.0	3.0	4.7	4.7	4.7	14.0	14.3	14.3	14.3	43.0
	% WG	0.0%	0.0%	3.0%	1.0%	5.0%	2.0%	7.0%	4.7%	16.0%	7.0%	20.0%	14.3%
	% of T	0.0%	0.0%	1.0%	1.0%	1.7%	0.7%	2.3%	4.7%	5.3%	2.3%	6.7%	14.3%
+++	Count	0	0	0	0	0	0	0	0	0	1	0	1
	Exp	0	0	0	0	0	0	0	0	.3	.3	.3	1.0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	0.0%	1.0%	0.0%	0.3%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	0.0%	0.3%	0.0%	0.3%
	Test	Chi-square =27.07; p=.001				Chi-square =13.37; p=.010				Chi-square =18.123; p=.006			

Table No 98 – Showing statistical data of Irritation on Tongue (Tudativacha) at 10% to 30%

Irritation on Tongue (Tudativacha)

Severity	Group	40%				50%				60%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	24	42	7	73	23	30	7	60	22	26	6	54
	Exp	24.3	24.3	24.3	73.0	20.0	20.0	20.0	60.0	18.0	18.0	18.0	54.0
	% WG	24.0%	42.0%	7.0%	24.3%	23.0%	30.0%	7.0%	20.0%	22.0%	26.0%	6.0%	18.0%
	% of T	8.0%	14.0%	2.3%	24.3%	7.7%	10.0%	2.3%	20.0%	7.3%	8.7%	2.0%	18.0%
+	Count	43	42	41	126	40	44	23	107	28	33	19	80
	Exp	42.0	42.0	42.0	126.0	35.7	35.7	35.7	107.0	26.7	26.7	26.7	80.0
	% WG	43.0%	42.0%	41.0%	42.0%	40.0%	44.0%	23.0%	35.7%	28.0%	33.0%	19.0%	26.7%
	% of T	14.3%	14.0%	13.7%	42.0%	13.3%	14.7%	7.7%	35.7%	9.3%	11.0%	6.3%	26.7%
++	Count	30	15	52	97	30	23	67	120	45	35	63	143
	Exp	32.3	32.3	32.3	97.0	40.0	40.0	40.0	120.0	47.7	47.7	47.7	143.0
	% WG	30.0%	15.0%	52.0%	32.3%	30.0%	23.0%	67.0%	40.0%	45.0%	35.0%	63.0%	47.7%
	% of T	10.0%	5.0%	17.3%	32.3%	10.0%	7.7%	22.3%	40.0%	15.0%	11.7%	21.0%	47.7%
+++	Count	3	1	0	4	7	3	3	13	5	6	12	23
	Exp	1.3	1.3	1.3	4.0	4.3	4.3	4.3	13.0	7.7	7.7	7.7	23.0
	% WG	3.0%	1.0%	0.0%	1.3%	7.0%	3.0%	3.0%	4.3%	5.0%	6.0%	12.0%	7.7%
	% of T	1.0%	0.3%	0.0%	1.3%	2.3%	1.0%	1.0%	4.3%	1.7%	2.0%	4.0%	7.7%
	Test	Chi-square =50.148; p=.001				Chi-square =51.28; p=.001				Chi-square =20.40; p=.001			

Table No 99 – Showing statistical data of Irritation on Tongue (Tudativacha) at 40% to 60%

Irritation on Tongue (Tudativacha)

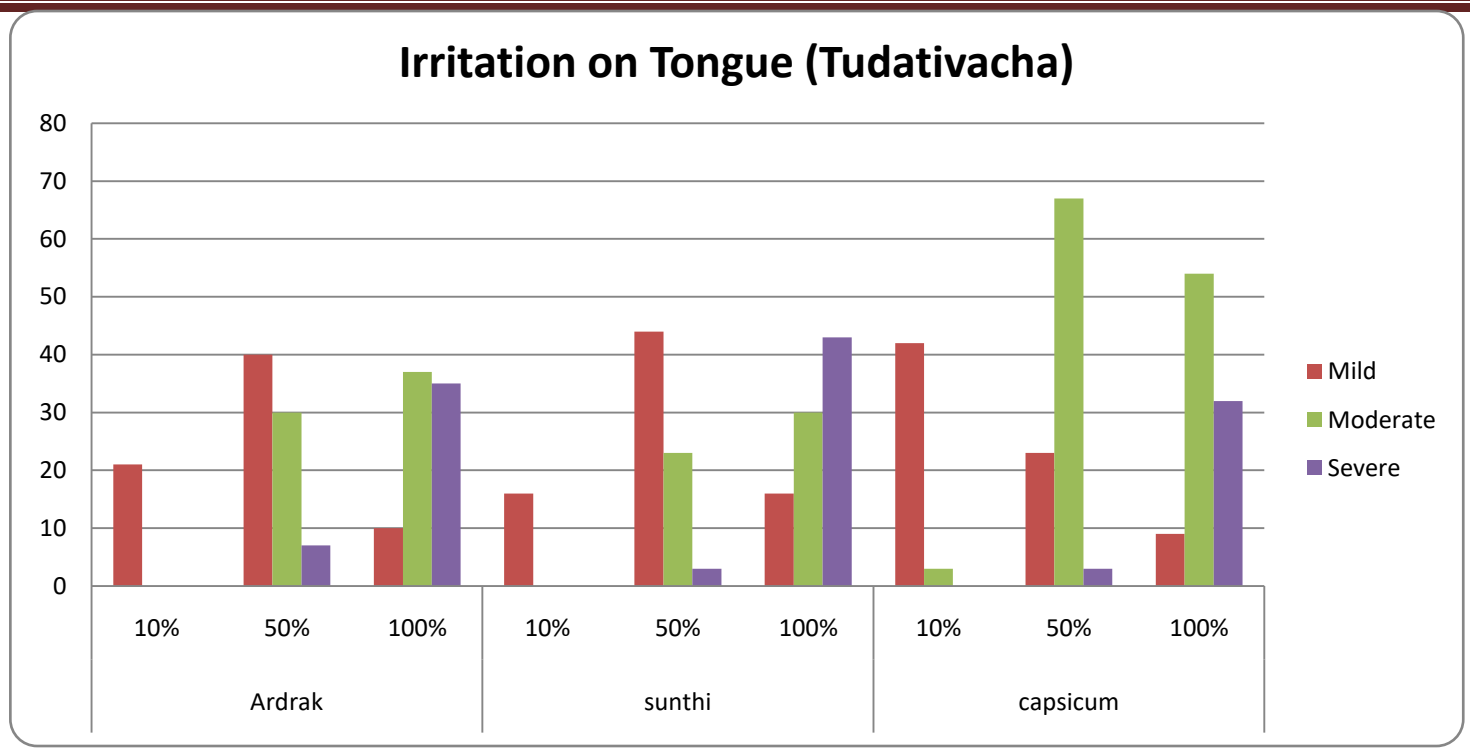
Severity	Group	70%				80%				90%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	16	15	6	37	21	15	6	42	19	13	5	37
	Exp	12.3	12.3	12.3	37.0	14.0	14.0	14.0	42.0	12.3	12.3	12.3	37.0
	% WG	16.0%	15.0%	6.0%	12.3%	21.0%	15.0%	6.0%	14.0%	19.0%	13.0%	5.0%	12.3%
	% of T	5.3%	5.0%	2.0%	12.3%	7.0%	5.0%	2.0%	14.0%	6.3%	4.3%	1.7%	12.3%
+	Count	26	39	14	79	19	14	12	45	13	14	9	36
	Exp	26.3	26.3	26.3	79.0	15.0	15.0	15.0	45.0	12.0	12.0	12.0	36.0
	% WG	26.0%	39.0%	14.0%	26.3%	19.0%	14.0%	12.0%	15.0%	13.0%	14.0%	9.0%	12.0%
	% of T	8.7%	13.0%	4.7%	26.3%	6.3%	4.7%	4.0%	15.0%	4.3%	4.7%	3.0%	12.0%
++	Count	46	38	62	146	38	61	61	160	41	50	63	154
	Exp	48.7	48.7	48.7	146.0	53.3	53.3	53.3	160.0	51.3	51.3	51.3	154.0
	% WG	46.0%	38.0%	62.0%	48.7%	38.0%	61.0%	61.0%	53.3%	41.0%	50.0%	63.0%	51.3%
	% of T	15.3%	12.7%	20.7%	48.7%	12.7%	20.3%	20.3%	53.3%	13.7%	16.7%	21.0%	51.3%
+++	Count	12	8	18	38	22	10	21	53	27	23	23	73
	Exp	12.7	12.7	12.7	38.0	17.7	17.7	17.7	53.0	24.3	24.3	24.3	73.0
	% WG	12.0%	8.0%	18.0%	12.7%	22.0%	10.0%	21.0%	17.7%	27.0%	23.0%	23.0%	24.3%
	% of T	4.0%	2.7%	6.0%	12.7%	7.3%	3.3%	7.0%	17.7%	9.0%	7.7%	7.7%	24.3%
	Test	Chi-square =26.929; p=.001				Chi-square =21.508; p=.001				Chi-square =14.371; p=.026			

Table No 100 – Showing statistical data of Irritation on Tongue (Tudativacha) at 70% to 90%

Irritation on Tongue (Tudativacha)

Severity	**100%**				
	Group	Adraka	Shunti	Capsicum	Total
0	Count	18	11	5	34
	Exp	11.3	11.3	11.3	34.0
	% WG	18.0%	11.0%	5.0%	11.3%
	% of T	6.0%	3.7%	1.7%	11.3%
+	Count	10	16	9	35
	Exp	11.7	11.7	11.7	35.0
	% WG	10.0%	16.0%	9.0%	11.7%
	% of T	3.3%	5.3%	3.0%	11.7%
++	Count	37	30	54	121
	Exp	40.3	40.3	40.3	121.0
	% WG	37.0%	30.0%	54.0%	40.3%
	% of T	12.3%	10.0%	18.0%	40.3%
+++	Count	35	43	32	110
	Exp	36.7	36.7	36.7	110.0
	% WG	35.0%	43.0%	32.0%	36.7%
	% of T	11.7%	14.3%	10.7%	36.7%
	Test	Chi-square =19.24; p=.004			

Table No 101 – Showing statistical data of Irritation on Tongue (Tudativacha) at 100%



Graph No 25 – Showing comparative statistical data of domain - A faint Taste of 10%, 50% & 100 %

Pricking /Tingling sensation (Chimchimayana)

Severity	Group	10%				20%				30%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	93	98	84	275	91	91	82	264	72	83	67	222
	Exp	91.7	91.7	91.7	275.0	88.0	88.0	88.0	264.0	74.0	74.0	74.0	222.0
	% WG	93.0%	98.0%	84.0%	91.7%	91.0%	91.0%	82.0%	88.0%	72.0%	83.0%	67.0%	74.0%
	% of T	31.0%	32.7%	28.0%	91.7%	30.3%	30.3%	27.3%	88.0%	24.0%	27.7%	22.3%	74.0%
+	Count	7	2	14	23	9	8	17	34	27	13	28	68
	Exp	7.7	7.7	7.7	23.0	11.3	11.3	11.3	34.0	22.7	22.7	22.7	68.0
	% WG	7.0%	2.0%	14.0%	7.7%	9.0%	8.0%	17.0%	11.3%	27.0%	13.0%	28.0%	22.7%
	% of T	2.3%	0.7%	4.7%	7.7%	3.0%	2.7%	5.7%	11.3%	9.0%	4.3%	9.3%	22.7%
++	Count	0	0	2	2	0	1	1	2	1	3	5	9
	Exp	.7	.7	.7	2.0	.7	.7	.7	2.0	3.0	3.0	3.0	9.0
	% WG	0.0%	0.0%	2.0%	0.7%	0.0%	1.0%	1.0%	0.7%	1.0%	3.0%	5.0%	3.0%
	% of T	0.0%	0.0%	0.7%	0.7%	0.0%	0.3%	0.3%	0.7%	0.3%	1.0%	1.7%	3.0%
+++	Count	0	0	0	0	0	0	0	0	0	1	0	1
	Exp	0	0	0	0	0	0	0	0	.3	.3	.3	1.0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	0.0%	1.0%	0.0%	0.3%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	0.0%	0.3%	0.0%	0.3%
	Test	Chi-square =14.576; p=.006				Chi-square =5.908; p=.206				Chi-square =12.683; p=.048			

Table No 102 – Showing statistical data of Pricking /Tingling sensation (Chimchimayana) at 10% to 30%

Pricking /Tingling sensation (Chimchimayana)

Severity	Group	40%				50%				60%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	73	72	57	202	62	57	37	156	62	53	24	139
	Exp	67.3	67.3	67.3	202.0	52.0	52.0	52.0	156.0	46.3	46.3	46.3	139.0
	% WG	73.0%	72.0%	57.0%	67.3%	62.0%	57.0%	37.0%	52.0%	62.0%	53.0%	24.0%	46.3%
	% of T	24.3%	24.0%	19.0%	67.3%	20.7%	19.0%	12.3%	52.0%	20.7%	17.7%	8.0%	46.3%
+	Count	25	19	33	77	27	30	47	104	20	26	45	91
	Exp	25.7	25.7	25.7	77.0	34.7	34.7	34.7	104.0	30.3	30.3	30.3	91.0
	% WG	25.0%	19.0%	33.0%	25.7%	27.0%	30.0%	47.0%	34.7%	20.0%	26.0%	45.0%	30.3%
	% of T	8.3%	6.3%	11.0%	25.7%	9.0%	10.0%	15.7%	34.7%	6.7%	8.7%	15.0%	30.3%
++	Count	2	8	10	20	11	11	14	36	17	17	27	61
	Exp	6.7	6.7	6.7	20.0	12.0	12.0	12.0	36.0	20.3	20.3	20.3	61.0
	% WG	2.0%	8.0%	10.0%	6.7%	11.0%	11.0%	14.0%	12.0%	17.0%	17.0%	27.0%	20.3%
	% of T	0.7%	2.7%	3.3%	6.7%	3.7%	3.7%	4.7%	12.0%	5.7%	5.7%	9.0%	20.3%
+++	Count	0	1	0	1	0	2	2	4	1	4	4	9
	Exp	.3	.3	.3	1.0	1.3	1.3	1.3	4.0	3.0	3.0	3.0	9.0
	% WG	0.0%	1.0%	0.0%	0.3%	0.0%	2.0%	2.0%	1.3%	1.0%	4.0%	4.0%	3.0%
	% of T	0.0%	0.3%	0.0%	0.3%	0.0%	0.7%	0.7%	1.3%	0.3%	1.3%	1.3%	3.0%
	Test	Chi-square =13.43; p=.037				Chi-square =15.942; p=.014				Chi-square =35.53 p=.001			

Table No 103 – Showing statistical data of Pricking /Tingling sensation (Chimchimayana) at 40% to 60%

Pricking /Tingling sensation (Chimchimayana)

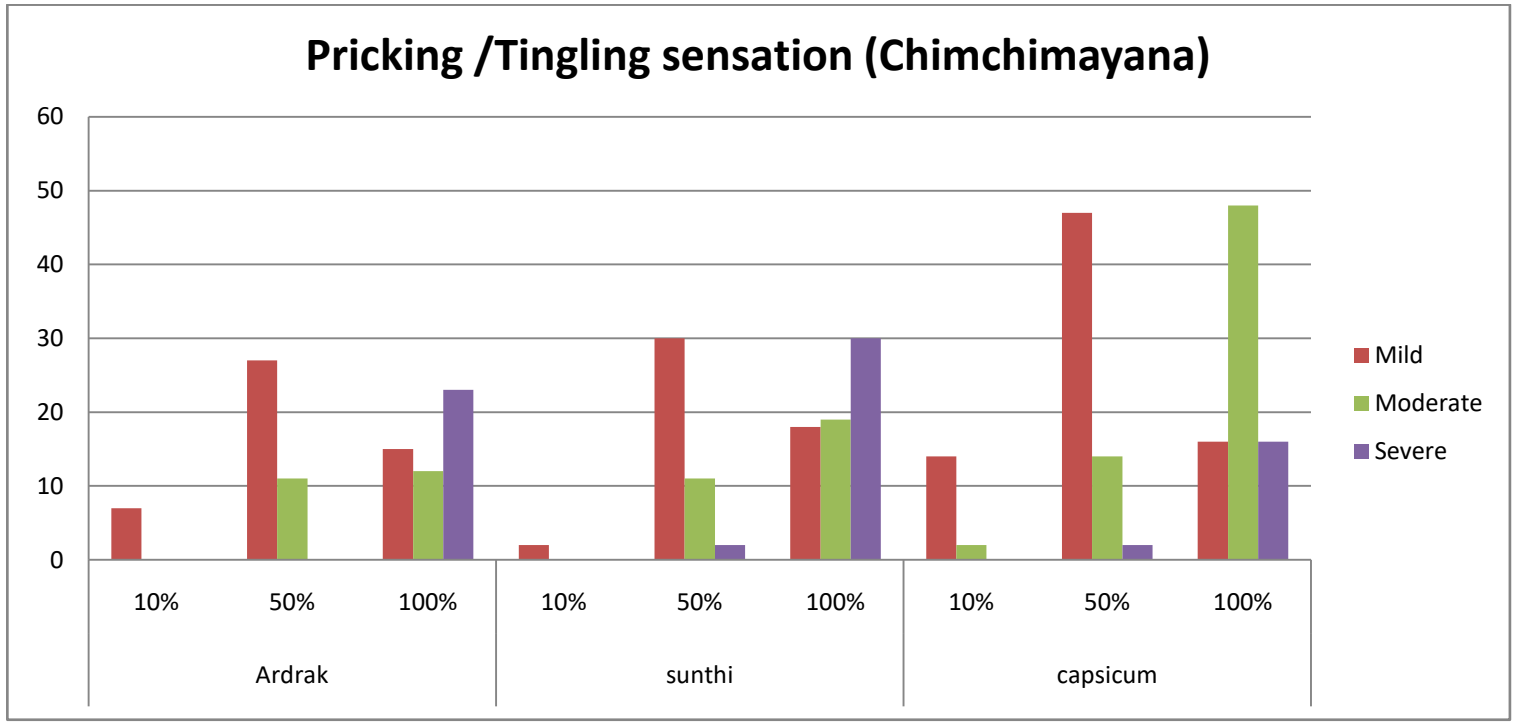
Severity	Group	70%				80%				90%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	56	44	20	120	50	28	19	97	52	28	19	99
	Exp	40.0	40.0	40.0	120.0	32.3	32.3	32.3	97.0	33.0	33.0	33.0	99.0
	% WG	56.0%	44.0%	20.0%	40.0%	50.0%	28.0%	19.0%	32.3%	52.0%	28.0%	19.0%	33.0%
	% of T	18.7%	14.7%	6.7%	40.0%	16.7%	9.3%	6.3%	32.3%	17.3%	9.3%	6.3%	33.0%
+	Count	17	23	38	78	20	32	26	78	16	29	20	65
	Exp	26.0	26.0	26.0	78.0	26.0	26.0	26.0	78.0	21.7	21.7	21.7	65.0
	% WG	17.0%	23.0%	38.0%	26.0%	20.0%	32.0%	26.0%	26.0%	16.0%	29.0%	20.0%	21.7%
	% of T	5.7%	7.7%	12.7%	26.0%	6.7%	10.7%	8.7%	26.0%	5.3%	9.7%	6.7%	21.7%
++	Count	24	29	35	88	24	33	43	100	20	32	47	99
	Exp	29.3	29.3	29.3	88.0	33.3	33.3	33.3	100.0	33.0	33.0	33.0	99.0
	% WG	24.0%	29.0%	35.0%	29.3%	24.0%	33.0%	43.0%	33.3%	20.0%	32.0%	47.0%	33.0%
	% of T	8.0%	9.7%	11.7%	29.3%	8.0%	11.0%	14.3%	33.3%	6.7%	10.7%	15.7%	33.0%
+++	Count	3	4	7	14	6	7	12	25	12	11	14	37
	Exp	4.7	4.7	4.7	14.0	8.3	8.3	8.3	25.0	12.3	12.3	12.3	37.0
	% WG	3.0%	4.0%	7.0%	4.7%	6.0%	7.0%	12.0%	8.3%	12.0%	11.0%	14.0%	12.3%
	% of T	1.0%	1.3%	2.3%	4.7%	2.0%	2.3%	4.0%	8.3%	4.0%	3.7%	4.7%	12.3%
	Test	Chi-square =29.725; p=.001				Chi-square =26.401; p=.001				Chi-square =33.198; p=.001			

Table No 104 – Showing statistical data of Pricking /Tingling sensation (Chimchimayana) at 70% to 90%

Pricking /Tingling sensation (Chimchimayana)

Severity	**100%**				
	Group	Adraka	Shunti	Capsicum	Total
0	Count	50	33	20	103
	Exp	34.3	34.3	34.3	103.0
	% WG	50.0%	33.0%	20.0%	34.3%
	% of T	16.7%	11.0%	6.7%	34.3%
+	Count	15	18	16	49
	Exp	16.3	16.3	16.3	49.0
	% WG	15.0%	18.0%	16.0%	16.3%
	% of T	5.0%	6.0%	5.3%	16.3%
++	Count	12	19	48	79
	Exp	26.3	26.3	26.3	79.0
	% WG	12.0%	19.0%	48.0%	26.3%
	% of T	4.0%	6.3%	16.0%	26.3%
+++	Count	23	30	16	69
	Exp	23.0	23.0	23.0	69.0
	% WG	23.0%	30.0%	16.0%	23.0%
	% of T	7.7%	10.0%	5.3%	23.0%
	Test	Chi-square =45.402; p=.001			

Table No 105 – Showing statistical data of Pricking /Tingling sensation (Chimchimayana) at 100%



Graph No 26 – Showing comparative statistical data of domain - Pricking /Tingling sensation (Chimchimayana) at 10%,50% & 100 %

Burning sensation in Mouth /Chest (Daha)

Severity	Group	10%				20%				30%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	88	94	89	271	80	89	74	243	64	83	68	215
	Exp	90.3	90.3	90.3	271.0	81.0	81.0	81.0	243.0	71.7	71.7	71.7	215.0
	% WG	88.0%	94.0%	89.0%	90.3%	80.0%	89.0%	74.0%	81.0%	64.0%	83.0%	68.0%	71.7%
	% of T	29.3%	31.3%	29.7%	90.3%	26.7%	29.7%	24.7%	81.0%	21.3%	27.7%	22.7%	71.7%
+	Count	12	6	10	28	19	11	21	51	28	14	21	63
	Exp	9.3	9.3	9.3	28.0	17.0	17.0	17.0	51.0	21.0	21.0	21.0	63.0
	% WG	12.0%	6.0%	10.0%	9.3%	19.0%	11.0%	21.0%	17.0%	28.0%	14.0%	21.0%	21.0%
	% of T	4.0%	2.0%	3.3%	9.3%	6.3%	3.7%	7.0%	17.0%	9.3%	4.7%	7.0%	21.0%
++	Count	0	0	1	1	1	0	5	6	7	2	11	20
	Exp	.3	.3	.3	1.0	2.0	2.0	2.0	6.0	6.7	6.7	6.7	20.0
	% WG	0.0%	0.0%	1.0%	0.3%	1.0%	0.0%	5.0%	2.0%	7.0%	2.0%	11.0%	6.7%
	% of T	0.0%	0.0%	0.3%	0.3%	0.3%	0.0%	1.7%	2.0%	2.3%	0.7%	3.7%	6.7%
+++	Count	0	0	0	0	0	0	0	0	1	1	0	2
	Exp	0	0	0	0	0	0	0	0	.7	.7	.7	2.0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	1.0%	1.0%	0.0%	0.7%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	0.3%	0.3%	0.0%	0.7%
	Test	Chi-square =4.229; p=..376				Chi-square =11.702; p=.020				Chi-square =14.567; p=.024			

Table No 106 – Showing statistical data of Burning sensation in Mouth /Chest (Daha) at 10% to 30%

Burning sensation in Mouth /Chest (Daha)

Severity	Group	40%				50%				60%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	50	69	50	169	33	65	29	127	24	52	17	93
	Exp	56.3	56.3	56.3	169.0	42.3	42.3	42.3	127.0	31.0	31.0	31.0	93.0
	% WG	50.0%	69.0%	50.0%	56.3%	33.0%	65.0%	29.0%	42.3%	24.0%	52.0%	17.0%	31.0%
	% of T	16.7%	23.0%	16.7%	56.3%	11.0%	21.7%	9.7%	42.3%	8.0%	17.3%	5.7%	31.0%
+	Count	36	22	35	93	41	24	43	108	41	26	51	118
	Exp	31.0	31.0	31.0	93.0	36.0	36.0	36.0	108.0	39.3	39.3	39.3	118.0
	% WG	36.0%	22.0%	35.0%	31.0%	41.0%	24.0%	43.0%	36.0%	41.0%	26.0%	51.0%	39.3%
	% of T	12.0%	7.3%	11.7%	31.0%	13.7%	8.0%	14.3%	36.0%	13.7%	8.7%	17.0%	39.3%
++	Count	12	8	13	33	25	7	26	58	32	18	26	76
	Exp	11.0	11.0	11.0	33.0	19.3	19.3	19.3	58.0	25.3	25.3	25.3	76.0
	% WG	12.0%	8.0%	13.0%	11.0%	25.0%	7.0%	26.0%	19.3%	32.0%	18.0%	26.0%	25.3%
	% of T	4.0%	2.7%	4.3%	11.0%	8.3%	2.3%	8.7%	19.3%	10.7%	6.0%	8.7%	25.3%
+++	Count	2	1	2	5	1	4	2	7	3	4	6	13
	Exp	1.7	1.7	1.7	5.0	2.3	2.3	2.3	7.0	4.3	4.3	4.3	13.0
	% WG	2.0%	1.0%	2.0%	1.7%	1.0%	4.0%	2.0%	2.3%	3.0%	4.0%	6.0%	4.3%
	% of T	0.7%	0.3%	0.7%	1.7%	0.3%	1.3%	0.7%	2.3%	1.0%	1.3%	2.0%	4.3%
	Test	Chi-square =9.880; p=0.130				Chi-square =38.277; p=.001				Chi-square =35.152 p=.001			

Table No 107– Showing statistical data of Burning sensation in Mouth /Chest (Daha) at 40% to 60%

Burning sensation in Mouth /Chest (Daha)

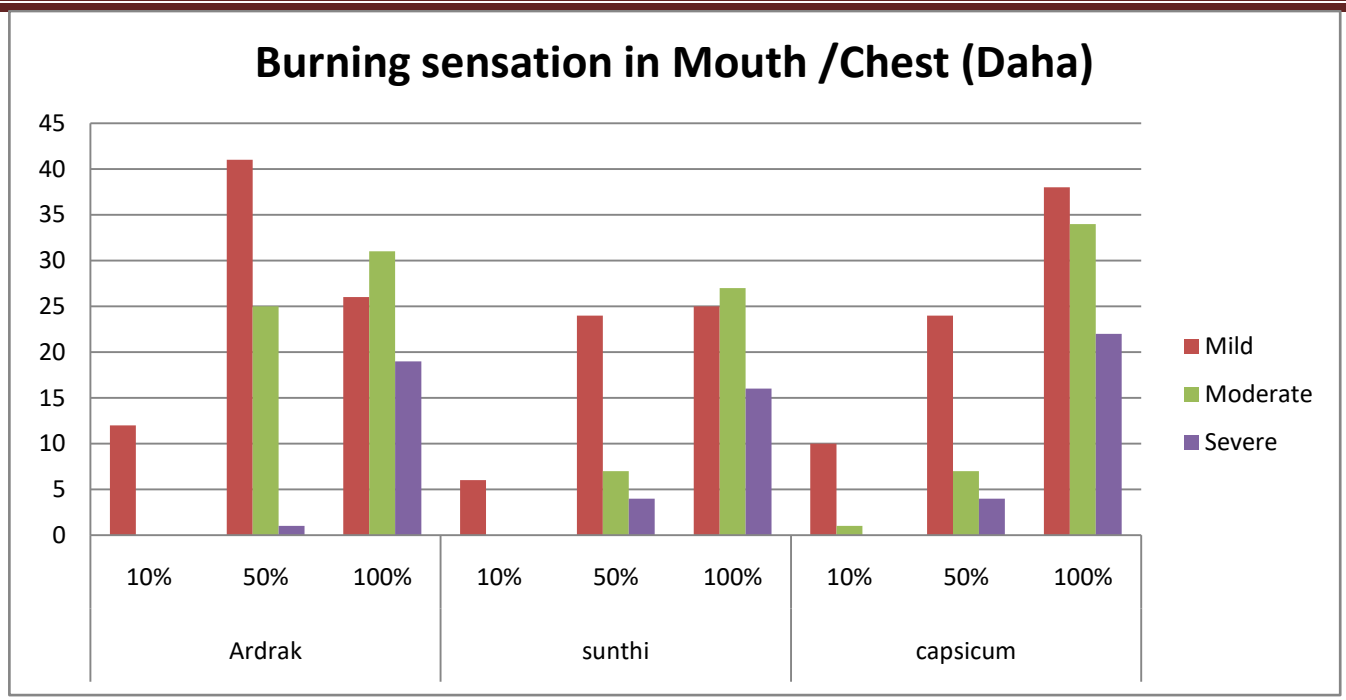
Severity	Group	70%				80%				90%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	30	53	8	91	23	47	8	78	14	37	3	54
	Exp	30.3	30.3	30.3	91.0	26.0	26.0	26.0	78.0	18.0	18.0	18.0	54.0
	% WG	30.0%	53.0%	8.0%	30.3%	23.0%	47.0%	8.0%	26.0%	14.0%	37.0%	3.0%	18.0%
	% of T	10.0%	17.7%	2.7%	30.3%	7.7%	15.7%	2.7%	26.0%	4.7%	12.3%	1.0%	18.0%
+	Count	34	22	56	112	33	22	45	100	31	25	48	104
	Exp	37.3	37.3	37.3	112.0	33.3	33.3	33.3	100.0	34.7	34.7	34.7	104.0
	% WG	34.0%	22.0%	56.0%	37.3%	33.0%	22.0%	45.0%	33.3%	31.0%	25.0%	48.0%	34.7%
	% of T	11.3%	7.3%	18.7%	37.3%	11.0%	7.3%	15.0%	33.3%	10.3%	8.3%	16.0%	34.7%
++	Count	28	20	25	73	36	22	29	87	37	23	27	87
	Exp	24.3	24.3	24.3	73.0	29.0	29.0	29.0	87.0	29.0	29.0	29.0	87.0
	% WG	28.0%	20.0%	25.0%	24.3%	36.0%	22.0%	29.0%	29.0%	37.0%	23.0%	27.0%	29.0%
	% of T	9.3%	6.7%	8.3%	24.3%	12.0%	7.3%	9.7%	29.0%	12.3%	7.7%	9.0%	29.0%
+++	Count	8	5	11	24	8	9	18	35	18	15	22	55
	Exp	8.0	8.0	8.0	24.0	11.7	11.7	11.7	35.0	18.3	18.3	18.3	55.0
	% WG	8.0%	5.0%	11.0%	8.0%	8.0%	9.0%	18.0%	11.7%	18.0%	15.0%	22.0%	18.3%
	% of T	2.7%	1.7%	3.7%	8.0%	2.7%	3.0%	6.0%	11.7%	6.0%	5.0%	7.3%	18.3%
	Test	Chi-square =52.906; p=.001				Chi-square =46.289; p=.001				Chi-square =46.588; p=.001			

Table No 108 – Showing statistical data of Burning sensation in Mouth /Chest (Daha) at 70% to 90%

Burning sensation in Mouth /Chest (Daha)

Severity	**100%**				
	Group	Adraka	Shunti	Capsicum	Total
0	Count	24	32	6	62
	Exp	20.7	20.7	20.7	62.0
	% WG	24.0%	32.0%	6.0%	20.7%
	% of T	8.0%	10.7%	2.0%	20.7%
+	Count	26	25	38	89
	Exp	29.7	29.7	29.7	89.0
	% WG	26.0%	25.0%	38.0%	29.7%
	% of T	8.7%	8.3%	12.7%	29.7%
++	Count	31	27	34	92
	Exp	30.7	30.7	30.7	92.0
	% WG	31.0%	27.0%	34.0%	30.7%
	% of T	10.3%	9.0%	11.3%	30.7%
+++	Count	19	16	22	57
	Exp	19.0	19.0	19.0	57.0
	% WG	19.0%	16.0%	22.0%	19.0%
	% of T	6.3%	5.3%	7.3%	19.0%
	Test	Chi-square =22.44; p=.001			

Table No 109 – Showing statistical data of Burning sensation in Mouth /Chest (Daha) at 100%



Graph No 27 – Showing comparative statistical data of domain - Burning sensation in Mouth /Chest (Daha) at 10%,50% & 100 %

Secretions through mouth nose and eye (Chakshurvirechayati)

Severity	Group	10%				20%				30%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	99	98	100	297	99	98	99	296	97	96	94	287
	Exp	99.0	99.0	99.0	297.0	98.7	98.7	98.7	296.0	95.7	95.7	95.7	287.0
	% WG	99.0%	98.0%	100.0%	99.0%	99.0%	98.0%	99.0%	98.7%	97.0%	96.0%	94.0%	95.7%
	% of T	33.0%	32.7%	33.3%	99.0%	33.0%	32.7%	33.0%	98.7%	32.3%	32.0%	31.3%	95.7%
+	Count	1	2	0	3	1	2	1	4	3	3	6	12
	Exp	1.0	1.0	1.0	3.0	1.3	1.3	1.3	4.0	4.0	4.0	4.0	12.0
	% WG	1.0%	2.0%	0.0%	1.0%	1.0%	2.0%	1.0%	1.3%	3.0%	3.0%	6.0%	4.0%
	% of T	0.3%	0.7%	0.0%	1.0%	0.3%	0.7%	0.3%	1.3%	1.0%	1.0%	2.0%	4.0%
++	Count	0	0	0	0	0	0	0	0	0	1	0	1
	Exp	0	0	0	0	0	0	0	0	.3	.3	.3	1.0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	0.0%	1.0%	0.0%	0.3%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	0.0%	0.3%	0.0%	0.3%
+++	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	Test	Chi-square =2.020; p=..364				Chi-square =.507; p=.776				Chi-square =3.549; p=.471			

Table No 110 – Showing statistical data of Secretions through mouth, nose and eye (Chakshurvirechayati) at 10% to 30%

Secretions through mouth nose and eye (Chakshurvirechayati)

Severity	Group	40%				50%				60%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	95	94	88	277	96	92	74	262	92	89	53	234
	Exp	92.3	92.3	92.3	277.0	87.3	87.3	87.3	262.0	78.0	78.0	78.0	234.0
	% WG	95.0%	94.0%	88.0%	92.3%	96.0%	92.0%	74.0%	87.3%	92.0%	89.0%	53.0%	78.0%
	% of T	31.7%	31.3%	29.3%	92.3%	32.0%	30.7%	24.7%	87.3%	30.7%	29.7%	17.7%	78.0%
+	Count	4	3	7	14	2	4	15	21	5	7	29	41
	Exp	4.7	4.7	4.7	14.0	7.0	7.0	7.0	21.0	13.7	13.7	13.7	41.0
	% WG	4.0%	3.0%	7.0%	4.7%	2.0%	4.0%	15.0%	7.0%	5.0%	7.0%	29.0%	13.7%
	% of T	1.3%	1.0%	2.3%	4.7%	0.7%	1.3%	5.0%	7.0%	1.7%	2.3%	9.7%	13.7%
++	Count	1	3	5	9	2	2	11	15	3	2	17	22
	Exp	3.0	3.0	3.0	9.0	5.0	5.0	5.0	15.0	7.3	7.3	7.3	22.0
	% WG	1.0%	3.0%	5.0%	3.0%	2.0%	2.0%	11.0%	5.0%	3.0%	2.0%	17.0%	7.3%
	% of T	0.3%	1.0%	1.7%	3.0%	0.7%	0.7%	3.7%	5.0%	1.0%	0.7%	5.7%	7.3%
+++	Count	0	0	0	0	0	2	0	2	0	2	1	3
	Exp	0	0	0	0	.7	.7	.7	2.0	1.0	1.0	1.0	3.0
	% WG	.0%	.0%	.0%	.0%	0.0%	2.0%	0.0%	0.7%	0.0%	2.0%	1.0%	1.0%
	% of T	.0%	.0%	.0%	.0%	0.0%	0.7%	0.0%	0.7%	0.0%	0.7%	0.3%	1.0%
	Test	Chi-square =4.834; p=0.305				Chi-square =31.945; p=.001				Chi-square =59.210 p=.001			

Table No 111 – Showing statistical data of Secretions through mouth nose and eye (Chakshurvirechayati) at 40% to 60%

Secretions through mouth, nose and eye (Chakshurvirechayati)

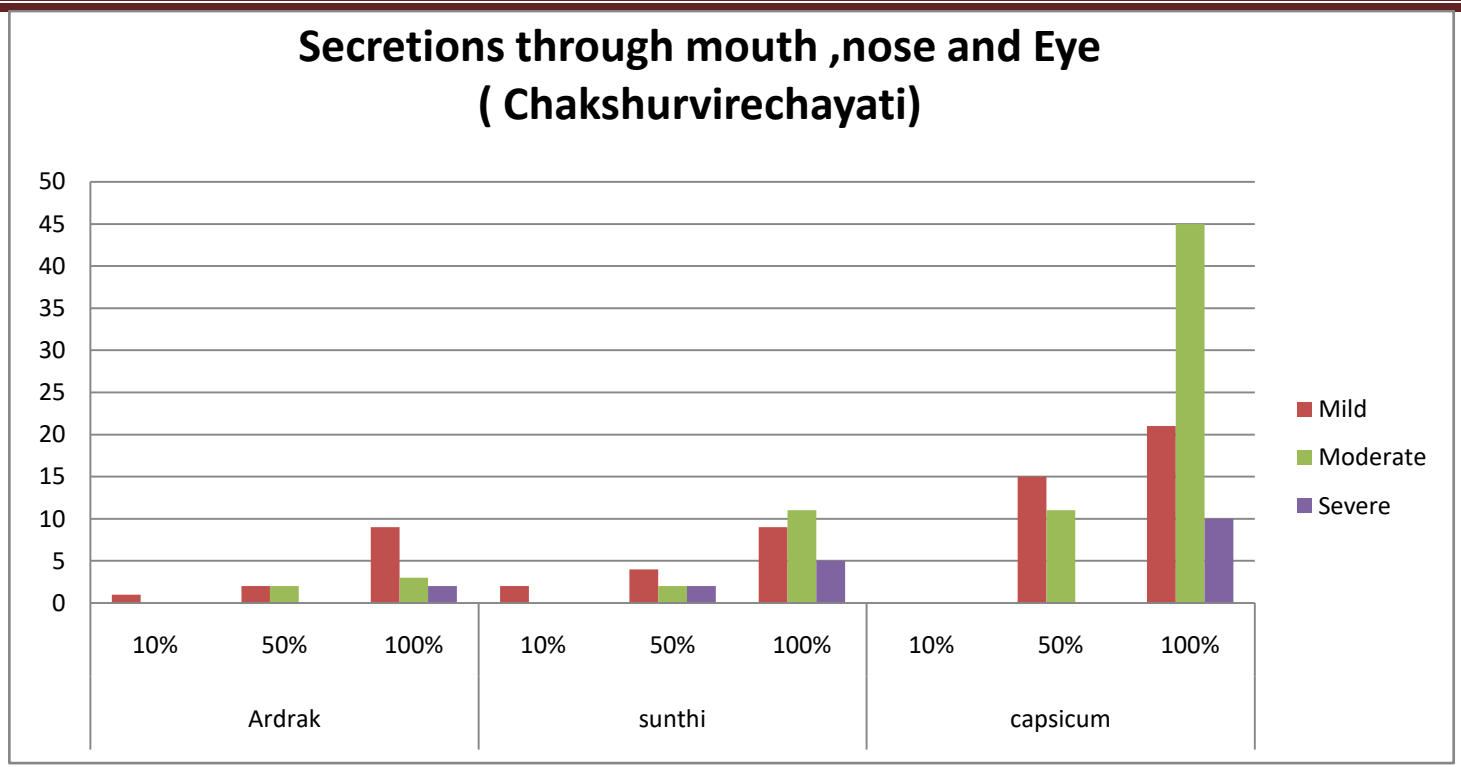
Severity	Group	70%				80%				90%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	89	88	36	213	90	80	27	197	86	78	23	187
	Exp	71.0	71.0	71.0	213.0	65.7	65.7	65.7	197.0	62.3	62.3	62.3	187.0
	% WG	89.0%	88.0%	36.0%	71.0%	90.0%	80.0%	27.0%	65.7%	86.0%	78.0%	23.0%	62.3%
	% of T	29.7%	29.3%	12.0%	71.0%	30.0%	26.7%	9.0%	65.7%	28.7%	26.0%	7.7%	62.3%
+	Count	7	7	32	46	9	13	35	57	12	10	31	53
	Exp	15.3	15.3	15.3	46.0	19.0	19.0	19.0	57.0	17.7	17.7	17.7	53.0
	% WG	7.0%	7.0%	32.0%	15.3%	9.0%	13.0%	35.0%	19.0%	12.0%	10.0%	31.0%	17.7%
	% of T	2.3%	2.3%	10.7%	15.3%	3.0%	4.3%	11.7%	19.0%	4.0%	3.3%	10.3%	17.7%
++	Count	4	4	28	36	0	4	36	40	1	8	39	48
	Exp	12.0	12.0	12.0	36.0	13.3	13.3	13.3	40.0	16.0	16.0	16.0	48.0
	% WG	4.0%	4.0%	28.0%	12.0%	0.0%	4.0%	36.0%	13.3%	1.0%	8.0%	39.0%	16.0%
	% of T	1.3%	1.3%	9.3%	12.0%	0.0%	1.3%	12.0%	13.3%	0.3%	2.7%	13.0%	16.0%
+++	Count	0	1	4	5	1	3	2	6	1	4	7	12
	Exp	1.7	1.7	1.7	5.0	2.0	2.0	2.0	6.0	4.0	4.0	4.0	12.0
	% WG	0.0%	1.0%	4.0%	1.7%	1.0%	3.0%	2.0%	2.0%	1.0%	4.0%	7.0%	4.0%
	% of T	0.0%	0.3%	1.3%	1.7%	0.3%	1.0%	0.7%	2.0%	0.3%	1.3%	2.3%	4.0%
	Test	Chi-square =90.26; p=.001				Chi-square =114.945; p=.001				Chi-square =108.57; p=.001			

Table No 112 – Showing statistical data of Secretions through mouth, nose and eye (Chakshurvirechayati) at 70% to 90%

Secretions through mouth nose and eye (Chakshurvirechayati)

Severity	**100%**				
	Group	Adraka	Shunti	Capsicum	Total
0	Count	86	75	24	185
	Exp	61.7	61.7	61.7	185.0
	% WG	86.0%	75.0%	24.0%	61.7%
	% of T	28.7%	25.0%	8.0%	61.7%
+	Count	9	9	21	39
	Exp	13.0	13.0	13.0	39.0
	% WG	9.0%	9.0%	21.0%	13.0%
	% of T	3.0%	3.0%	7.0%	13.0%
++	Count	3	11	45	59
	Exp	19.7	19.7	19.7	59.0
	% WG	3.0%	11.0%	45.0%	19.7%
	% of T	1.0%	3.7%	15.0%	19.7%
+++	Count	2	5	10	17
	Exp	5.7	5.7	5.7	17.0
	% WG	2.0%	5.0%	10.0%	5.7%
	% of T	0.7%	1.7%	3.3%	5.7%
	Test	Chi-square =99.217; p=.001			

Table No 113 – Showing statistical data of Secretions through mouth, nose and eye (Chakshurvirechayati) at 100%



Graph No 28 –Showing comparative statistical data of domain-Secretions through mouth nose and eye (Chakshurvirechayati) at 10%, 50% & 100%

Burning sensation in chest and abdomen (Vidahati deham)

Severity	Group	10%				20%				30%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	97	100	100	297	96	100	99	295	93	97	97	287
	Exp	99.0	99.0	99.0	297.0	98.3	98.3	98.3	295.0	95.7	95.7	95.7	287.0
	% WG	97.0%	100.0%	100.0%	99.0%	96.0%	100.0%	99.0%	98.3%	93.0%	97.0%	97.0%	95.7%
	% of T	32.3%	33.3%	33.3%	99.0%	32.0%	33.3%	33.0%	98.3%	31.0%	32.3%	32.3%	95.7%
+	Count	3	0	0	3	3	0	1	4	6	3	3	12
	Exp	1.0	1.0	1.0	3.0	1.3	1.3	1.3	4.0	4.0	4.0	4.0	12.0
	% WG	3.0%	0.0%	0.0%	1.0%	3.0%	0.0%	1.0%	1.3%	6.0%	3.0%	3.0%	4.0%
	% of T	1.0%	0.0%	0.0%	1.0%	1.0%	0.0%	0.3%	1.3%	2.0%	1.0%	1.0%	4.0%
++	Count	0	0	0	0	1	0	0	1	1	0	0	1
	Exp	0	0	0	0	.3	.3	.3	1.0	.3	.3	.3	1.0
	% WG	.0%	.0%	.0%	.0%	1.0%	0.0%	0.0%	0.3%	1.0%	0.0%	0.0%	0.3%
	% of T	.0%	.0%	.0%	.0%	0.3%	0.0%	0.0%	0.3%	0.3%	0.0%	0.0%	0.3%
+++	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	Test	Chi-square =6.06; p=..048				Chi-square =5.588 p=.232				Chi-square =3.611; p=.461			

Table No 114 – Showing statistical data of burning sensation in chest and abdomen (Vidahati deham) at 10% to 30%

Burning sensation in chest and abdomen (Vidahati deham)

Severity	Group	40%				50%				60%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	85	90	92	267	84	84	68	236	80	83	50	213
	Exp	89.0	89.0	89.0	267.0	78.7	78.7	78.7	236.0	71.0	71.0	71.0	213.0
	% WG	85.0%	90.0%	92.0%	89.0%	84.0%	84.0%	68.0%	78.7%	80.0%	83.0%	50.0%	71.0%
	% of T	28.3%	30.0%	30.7%	89.0%	28.0%	28.0%	22.7%	78.7%	26.7%	27.7%	16.7%	71.0%
+	Count	11	8	6	25	12	11	27	50	13	8	41	62
	Exp	8.3	8.3	8.3	25.0	16.7	16.7	16.7	50.0	20.7	20.7	20.7	62.0
	% WG	11.0%	8.0%	6.0%	8.3%	12.0%	11.0%	27.0%	16.7%	13.0%	8.0%	41.0%	20.7%
	% of T	3.7%	2.7%	2.0%	8.3%	4.0%	3.7%	9.0%	16.7%	4.3%	2.7%	13.7%	20.7%
++	Count	4	1	2	7	4	4	5	13	7	8	9	24
	Exp	2.3	2.3	2.3	7.0	4.3	4.3	4.3	13.0	8.0	8.0	8.0	24.0
	% WG	4.0%	1.0%	2.0%	2.3%	4.0%	4.0%	5.0%	4.3%	7.0%	8.0%	9.0%	8.0%
	% of T	1.3%	0.3%	0.7%	2.3%	1.3%	1.3%	1.7%	4.3%	2.3%	2.7%	3.0%	8.0%
+++	Count	0	1	0	1	0	1	0	1	0	1	0	1
	Exp	.3	.3	.3	1.0	.3	.3	.3	1.0	.3	.3	.3	1.0
	% WG	0.0%	1.0%	0.0%	0.3%	0.0%	1.0%	0.0%	0.3%	0.0%	1.0%	0.0%	0.3%
	% of T	0.0%	0.3%	0.0%	0.3%	0.0%	0.3%	0.0%	0.3%	0.0%	0.3%	0.0%	0.3%
	Test	Chi-square =5.812; p=0.445				Chi-square =13.963; p=.030				Chi-square =42.24 p=.001			

Table No 115 – Showing statistical data of burning sensation in chest and abdomen (Vidahati deham) at 40% to 60%

Burning sensation in chest and abdomen (Vidahati deham)

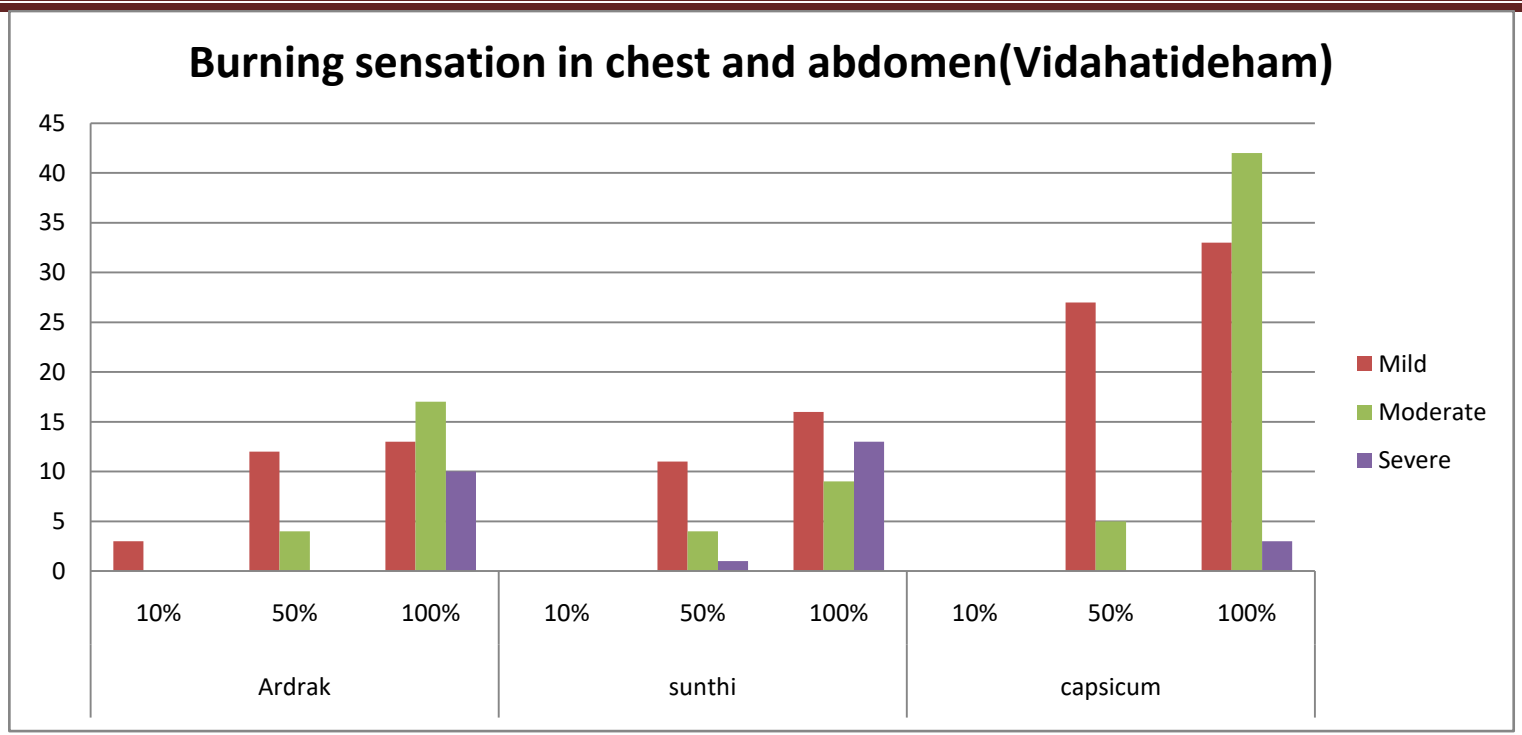
Severity	Group	70%				80%				90%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	76	77	41	194	71	70	25	166	68	67	23	158
	Exp	64.7	64.7	64.7	194.0	55.3	55.3	55.3	166.0	52.7	52.7	52.7	158.0
	% WG	76.0%	77.0%	41.0%	64.7%	71.0%	70.0%	25.0%	55.3%	68.0%	67.0%	23.0%	52.7%
	% of T	25.3%	25.7%	13.7%	64.7%	23.7%	23.3%	8.3%	55.3%	22.7%	22.3%	7.7%	52.7%
+	Count	12	10	46	68	12	13	43	68	10	13	38	61
	Exp	22.7	22.7	22.7	68.0	22.7	22.7	22.7	68.0	20.3	20.3	20.3	61.0
	% WG	12.0%	10.0%	46.0%	22.7%	12.0%	13.0%	43.0%	22.7%	10.0%	13.0%	38.0%	20.3%
	% of T	4.0%	3.3%	15.3%	22.7%	4.0%	4.3%	14.3%	22.7%	3.3%	4.3%	12.7%	20.3%
++	Count	11	11	11	33	13	12	28	53	16	14	35	65
	Exp	11.0	11.0	11.0	33.0	17.7	17.7	17.7	53.0	21.7	21.7	21.7	65.0
	% WG	11.0%	11.0%	11.0%	11.0%	13.0%	12.0%	28.0%	17.7%	16.0%	14.0%	35.0%	21.7%
	% of T	3.7%	3.7%	3.7%	11.0%	4.3%	4.0%	9.3%	17.7%	5.3%	4.7%	11.7%	21.7%
+++	Count	1	2	2	5	4	5	4	13	6	6	4	16
	Exp	1.7	1.7	1.7	5.0	4.3	4.3	4.3	13.0	5.3	5.3	5.3	16.0
	% WG	1.0%	2.0%	2.0%	1.7%	4.0%	5.0%	4.0%	4.3%	6.0%	6.0%	4.0%	5.3%
	% of T	0.3%	0.7%	0.7%	1.7%	1.3%	1.7%	1.3%	4.3%	2.0%	2.0%	1.3%	5.3%
	Test	Chi-square =49.518; p=.001				Chi-square =61.58; p=.001				Chi-square =61.22; p=.001			

Table No 116 – Showing statistical data of burning sensation in chest and abdomen (Vidahati deham) at 70% to 90%

Burning sensation in chest and abdomen (Vidahati deham)

Severity	**100%**				
	Group	Adraka	Shunti	Capsicum	Total
0	Count	60	62	22	144
	Exp	48.0	48.0	48.0	144.0
	% WG	60.0%	62.0%	22.0%	48.0%
	% of T	20.0%	20.7%	7.3%	48.0%
+	Count	13	16	33	62
	Exp	20.7	20.7	20.7	62.0
	% WG	13.0%	16.0%	33.0%	20.7%
	% of T	4.3%	5.3%	11.0%	20.7%
++	Count	17	9	42	68
	Exp	22.7	22.7	22.7	68.0
	% WG	17.0%	9.0%	42.0%	22.7%
	% of T	5.7%	3.0%	14.0%	22.7%
+++	Count	10	13	3	26
	Exp	8.7	8.7	8.7	26.0
	% WG	10.0%	13.0%	3.0%	8.7%
	% of T	3.3%	4.3%	1.0%	8.7%
	Test	Chi-square =64.649; p=.001			

Table No 117 – Showing statistical data of burning sensation in chest and abdomen (Vidahati deham) at 100%



Graph No 29 – Showing comparative statistical data of domain- Burning sensation in chest and abdomen (Vidahati deham) at 10%, 50% & 100%

Irritation in the nasopharangeal region (Kanta and Shiropradesha)

Severity	Group	10%				20%				30%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	95	99	93	287	89	95	90	274	86	90	87	263
	Exp	95.7	95.7	95.7	287.0	91.3	91.3	91.3	274.0	87.7	87.7	87.7	263.0
	% WG	95.0%	99.0%	93.0%	95.7%	89.0%	95.0%	90.0%	91.3%	86.0%	90.0%	87.0%	87.7%
	% of T	31.7%	33.0%	31.0%	95.7%	29.7%	31.7%	30.0%	91.3%	28.7%	30.0%	29.0%	87.7%
+	Count	5	1	7	13	11	5	10	26	10	7	11	28
	Exp	4.3	4.3	4.3	13.0	8.7	8.7	8.7	26.0	9.3	9.3	9.3	28.0
	% WG	5.0%	1.0%	7.0%	4.3%	11.0%	5.0%	10.0%	8.7%	10.0%	7.0%	11.0%	9.3%
	% of T	1.7%	0.3%	2.3%	4.3%	3.7%	1.7%	3.3%	8.7%	3.3%	2.3%	3.7%	9.3%
++	Count	0	0	0	0	0	0	0	0	4	3	2	9
	Exp	0	0	0	0	0	0	0	0	3.0	3.0	3.0	9.0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	4.0%	3.0%	2.0%	3.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	1.3%	1.0%	0.7%	3.0%
+++	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	Test	Chi-square= 4.50; p=..105				Chi-square=2.61 p=.271				Chi-square =1.69; p=.792			

Table No 118 – Showing statistical data of Irritation in the nasopharangeal region (Kanta and Shiropradesha) at 10% to 30%

Irritation in the nasopharangeal region (Kanta and Shiropradesha)

Severity	Group	40%				50%				60%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	79	86	82	247	72	83	58	213	68	80	46	194
	Exp	82.3	82.3	82.3	247.0	71.0	71.0	71.0	213.0	64.7	64.7	64.7	194.0
	% WG	79.0%	86.0%	82.0%	82.3%	72.0%	83.0%	58.0%	71.0%	68.0%	80.0%	46.0%	64.7%
	% of T	26.3%	28.7%	27.3%	82.3%	24.0%	27.7%	19.3%	71.0%	22.7%	26.7%	15.3%	64.7%
+	Count	17	7	12	36	18	10	35	63	22	8	37	67
	Exp	12.0	12.0	12.0	36.0	21.0	21.0	21.0	63.0	22.3	22.3	22.3	67.0
	% WG	17.0%	7.0%	12.0%	12.0%	18.0%	10.0%	35.0%	21.0%	22.0%	8.0%	37.0%	22.3%
	% of T	5.7%	2.3%	4.0%	12.0%	6.0%	3.3%	11.7%	21.0%	7.3%	2.7%	12.3%	22.3%
++	Count	3	7	6	16	6	6	4	16	8	9	15	32
	Exp	5.3	5.3	5.3	16.0	5.3	5.3	5.3	16.0	10.7	10.7	10.7	32.0
	% WG	3.0%	7.0%	6.0%	5.3%	6.0%	6.0%	4.0%	5.3%	8.0%	9.0%	15.0%	10.7%
	% of T	1.0%	2.3%	2.0%	5.3%	2.0%	2.0%	1.3%	5.3%	2.7%	3.0%	5.0%	10.7%
+++	Count	1	0	0	1	4	1	3	8	2	3	2	7
	Exp	.3	.3	.3	1.0	2.7	2.7	2.7	8.0	2.3	2.3	2.3	7.0
	% WG	1.0%	0.0%	0.0%	0.3%	4.0%	1.0%	3.0%	2.7%	2.0%	3.0%	2.0%	2.3%
	% of T	0.3%	0.0%	0.0%	0.3%	1.3%	0.3%	1.0%	2.7%	0.7%	1.0%	0.7%	2.3%
	Test	Chi-square =8.091; p=0.231				Chi-square =22.19: p=.001				Chi-square =31.00: p=.001			

Table No 119 – Showing statistical data of Irritation in the nasopharangeal region (Kanta and Shiropradesha) at 40% to 60%

Irritation in the nasopharangeal region (Kanta and Shiropradesha)

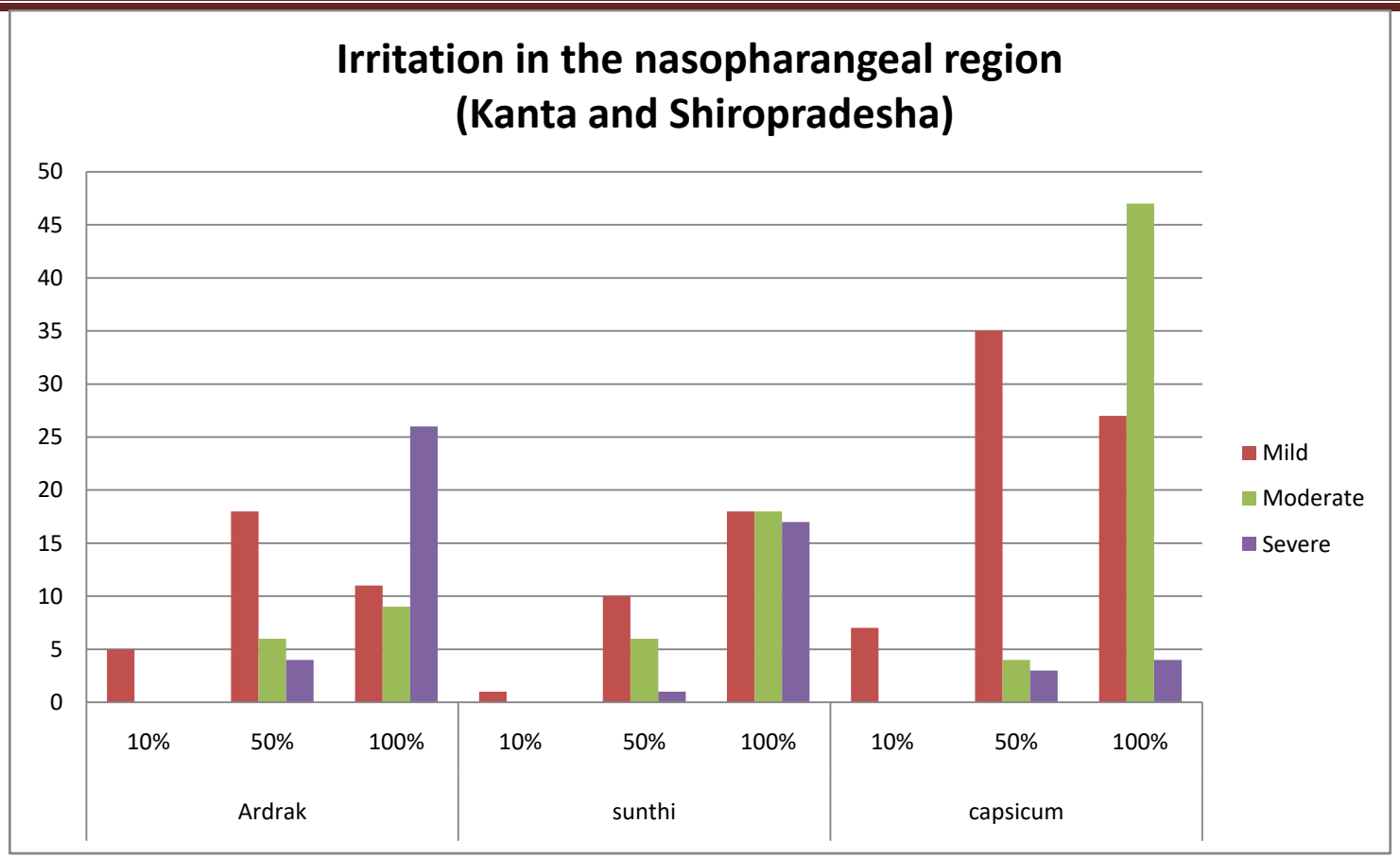
Severity	Group	70%				80%				90%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	62	68	36	166	57	58	24	139	59	44	20	123
	Exp	55.3	55.3	55.3	166.0	46.3	46.3	46.3	139.0	41.0	41.0	41.0	123.0
	% WG	62.0%	68.0%	36.0%	55.3%	57.0%	58.0%	24.0%	46.3%	59.0%	44.0%	20.0%	41.0%
	% of T	20.7%	22.7%	12.0%	55.3%	19.0%	19.3%	8.0%	46.3%	19.7%	14.7%	6.7%	41.0%
+	Count	10	17	36	63	17	20	40	77	10	25	32	67
	Exp	21.0	21.0	21.0	63.0	25.7	25.7	25.7	77.0	22.3	22.3	22.3	67.0
	% WG	10.0%	17.0%	36.0%	21.0%	17.0%	20.0%	40.0%	25.7%	10.0%	25.0%	32.0%	22.3%
	% of T	3.3%	5.7%	12.0%	21.0%	5.7%	6.7%	13.3%	25.7%	3.3%	8.3%	10.7%	22.3%
++	Count	22	11	26	59	16	12	33	61	18	23	44	85
	Exp	19.7	19.7	19.7	59.0	20.3	20.3	20.3	61.0	28.3	28.3	28.3	85.0
	% WG	22.0%	11.0%	26.0%	19.7%	16.0%	12.0%	33.0%	20.3%	18.0%	23.0%	44.0%	28.3%
	% of T	7.3%	3.7%	8.7%	19.7%	5.3%	4.0%	11.0%	20.3%	6.0%	7.7%	14.7%	28.3%
+++	Count	6	4	2	12	9	10	3	22	13	8	4	25
	Exp	4.0	4.0	4.0	12.0	7.3	7.3	7.3	22.0	8.3	8.3	8.3	25.0
	% WG	6.0%	4.0%	2.0%	4.0%	9.0%	10.0%	3.0%	7.3%	13.0%	8.0%	4.0%	8.3%
	% of T	2.0%	1.3%	0.7%	4.0%	3.0%	3.3%	1.0%	7.3%	4.3%	2.7%	1.3%	8.3%
	Test	Chi-square =35.83; p=.001				Chi-square =61.58; p=.001				Chi-square =48.50; p=.001			

Table No 120– Showing statistical data of Irritation in the nasopharangeal region (Kanta and Shiropradesha) at 70% to 90%

Irritation in the nasopharangeal region (Kanta and Shiropradesha)

Severity	**100%**				
	Group	Adraka	Shunti	Capsicum	Total
0	Count	54	47	22	123
	Exp	41.0	41.0	41.0	123.0
	% WG	54.0%	47.0%	22.0%	41.0%
	% of T	18.0%	15.7%	7.3%	41.0%
+	Count	11	18	27	56
	Exp	18.7	18.7	18.7	56.0
	% WG	11.0%	18.0%	27.0%	18.7%
	% of T	3.7%	6.0%	9.0%	18.7%
++	Count	9	18	47	74
	Exp	24.7	24.7	24.7	74.0
	% WG	9.0%	18.0%	47.0%	24.7%
	% of T	3.0%	6.0%	15.7%	24.7%
+++	Count	26	17	4	47
	Exp	15.7	15.7	15.7	47.0
	% WG	26.0%	17.0%	4.0%	15.7%
	% of T	8.7%	5.7%	1.3%	15.7%
	Test	Chi-square =68.28; p=.001			

Table No 121 – Showing statistical data of Irritation in the nasopharangeal region (Kanta and Shiropradesha) at 100%



Graph No 30 – Showing comparative statistical data of domain- Irritation in the nasopharangeal region (Kanta and Shiropradesha) at 10%, 50% & 100%

Excessive salivation (Aasya Sravana)

Severity	Group	10%				20%				30%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	90	94	98	282	93	96	93	282	89	94	79	262
	Exp	94.0	94.0	94.0	282.0	94.0	94.0	94.0	282.0	87.3	87.3	87.3	262.0
	% WG	90.0%	94.0%	98.0%	94.0%	93.0%	96.0%	93.0%	94.0%	89.0%	94.0%	79.0%	87.3%
	% of T	30.0%	31.3%	32.7%	94.0%	31.0%	32.0%	31.0%	94.0%	29.7%	31.3%	26.3%	87.3%
+	Count	9	5	2	16	7	3	7	17	11	4	21	36
	Exp	5.3	5.3	5.3	16.0	5.7	5.7	5.7	17.0	12.0	12.0	12.0	36.0
	% WG	9.0%	5.0%	2.0%	5.3%	7.0%	3.0%	7.0%	5.7%	11.0%	4.0%	21.0%	12.0%
	% of T	3.0%	1.7%	0.7%	5.3%	2.3%	1.0%	2.3%	5.7%	3.7%	1.3%	7.0%	12.0%
++	Count	0	1	0	1	0	1	0	1	0	1	0	1
	Exp	.3	.3	.3	1.0	.3	.3	.3	1.0	.3	.3	.3	1.0
	% WG	0.0%	1.0%	0.0%	0.3%	0.0%	1.0%	0.0%	0.3%	0.0%	1.0%	0.0%	0.3%
	% of T	0.0%	0.3%	0.0%	0.3%	0.0%	0.3%	0.0%	0.3%	0.0%	0.3%	0.0%	0.3%
+++	Count	1	0	0	0	0	0	0	0	0	1	0	1
	Exp	.3	.3	0	0	0	0	0	0	.3	.3	.3	1.0
	% WG	1.0%	0.0%	.0%	.0%	.0%	.0%	.0%	.0%	0.0%	1.0%	0.0%	0.3%
	% of T	0.3%	0.0%	.0%	.0%	.0%	.0%	.0%	.0%	0.0%	0.3%	0.0%	0.3%
	Test	Chi-square= 8.96; p=..176				Chi-square=3.946 p=.413				Chi-square =17.50; p=.008			

Table No 122– Showing statistical data of Irritation in the Excessive salivation (Aasya Sravana) at 10% to 30%

Excessive salivation (Aasya Sravana)

Severity	Group	40%				50%				60%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	82	93	60	235	81	83	44	208	75	74	30	179
	Exp	78.3	78.3	78.3	235.0	69.3	69.3	69.3	208.0	59.7	59.7	59.7	179.0
	% WG	82.0%	93.0%	60.0%	78.3%	81.0%	83.0%	44.0%	69.3%	75.0%	74.0%	30.0%	59.7%
	% of T	27.3%	31.0%	20.0%	78.3%	27.0%	27.7%	14.7%	69.3%	25.0%	24.7%	10.0%	59.7%
+	Count	18	5	32	55	17	14	38	69	18	15	37	70
	Exp	18.3	18.3	18.3	55.0	23.0	23.0	23.0	69.0	23.3	23.3	23.3	70.0
	% WG	18.0%	5.0%	32.0%	18.3%	17.0%	14.0%	38.0%	23.0%	18.0%	15.0%	37.0%	23.3%
	% of T	6.0%	1.7%	10.7%	18.3%	5.7%	4.7%	12.7%	23.0%	6.0%	5.0%	12.3%	23.3%
++	Count	0	1	8	9	2	2	17	21	7	10	29	46
	Exp	3.0	3.0	3.0	9.0	7.0	7.0	7.0	21.0	15.3	15.3	15.3	46.0
	% WG	0.0%	1.0%	8.0%	3.0%	2.0%	2.0%	17.0%	7.0%	7.0%	10.0%	29.0%	15.3%
	% of T	0.0%	0.3%	2.7%	3.0%	0.7%	0.7%	5.7%	7.0%	2.3%	3.3%	9.7%	15.3%
+++	Count	0	1	0	1	0	1	0	1	0	1	4	5
	Exp	.3	.3	.3	1.0	.3	.3	.3	1.0	1.7	1.7	1.7	5.0
	% WG	0.0%	1.0%	0.0%	0.3%	0.0%	1.0%	0.0%	0.3%	0.0%	1.0%	4.0%	1.7%
	% of T	0.0%	0.3%	0.0%	0.3%	0.0%	0.3%	0.0%	0.3%	0.0%	0.3%	1.3%	1.7%
	Test	Chi-square =41.76; p=0.001				Chi-square =54.29: p=.001				Chi-square =58.09: p=.001			

Table No 123– Showing statistical data of Excessive salivation (Aasya Sravana) at 40% to 60%

Excessive salivation (Aasya Sravana)

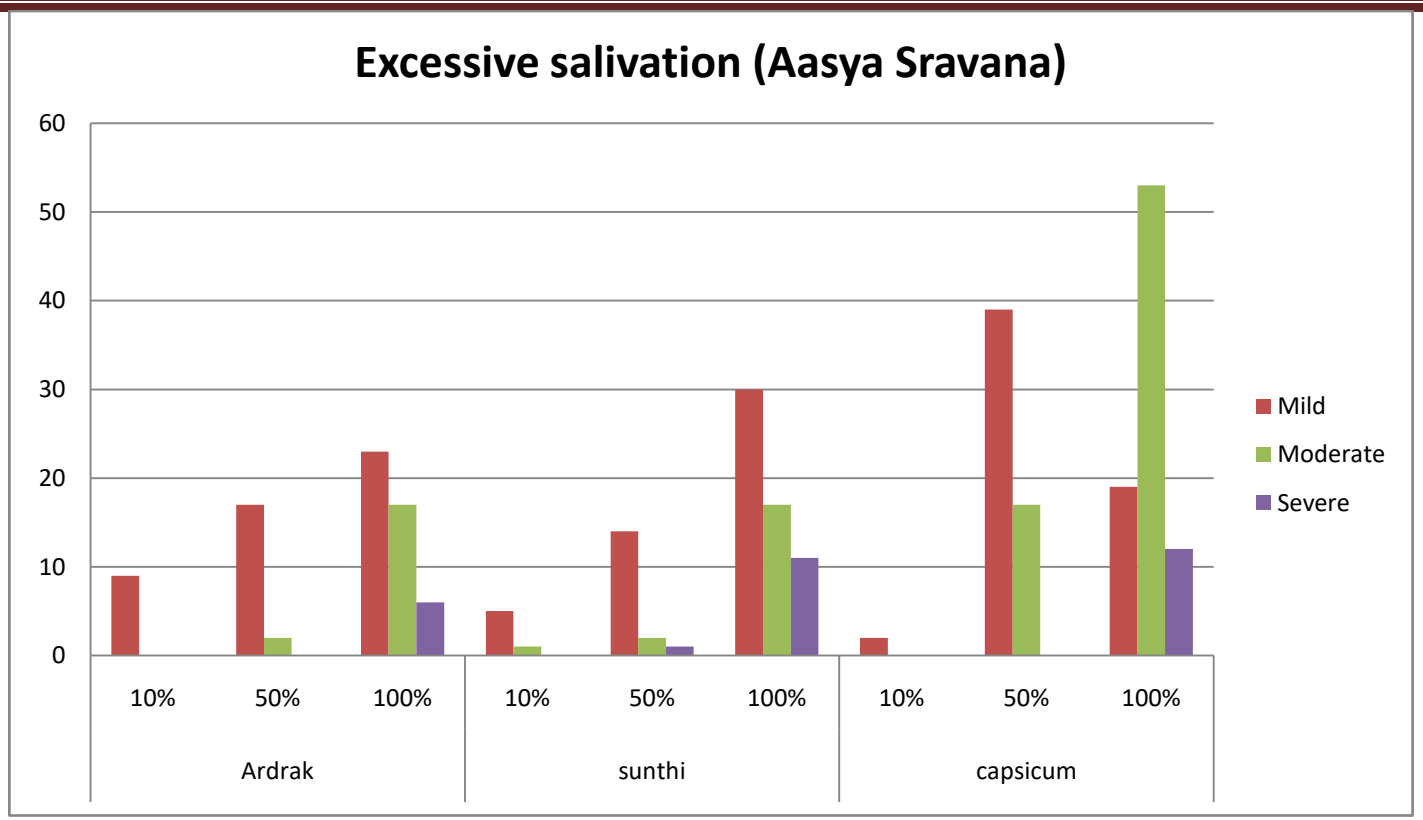
Severity	Group	70%				80%				90%			
		Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total	Adraka	Shunti	Capsicum	Total
0	Count	72	69	22	163	70	65	15	150	63	51	16	130
	Exp	54.3	54.3	54.3	163.0	50.0	50.0	50.0	150.0	43.3	43.3	43.3	130.0
	% WG	72.0%	69.0%	22.0%	54.3%	70.0%	65.0%	15.0%	50.0%	63.0%	51.0%	16.0%	43.3%
	% of T	24.0%	23.0%	7.3%	54.3%	23.3%	21.7%	5.0%	50.0%	21.0%	17.0%	5.3%	43.3%
+	Count	17	18	35	70	20	21	29	70	21	24	26	71
	Exp	23.3	23.3	23.3	70.0	23.3	23.3	23.3	70.0	23.7	23.7	23.7	71.0
	% WG	17.0%	18.0%	35.0%	23.3%	20.0%	21.0%	29.0%	23.3%	21.0%	24.0%	26.0%	23.7%
	% of T	5.7%	6.0%	11.7%	23.3%	6.7%	7.0%	9.7%	23.3%	7.0%	8.0%	8.7%	23.7%
++	Count	11	12	38	61	9	13	48	70	12	23	50	85
	Exp	20.3	20.3	20.3	61.0	23.3	23.3	23.3	70.0	28.3	28.3	28.3	85.0
	% WG	11.0%	12.0%	38.0%	20.3%	9.0%	13.0%	48.0%	23.3%	12.0%	23.0%	50.0%	28.3%
	% of T	3.7%	4.0%	12.7%	20.3%	3.0%	4.3%	16.0%	23.3%	4.0%	7.7%	16.7%	28.3%
+++	Count	0	1	5	6	1	1	8	10	4	2	8	14
	Exp	2.0	2.0	2.0	6.0	3.3	3.3	3.3	10.0	4.7	4.7	4.7	14.0
	% WG	0.0%	1.0%	5.0%	2.0%	1.0%	1.0%	8.0%	3.3%	4.0%	2.0%	8.0%	4.7%
	% of T	0.0%	0.3%	1.7%	2.0%	0.3%	0.3%	2.7%	3.3%	1.3%	0.7%	2.7%	4.7%
	Test	Chi-square =67.76; p=.001				Chi-square =88.34; p=.001				Chi-square =59.04; p=.001			

Table No 124 – Showing statistical data of Excessive salivation (Aasya Sravana) at 70% to 90%

Excessive salivation (Aasya Sravana)

Severity	**100%**				
	Group	Adraka	Shunti	Capsicum	Total
0	Count	54	42	16	112
	Exp	37.3	37.3	37.3	112.0
	% WG	54.0%	42.0%	16.0%	37.3%
	% of T	18.0%	14.0%	5.3%	37.3%
+	Count	23	30	19	72
	Exp	24.0	24.0	24.0	72.0
	% WG	23.0%	30.0%	19.0%	24.0%
	% of T	7.7%	10.0%	6.3%	24.0%
++	Count	17	17	53	87
	Exp	29.0	29.0	29.0	87.0
	% WG	17.0%	17.0%	53.0%	29.0%
	% of T	5.7%	5.7%	17.7%	29.0%
+++	Count	6	11	12	29
	Exp	9.7	9.7	9.7	29.0
	% WG	6.0%	11.0%	12.0%	9.7%
	% of T	2.0%	3.7%	4.0%	9.7%
	Test	Chi-square =54.72; p=.001			

Table No 125 – Showing statistical data of Excessive salivation (Aasya Sravana)at 100%



Graph No 31 – Showing comparative statistical data of domain- Excessive salivation (Aasya Sravana) at 10%, 50% & 100%

A Very faint Taste of

Rasa		**10%**				**20%**				**30%**			
		A	S	C	Total	A	S	C	Total	A	S	C	Total
N	Count	57	60	52	169	51	45	69	165	67	72	87	226
	Exp	56.3	56.3	56.3	169.0	55.0	55.0	55.0	165.0	75.3	75.3	75.3	226.0
	% WG	33.7%	35.5%	30.8%	100.0%	30.9%	27.3%	41.8%	100.0%	29.6%	31.9%	38.5%	100.0%
	% of T	19.0%	20.0%	17.3%	56.3%	17.0%	15.0%	23.0%	55.0%	22.3%	24.0%	29.0%	75.3%
M	Count	15	26	16	57	4	16	4	24	0	2	1	3
	Exp	19.0	19.0	19.0	57.0	8.0	8.0	8.0	24.0	1.0	1.0	1.0	3.0
	% WG	26.3%	45.6%	28.1%	100.0%	16.7%	66.7%	16.7%	100.0%	.0%	66.7%	33.3%	100.0%
	% of T	5.0%	8.7%	5.3%	19.0%	1.3%	5.3%	1.3%	8.0%	.0%	.7%	.3%	1.0%
A	Count	4	1	18	23	0	0	9	9	0	0	0	0
	Exp	7.7	7.7	7.7	23.0	3.0	3.0	3.0	9.0	0	0	0	0
	% WG	17.4%	4.3%	78.3%	100.0%	.0%	.0%	100.0%	100.0%	.0%	.0%	.0%	.0%
	% of T	1.3%	.3%	6.0%	7.7%	.0%	.0%	3.0%	3.0%	.0%	.0%	.0%	.0%
L	Count	1	0	0	1	0	0	0	0	0	0	0	0
	Exp	.3	.3	.3	1.0	0	0	0	0	0	0	0	0
	% WG	100.0%	.0%	.0%	100.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.3%	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
K	Count	14	10	13	37	32	26	17	75	26	22	9	57
	Exp	12.3	12.3	12.3	37.0	25.0	25.0	25.0	75.0	19.0	19.0	19.0	57.0
	% WG	37.8%	27.0%	35.1%	100.0%	42.7%	34.7%	22.7%	100.0%	45.6%	38.6%	15.8%	100.0%
	% of T	4.7%	3.3%	4.3%	12.3%	10.7%	8.7%	5.7%	25.0%	8.7%	7.3%	3.0%	19.0%
T	Count	5	0	1	6	8	3	1	12	5	2	0	7
	Exp	2.0	2.0	2.0	6.0	4.0	4.0	4.0	12.0	2.3	2.3	2.3	7.0
	% WG	83.3%	.0%	16.7%	100.0%	66.7%	25.0%	8.3%	100.0%	71.4%	28.6%	.0%	100.0%
	% of T	1.7%	.0%	.3%	2.0%	2.7%	1.0%	.3%	4.0%	1.7%	.7%	.0%	2.3%
KA	Count	4	3	0	7	5	10	0	15	2	2	3	7
	Exp	2.3	2.3	2.3	7.0	5.0	5.0	5.0	15.0	2.3	2.3	2.3	7.0
	% WG	57.1%	42.9%	.0%	100.0%	33.3%	66.7%	.0%	100.0%	28.6%	28.6%	42.9%	100.0%
	% of T	1.3%	1.0%	.0%	2.3%	1.7%	3.3%	.0%	5.0%	.7%	.7%	1.0%	2.3%
	Test	Chi-square =39.370; p=.001				Chi-square =56.733; p=.001				Chi-square =18.906; p=.015			

Table No 126 – Showing statistical data of domain - A Very faint Taste of 10% to 30 %

Rasa		**40%**				**50%**				**60%**			
		A	S	C	Total	A	S	C	Total	A	S	C	Total
N	Count	81	70	92	243	84	86	97	267	87	89	97	273
	Exp	81.0	81.0	81.0	243.0	89.0	89.0	89.0	267.0	91.0	91.0	91.0	273.0
	% WG	33.3%	28.8%	37.9%	100.0%	31.5%	32.2%	36.3%	100.0%	31.9%	32.6%	35.5%	100.0%
	% of T	27.0%	23.3%	30.7%	81.0%	28.0%	28.7%	32.3%	89.0%	29.0%	29.7%	32.3%	91.0%
M	Count	0	4	0	4	0	0	1	1	0	1	0	1
	Exp	1.3	1.3	1.3	4.0	.3	.3	.3	1.0	.3	.3	.3	1.0
	% WG	.0%	100.0%	.0%	100.0%	.0%	.0%	100.0%	100.0%	.0%	100.0%	.0%	100.0%
	% of T	.0%	1.3%	.0%	1.3%	.0%	.0%	.3%	.3%	.0%	.3%	.0%	.3%
A	Count	0	0	0	0	0	1	0	1	0	1	0	1
	Exp	0	0	0	0	.3	.3	.3	1.0	.3	.3	.3	1.0
	% WG	.0%	.0%	.0%	.0%	.0%	100.0%	.0%	100.0%	.0%	100.0%	.0%	100.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.3%	.0%	.3%	.0%	.3%	.0%	.3%
L	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
K	Count	14	19	5	38	9	8	2	19	5	7	2	14
	Exp	12.7	12.7	12.7	38.0	6.3	6.3	6.3	19.0	4.7	4.7	4.7	14.0
	% WG	36.8%	50.0%	13.2%	100.0%	47.4%	42.1%	10.5%	100.0%	35.7%	50.0%	14.3%	100.0%
	% of T	4.7%	6.3%	1.7%	12.7%	3.0%	2.7%	.7%	6.3%	1.7%	2.3%	.7%	4.7%
T	Count	3	3	1	7	3	3	0	6	8	2	0	10
	Exp	2.3	2.3	2.3	7.0	2.0	2.0	2.0	6.0	3.3	3.3	3.3	10.0
	% WG	42.9%	42.9%	14.3%	100.0%	50.0%	50.0%	.0%	100.0%	80.0%	20.0%	.0%	100.0%
	% of T	1.0%	1.0%	.3%	2.3%	1.0%	1.0%	.0%	2.0%	2.7%	.7%	.0%	3.3%
KA	Count	2	4	2	8	4	2	0	6	0	0	1	1
	Exp	2.7	2.7	2.7	8.0	2.0	2.0	2.0	6.0	.3	.3	.3	1.0
	% WG	25.0%	50.0%	25.0%	100.0%	66.7%	33.3%	.0%	100.0%	.0%	.0%	100.0%	100.0%
	% of T	.7%	1.3%	.7%	2.7%	1.3%	.7%	.0%	2.0%	.0%	.0%	.3%	.3%
	Test	Chi-square =21.078; p=.007				Chi-square =16.62; p=.083				Chi-square =19.730; p=.032			

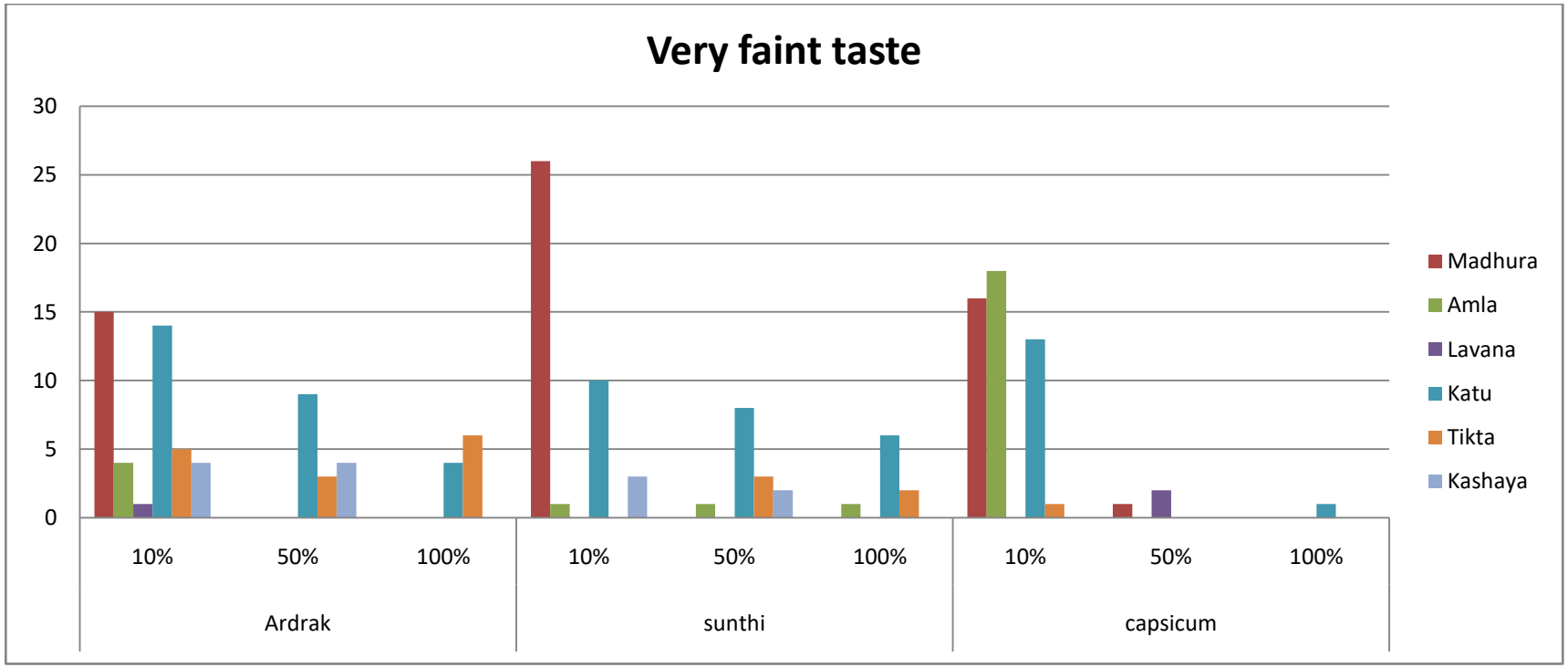
Table No 127 – Showing statistical data of domain - A Very faint Taste of 40% to 60 %

Rasa		**70%**				**80%**				**90%**			
		A	S	C	Total	A	S	C	Total	A	S	C	Total
N	Count	90	86	98	274	90	92	98	280	89	91	98	278
	Exp	91.3	91.3	91.3	274.0	93.3	93.3	93.3	280.0	92.7	92.7	92.7	278.0
	% WG	32.8%	31.4%	35.8%	100.0%	32.1%	32.9%	35.0%	100.0%	32.0%	32.7%	35.3%	100.0%
	% of T	30.0%	28.7%	32.7%	91.3%	30.0%	30.7%	32.7%	93.3%	29.7%	30.3%	32.7%	92.7%
M	Count	0	1	0	1	0	1	0	1	0	1	0	1
	Exp	.3	.3	.3	1.0	.3	.3	.3	1.0	.3	.3	.3	1.0
	% WG	.0%	100.0%	.0%	100.0%	.0%	100.0%	.0%	100.0%	.0%	100.0%	.0%	100.0%
	% of T	.0%	.3%	.0%	.3%	.0%	.3%	.0%	.3%	.0%	.3%	.0%	.3%
A	Count	0	1	0	1	0	0	0	0	0	1	0	1
	Exp	.3	.3	.3	1.0	0	0	0	0	.3	.3	.3	1.0
	% WG	.0%	100.0%	.0%	100.0%	.0%	.0%	.0%	.0%	.0%	100.0%	.0%	100.0%
	% of T	.0%	.3%	.0%	.3%	.0%	.0%	.0%	.0%	.0%	.3%	.0%	.3%
L	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
K	Count	6	12	1	19	6	6	1	13	4	6	1	11
	Exp	6.3	6.3	6.3	19.0	4.3	4.3	4.3	13.0	3.7	3.7	3.7	11.0
	% WG	31.6%	63.2%	5.3%	100.0%	46.2%	46.2%	7.7%	100.0%	36.4%	54.5%	9.1%	100.0%
	% of T	2.0%	4.0%	.3%	6.3%	2.0%	2.0%	.3%	4.3%	1.3%	2.0%	.3%	3.7%
T	Count	4	0	0	4	4	1	0	5	7	1	0	8
	Exp	1.3	1.3	1.3	4.0	1.7	1.7	1.7	5.0	2.7	2.7	2.7	8.0
	% WG	100.0%	.0%	.0%	100.0%	80.0%	20.0%	.0%	100.0%	87.5%	12.5%	.0%	100.0%
	% of T	1.3%	.0%	.0%	1.3%	1.3%	.3%	.0%	1.7%	2.3%	.3%	.0%	2.7%
KA	Count	0	0	1	1	0	0	1	1	0	0	1	1
	Exp	.3	.3	.3	1.0	.3	.3	.3	1.0	.3	.3	.3	1.0
	% WG	.0%	.0%	100.0%	100.0%	.0%	.0%	100.0%	100.0%	.0%	.0%	100.0%	100.0%
	% of T	.0%	.0%	.3%	.3%	.0%	.0%	.3%	.3%	.0%	.0%	.3%	.3%
	Test	Chi-square =24.396; p=.007				Chi-square =67.76.83; p=.001				Chi-square =20.687; p=.023			

Table No 128 – Showing statistical data of domain - A Very faint Taste of 70% to 90 %

Rasa		**100%**			
		A	S	C	Total
N	Count	90	91	99	280
	Exp	93.3	93.3	93.3	280.0
	% WG	32.1%	32.5%	35.4%	100.0%
	% of T	30.0%	30.3%	33.0%	93.3%
M	Count	0	0	0	0
	Exp	0	0	0	0
	% WG	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%
A	Count	0	1	0	1
	Exp	.3	.3	.3	1.0
	% WG	.0%	100.0%	.0%	100.0%
	% of T	.0%	.3%	.0%	.3%
L	Count	0	0	0	0
	Exp	0	0	0	0
	% WG	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%
K	Count	4	6	1	11
	Exp	3.7	3.7	3.7	11.0
	% WG	36.4%	54.5%	9.1%	100.0%
	% of T	1.3%	2.0%	.3%	3.7%
T	Count	6	2	0	8
	Exp	2.7	2.7	2.7	8.0
	% WG	75.0%	25.0%	.0%	100.0%
	% of T	2.0%	.7%	.0%	2.7%
KA	Count	0	0	0	0
	Exp	0	0	0	0
	% WG	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%
	Test	Chi-square =12.976; p=.043			

Table No 129 – Showing statistical data of domain - A Very faint Taste of 100 %



Graph No 32 – Showing comparative statistical data of domain - A Very faint Taste of 10%, 50% & 100 %

A faint Taste of glass no 1 to 3

Rasa		10%				20%				30%			
		A	S	C	Total	A	S	C	Total	A	S	C	Total
N	Count	87	92	98	277	77	78	72	227	61	51	62	174
	Exp	92.3	92.3	92.3	277.0	75.7	75.7	75.7	227.0	58.0	58.0	58.0	174.0
	% WG	31.4%	33.2%	35.4%	100.0%	33.9%	34.4%	31.7%	100.0%	35.1%	29.3%	35.6%	100.0%
	% of T	29.0%	30.7%	32.7%	92.3%	25.7%	26.0%	24.0%	75.7%	20.3%	17.0%	20.7%	58.0%
M	Count	4	4	0	8	2	6	1	9	4	5	0	9
	Exp	2.7	2.7	2.7	8.0	3.0	3.0	3.0	9.0	3.0	3.0	3.0	9.0
	% WG	50.0%	50.0%	.0%	100.0%	22.2%	66.7%	11.1%	100.0%	44.4%	55.6%	.0%	100.0%
	% of T	1.3%	1.3%	.0%	2.7%	.7%	2.0%	.3%	3.0%	1.3%	1.7%	.0%	3.0%
A	Count	2	0	0	2	2	1	2	5	0	0	0	0
	Exp	.7	.7	.7	2.0	1.7	1.7	1.7	5.0	0	0	0	0
	% WG	100.0%	.0%	.0%	100.0%	40.0%	20.0%	40.0%	100.0%	.0%	.0%	.0%	.0%
	% of T	.7%	.0%	.0%	.7%	.7%	.3%	.7%	1.7%	.0%	.0%	.0%	.0%
L	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
K	Count	5	2	1	8	13	12	24	49	32	30	38	100
	Exp	2.7	2.7	2.7	8.0	16.3	16.3	16.3	49.0	33.3	33.3	33.3	100.0
	% WG	62.5%	25.0%	12.5%	100.0%	26.5%	24.5%	49.0%	100.0%	32.0%	30.0%	38.0%	100.0%
	% of T	1.7%	.7%	.3%	2.7%	4.3%	4.0%	8.0%	16.3%	10.7%	10.0%	12.7%	33.3%
T	Count	1	2	1	4	4	2	0	6	0	4	0	4
	Exp	1.3	1.3	1.3	4.0	2.0	2.0	2.0	6.0	1.3	1.3	1.3	4.0
	% WG	25.0%	50.0%	25.0%	100.0%	66.7%	33.3%	.0%	100.0%	.0%	100.0%	.0%	100.0%
	% of T	.3%	.7%	.3%	1.3%	1.3%	.7%	.0%	2.0%	.0%	1.3%	.0%	1.3%
KA	Count	1	0	0	1	2	1	1	4	3	10	0	13
	Exp	.3	.3	.3	1.0	1.3	1.3	1.3	4.0	4.3	4.3	4.3	13.0
	% WG	100.0%	.0%	.0%	100.0%	50.0%	25.0%	25.0%	100.0%	23.1%	76.9%	.0%	100.0%
	% of T	.3%	.0%	.0%	.3%	.7%	.3%	.3%	1.3%	1.0%	3.3%	.0%	4.3%
	Test	Chi-square =14.407; p=.115				Chi-square =15.268; p=.123				Chi-square =27.136; p=.001			

Table No 130 – Showing statistical data of domain - A faint Taste of 10% to 30 %

A faint Taste of glass no 4 to 6

Rasa		**40%**				**50%**				**60%**			
		A	S	C	Total	A	S	C	Total	A	S	C	Total
N	Count	61	53	79	193	73	70	94	237	79	77	96	252
	Exp	64.3	64.3	64.3	193.0	79.0	79.0	79.0	237.0	84.0	84.0	84.0	252.0
	% WG	31.6%	27.5%	40.9%	100.0%	30.8%	29.5%	39.7%	100.0%	31.3%	30.6%	38.1%	100.0%
	% of T	20.3%	17.7%	26.3%	64.3%	24.3%	23.3%	31.3%	79.0%	26.3%	25.7%	32.0%	84.0%
M	Count	3	2	2	7	2	0	0	2	0	0	0	0
	Exp	2.3	2.3	2.3	7.0	.7	.7	.7	2.0	0	0	0	0
	% WG	42.9%	28.6%	28.6%	100.0%	100.0%	.0%	.0%	100.0%	.0%	.0%	.0%	.0%
	% of T	1.0%	.7%	.7%	2.3%	.7%	.0%	.0%	.7%	.0%	.0%	.0%	.0%
A	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
L	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
K	Count	28	31	18	77	16	21	4	41	15	17	1	33
	Exp	25.7	25.7	25.7	77.0	13.7	13.7	13.7	41.0	11.0	11.0	11.0	33.0
	% WG	36.4%	40.3%	23.4%	100.0%	39.0%	51.2%	9.8%	100.0%	45.5%	51.5%	3.0%	100.0%
	% of T	9.3%	10.3%	6.0%	25.7%	5.3%	7.0%	1.3%	13.7%	5.0%	5.7%	.3%	11.0%
T	Count	3	3	0	6	3	7	0	10	3	2	2	7
	Exp	2.0	2.0	2.0	6.0	3.3	3.3	3.3	10.0	2.3	2.3	2.3	7.0
	% WG	50.0%	50.0%	.0%	100.0%	30.0%	70.0%	.0%	100.0%	42.9%	28.6%	28.6%	100.0%
	% of T	1.0%	1.0%	.0%	2.0%	1.0%	2.3%	.0%	3.3%	1.0%	.7%	.7%	2.3%
KA	Count	5	11	1	17	6	2	2	10	3	4	1	8
	Exp	5.7	5.7	5.7	17.0	3.3	3.3	3.3	10.0	2.7	2.7	2.7	8.0
	% WG	29.4%	64.7%	5.9%	100.0%	60.0%	20.0%	20.0%	100.0%	37.5%	50.0%	12.5%	100.0%
	% of T	1.7%	3.7%	.3%	5.7%	2.0%	.7%	.7%	3.3%	1.0%	1.3%	.3%	2.7%
	Test	Chi-square =21.350; p=.006				Chi-square =30.100; p=.001				Chi-square =18.449; p=.005			

Table No 131 – Showing statistical data of domain - A faint Taste of 40% to 60 %

A faint Taste of glass no 7 to 9

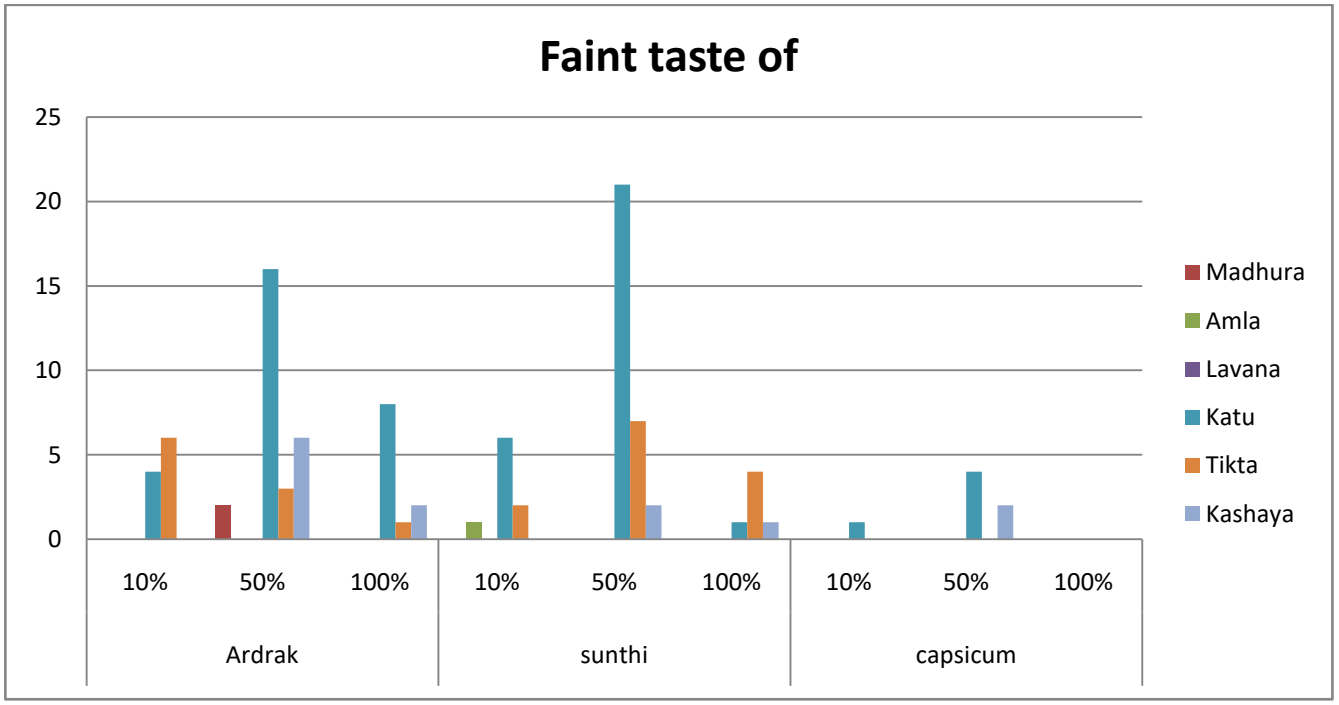
Rasa		**70%**				**80%**				**90%**			
		A	S	C	Total	A	S	C	Total	A	S	C	Total
N	Count	83	86	97	266	86	87	99	272	88	91	100	279
	Exp	88.7	88.7	88.7	266.0	90.7	90.7	90.7	272.0	93.0	93.0	93.0	279.0
	% WG	31.2%	32.3%	36.5%	100.0%	31.6%	32.0%	36.4%	100.0%	31.5%	32.6%	35.8%	100.0%
	% of T	27.7%	28.7%	32.3%	88.7%	28.7%	29.0%	33.0%	90.7%	29.3%	30.3%	33.3%	93.0%
M	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
A	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
L	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
K	Count	12	7	1	20	9	4	1	14	9	4	0	13
	Exp	6.7	6.7	6.7	20.0	4.7	4.7	4.7	14.0	4.3	4.3	4.3	13.0
	% WG	60.0%	35.0%	5.0%	100.0%	64.3%	28.6%	7.1%	100.0%	69.2%	30.8%	.0%	100.0%
	% of T	4.0%	2.3%	.3%	6.7%	3.0%	1.3%	.3%	4.7%	3.0%	1.3%	.0%	4.3%
T	Count	3	5	2	10	2	6	0	8	3	5	0	8
	Exp	3.3	3.3	3.3	10.0	2.7	2.7	2.7	8.0	2.7	2.7	2.7	8.0
	% WG	30.0%	50.0%	20.0%	100.0%	25.0%	75.0%	.0%	100.0%	37.5%	62.5%	.0%	100.0%
	% of T	1.0%	1.7%	.7%	3.3%	.7%	2.0%	.0%	2.7%	1.0%	1.7%	.0%	2.7%
KA	Count	2	2	0	4	3	3	0	6	0	0	0	0
	Exp	1.3	1.3	1.3	4.0	2.0	2.0	2.0	6.0	0	0	0	0
	% WG	50.0%	50.0%	.0%	100.0%	50.0%	50.0%	.0%	100.0%	.0%	.0%	.0%	.0%
	% of T	.7%	.7%	.0%	1.3%	1.0%	1.0%	.0%	2.0%	.0%	.0%	.0%	.0%
	Test	Chi-square =13.72; p=.033				Chi-square =18.154; p=.066				Chi-square =14.973; p=.005			

Table No 132 – Showing statistical data of domain - A faint Taste of 70% to 90 %

A faint Taste of glass no 10

Rasa		**100%**			
		A	S	C	Total
N	Count	89	94	100	283
	Exp	94.3	94.3	94.3	283.0
	% WG	31.4%	33.2%	35.3%	100.0%
	% of T	29.7%	31.3%	33.3%	94.3%
M	Count	0	0	0	0
	Exp	0	0	0	0
	% WG	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%
A	Count	0	0	0	0
	Exp	0	0	0	0
	% WG	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%
L	Count	0	0	0	0
	Exp	0	0	0	0
	% WG	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%
K	Count	8	1	0	9
	Exp	3.0	3.0	3.0	9.0
	% WG	88.9%	11.1%	.0%	100.0%
	% of T	2.7%	.3%	.0%	3.0%
T	Count	1	4	0	5
	Exp	1.7	1.7	1.7	5.0
	% WG	20.0%	80.0%	.0%	100.0%
	% of T	.3%	1.3%	.0%	1.7%
KA	Count	2	1	0	3
	Exp	1.0	1.0	1.0	3.0
	% WG	66.7%	33.3%	.0%	100.0%
	% of T	.7%	.3%	.0%	1.0%
	Test	Chi-square =20.510; p=.002			

Table No 133 – Showing statistical data of domain - A faint Taste of 100 %



Graph No 33 – Showing comparative statistical data of domain - A faint Taste of 10%,50% & 100 %

A weak Taste of glass no 1 to 3

Rasa		**10%**				**20%**				**30%**			
		A	S	C	Total	A	S	C	Total	A	S	C	Total
N	Count	90	89	95	274	82	93	85	260	75	81	69	225
	Exp	91.3	91.3	91.3	274.0	86.7	86.7	86.7	260.0	75.0	75.0	75.0	225.0
	% WG	32.8%	32.5%	34.7%	100.0%	31.5%	35.8%	32.7%	100.0%	33.3%	36.0%	30.7%	100.0%
	% of T	30.0%	29.7%	31.7%	91.3%	27.3%	31.0%	28.3%	86.7%	25.0%	27.0%	23.0%	75.0%
M	Count	3	5	1	9	0	0	0	0	0	2	0	2
	Exp	3.0	3.0	3.0	9.0	0	0	0	0	.7	.7	.7	2.0
	% WG	33.3%	55.6%	11.1%	100.0%	.0%	.0%	.0%	.0%	.0%	100.0%	.0%	100.0%
	% of T	1.0%	1.7%	.3%	3.0%	.0%	.0%	.0%	.0%	.0%	.7%	.0%	.7%
A	Count	0	2	0	2	0	0	0	0	0	0	0	0
	Exp	.7	.7	.7	2.0	0	0	0	0	0	0	0	0
	% WG	.0%	100.0%	.0%	100.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.7%	.0%	.7%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
L	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
K	Count	7	2	3	12	12	4	13	29	22	12	29	63
	Exp	4.0	4.0	4.0	12.0	9.7	9.7	9.7	29.0	21.0	21.0	21.0	63.0
	% WG	58.3%	16.7%	25.0%	100.0%	41.4%	13.8%	44.8%	100.0%	34.9%	19.0%	46.0%	100.0%
	% of T	2.3%	.7%	1.0%	4.0%	4.0%	1.3%	4.3%	9.7%	7.3%	4.0%	9.7%	21.0%
T	Count	0	2	1	3	5	1	2	8	0	4	2	6
	Exp	1.0	1.0	1.0	3.0	2.7	2.7	2.7	8.0	2.0	2.0	2.0	6.0
	% WG	.0%	66.7%	33.3%	100.0%	62.5%	12.5%	25.0%	100.0%	.0%	66.7%	33.3%	100.0%
	% of T	.0%	.7%	.3%	1.0%	1.7%	.3%	.7%	2.7%	.0%	1.3%	.7%	2.0%
KA	Count	0	0	0	0	1	2	0	3	3	1	0	4
	Exp	0	0	0	0	1.0	1.0	1.0	3.0	1.3	1.3	1.3	4.0
	% WG	.0%	.0%	.0%	.0%	33.3%	66.7%	.0%	100.0%	75.0%	25.0%	.0%	100.0%
	% of T	.0%	.0%	.0%	.0%	.3%	.7%	.0%	1.0%	1.0%	.3%	.0%	1.3%
	Test	Chi-square =12.393; p=.135				Chi-square =11.031; p=.087				Chi-square =19.412; p=.013			

Table No 134 – Showing statistical data of domain - A weak Taste of 10% to 30 %

A weak Taste of glass no 4 to 6

Rasa		40%				50%				60%			
		A	S	C	Total	A	S	C	Total	A	S	C	Total
N	Count	60	73	62	195	59	58	65	182	62	50	68	180
	Exp	65.0	65.0	65.0	195.0	60.7	60.7	60.7	182.0	60.0	60.0	60.0	180.0
	% WG	30.8%	37.4%	31.8%	100.0%	32.4%	31.9%	35.7%	100.0%	34.4%	27.8%	37.8%	100.0%
	% of T	20.0%	24.3%	20.7%	65.0%	19.7%	19.3%	21.7%	60.7%	20.7%	16.7%	22.7%	60.0%
M	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
A	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
L	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
K	Count	34	19	35	88	32	34	31	97	28	36	24	88
	Exp	29.3	29.3	29.3	88.0	32.3	32.3	32.3	97.0	29.3	29.3	29.3	88.0
	% WG	38.6%	21.6%	39.8%	100.0%	33.0%	35.1%	32.0%	100.0%	31.8%	40.9%	27.3%	100.0%
	% of T	11.3%	6.3%	11.7%	29.3%	10.7%	11.3%	10.3%	32.3%	9.3%	12.0%	8.0%	29.3%
T	Count	1	5	1	7	4	4	1	9	2	7	3	12
	Exp	2.3	2.3	2.3	7.0	3.0	3.0	3.0	9.0	4.0	4.0	4.0	12.0
	% WG	14.3%	71.4%	14.3%	100.0%	44.4%	44.4%	11.1%	100.0%	16.7%	58.3%	25.0%	100.0%
	% of T	.3%	1.7%	.3%	2.3%	1.3%	1.3%	.3%	3.0%	.7%	2.3%	1.0%	4.0%
KA	Count	5	3	2	10	5	4	3	12	8	7	5	20
	Exp	3.3	3.3	3.3	10.0	4.0	4.0	4.0	12.0	6.7	6.7	6.7	20.0
	% WG	50.0%	30.0%	20.0%	100.0%	41.7%	33.3%	25.0%	100.0%	40.0%	35.0%	25.0%	100.0%
	% of T	1.7%	1.0%	.7%	3.3%	1.7%	1.3%	1.0%	4.0%	2.7%	2.3%	1.7%	6.7%
	Test	Chi-square =12.956; p=.044				Chi-square =3.117; p=.794				Chi-square =9.545; p=.145			

Table No 135 – Showing statistical data of domain - A weak Taste of 40% to 60 %

A weak Taste of glass no 7 to 9

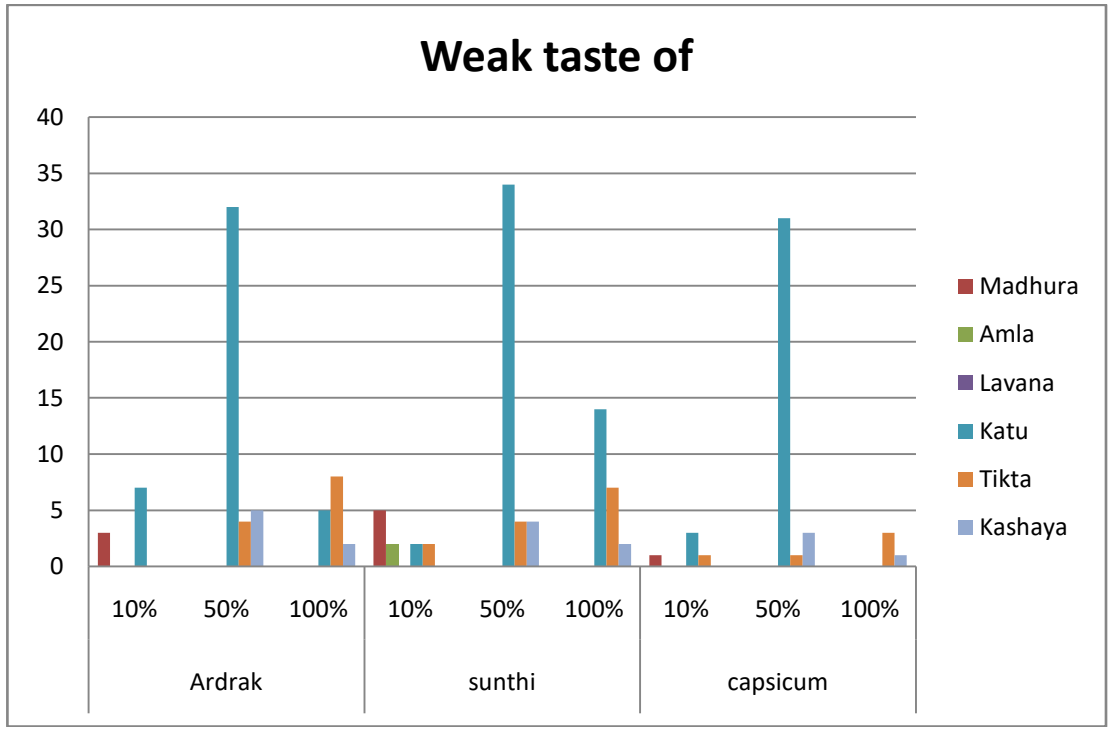
Rasa		70%				80%				90%			
		A	S	C	Total	A	S	C	Total	A	S	C	Total
N	Count	68	64	88	220	78	72	95	245	81	73	95	249
	Exp	73.3	73.3	73.3	220.0	81.7	81.7	81.7	245.0	83.0	83.0	83.0	249.0
	% WG	30.9%	29.1%	40.0%	100.0%	31.8%	29.4%	38.8%	100.0%	32.5%	29.3%	38.2%	100.0%
	% of T	22.7%	21.3%	29.3%	73.3%	26.0%	24.0%	31.7%	81.7%	27.0%	24.3%	31.7%	83.0%
M	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
A	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
L	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
K	Count	21	22	8	51	9	17	1	27	4	16	1	21
	Exp	17.0	17.0	17.0	51.0	9.0	9.0	9.0	27.0	7.0	7.0	7.0	21.0
	% WG	41.2%	43.1%	15.7%	100.0%	33.3%	63.0%	3.7%	100.0%	19.0%	76.2%	4.8%	100.0%
	% of T	7.0%	7.3%	2.7%	17.0%	3.0%	5.7%	.3%	9.0%	1.3%	5.3%	.3%	7.0%
T	Count	8	5	3	16	7	6	4	17	10	7	3	20
	Exp	5.3	5.3	5.3	16.0	5.7	5.7	5.7	17.0	6.7	6.7	6.7	20.0
	% WG	50.0%	31.2%	18.8%	100.0%	41.2%	35.3%	23.5%	100.0%	50.0%	35.0%	15.0%	100.0%
	% of T	2.7%	1.7%	1.0%	5.3%	2.3%	2.0%	1.3%	5.7%	3.3%	2.3%	1.0%	6.7%
KA	Count	3	9	1	13	6	5	0	11	5	4	1	10
	Exp	4.3	4.3	4.3	13.0	3.7	3.7	3.7	11.0	3.3	3.3	3.3	10.0
	% WG	23.1%	69.2%	7.7%	100.0%	54.5%	45.5%	.0%	100.0%	50.0%	40.0%	10.0%	100.0%
	% of T	1.0%	3.0%	.3%	4.3%	2.0%	1.7%	.0%	3.7%	1.7%	1.3%	.3%	3.3%
	Test	Chi-square =22.061; p=.001				Chi-square =24.168; p=.001				Chi-square =27.288 p=.001			

Table No 136 – Showing statistical data of domain - A weak Taste of 70% to 90 %

A weak Taste of glass no 10

Rasa		**100%**			
		A	S	C	Total
N	Count	85	77	96	258
	Exp	86.0	86.0	86.0	258.0
	% WG	32.9%	29.8%	37.2%	100.0%
	% of T	28.3%	25.7%	32.0%	86.0%
M	Count	0	0	0	0
	Exp	0	0	0	0
	% WG	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%
A	Count	0	0	0	0
	Exp	0	0	0	0
	% WG	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%
L	Count	0	0	0	0
	Exp	0	0	0	0
	% WG	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%
K	Count	5	14	0	19
	Exp	6.3	6.3	6.3	19.0
	% WG	26.3%	73.7%	.0%	100.0%
	% of T	1.7%	4.7%	.0%	6.3%
T	Count	8	7	3	18
	Exp	6.0	6.0	6.0	18.0
	% WG	44.4%	38.9%	16.7%	100.0%
	% of T	2.7%	2.3%	1.0%	6.0%
KA	Count	2	2	1	5
	Exp	1.7	1.7	1.7	5.0
	% WG	40.0%	40.0%	20.0%	100.0%
	% of T	.7%	.7%	.3%	1.7%
	Test	Chi-square =20.74; p=.002			

Table No 137 – Showing statistical data of domain - A faint Taste of 100 %



Graph No 34 – Showing comparative statistical data of domain - A weak Taste of 10%, 50% & 100 %

A Clear Taste of glass no 1 to 3

Rasa		**10%**				**20%**				**30%**			
		A	S	C	Total	A	S	C	Total	A	S	C	Total
N	Count	99	100	99	298	96	100	92	288	89	91	83	263
	Exp	99.3	99.3	99.3	298.0	96.0	96.0	96.0	288.0	87.7	87.7	87.7	263.0
	% WG	33.2%	33.6%	33.2%	100.0%	33.3%	34.7%	31.9%	100.0%	33.8%	34.6%	31.6%	100.0%
	% of T	33.0%	33.3%	33.0%	99.3%	32.0%	33.3%	30.7%	96.0%	29.7%	30.3%	27.7%	87.7%
M	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
A	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
L	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
K	Count	0	0	1	1	2	0	8	10	7	7	17	31
	Exp	.3	.3	.3	1.0	3.3	3.3	3.3	10.0	10.3	10.3	10.3	31.0
	% WG	.0%	.0%	100.0%	100.0%	20.0%	.0%	80.0%	100.0%	22.6%	22.6%	54.8%	100.0%
	% of T	.0%	.0%	.3%	.3%	.7%	.0%	2.7%	3.3%	2.3%	2.3%	5.7%	10.3%
T	Count	1	0	0	1	0	0	0	0	2	2	0	4
	Exp	.3	.3	.3	1.0	0	0	0	0	1.3	1.3	1.3	4.0
	% WG	100.0%	.0%	.0%	100.0%	.0%	.0%	.0%	.0%	50.0%	50.0%	.0%	100.0%
	% of T	.3%	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.7%	.7%	.0%	1.3%
KA	Count	0	0	0	0	2	0	0	2	2	0	0	2
	Exp	0	0	0	0	.7	.7	.7	2.0	.7	.7	.7	2.0
	% WG	.0%	.0%	.0%	.0%	100.0%	.0%	.0%	100.0%	100.0%	.0%	.0%	100.0%
	% of T	.0%	.0%	.0%	.0%	.7%	.0%	.0%	.7%	.7%	.0%	.0%	.7%
	Test	Chi-square =4.007; p=.405				Chi-square =14.733; p=.005				Chi-square =12.847; p=.046			

Table No 138 – Showing statistical data of domain - A Clear Taste of 10% to 30 %

A Clear Taste of glass no 4 to 6

Rasa		40%				50%				60%			
		A	S	C	Total	A	S	C	Total	A	S	C	Total
N	Count	82	85	62	229	66	77	41	184	48	67	28	143
	Exp	76.3	76.3	76.3	229.0	61.3	61.3	61.3	184.0	47.7	47.7	47.7	143.0
	% WG	35.8%	37.1%	27.1%	100.0%	35.9%	41.8%	22.3%	100.0%	33.6%	46.9%	19.6%	100.0%
	% of T	27.3%	28.3%	20.7%	76.3%	22.0%	25.7%	13.7%	61.3%	16.0%	22.3%	9.3%	47.7%
M	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
A	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
L	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
K	Count	15	13	38	66	30	21	58	109	45	30	72	147
	Exp	22.0	22.0	22.0	66.0	36.3	36.3	36.3	109.0	49.0	49.0	49.0	147.0
	% WG	22.7%	19.7%	57.6%	100.0%	27.5%	19.3%	53.2%	100.0%	30.6%	20.4%	49.0%	100.0%
	% of T	5.0%	4.3%	12.7%	22.0%	10.0%	7.0%	19.3%	36.3%	15.0%	10.0%	24.0%	49.0%
T	Count	2	2	0	4	2	1	1	4	3	1	0	4
	Exp	1.3	1.3	1.3	4.0	1.3	1.3	1.3	4.0	1.3	1.3	1.3	4.0
	% WG	50.0%	50.0%	.0%	100.0%	50.0%	25.0%	25.0%	100.0%	75.0%	25.0%	.0%	100.0%
	% of T	.7%	.7%	.0%	1.3%	.7%	.3%	.3%	1.3%	1.0%	.3%	.0%	1.3%
KA	Count	1	0	0	1	2	1	0	3	4	2	0	6
	Exp	.3	.3	.3	1.0	1.0	1.0	1.0	3.0	2.0	2.0	2.0	6.0
	% WG	100.0%	.0%	.0%	100.0%	66.7%	33.3%	.0%	100.0%	66.7%	33.3%	.0%	100.0%
	% of T	.3%	.0%	.0%	.3%	.7%	.3%	.0%	1.0%	1.3%	.7%	.0%	2.0%
	Test	Chi-square =25.642; p=.001				Chi-square =34.03; p=.001				Chi-square =41.94: p=.011			

Table No 139 – Showing statistical data of domain - A Clear Taste of 40% to 60 %

A Clear Taste of glass no 7 to 9

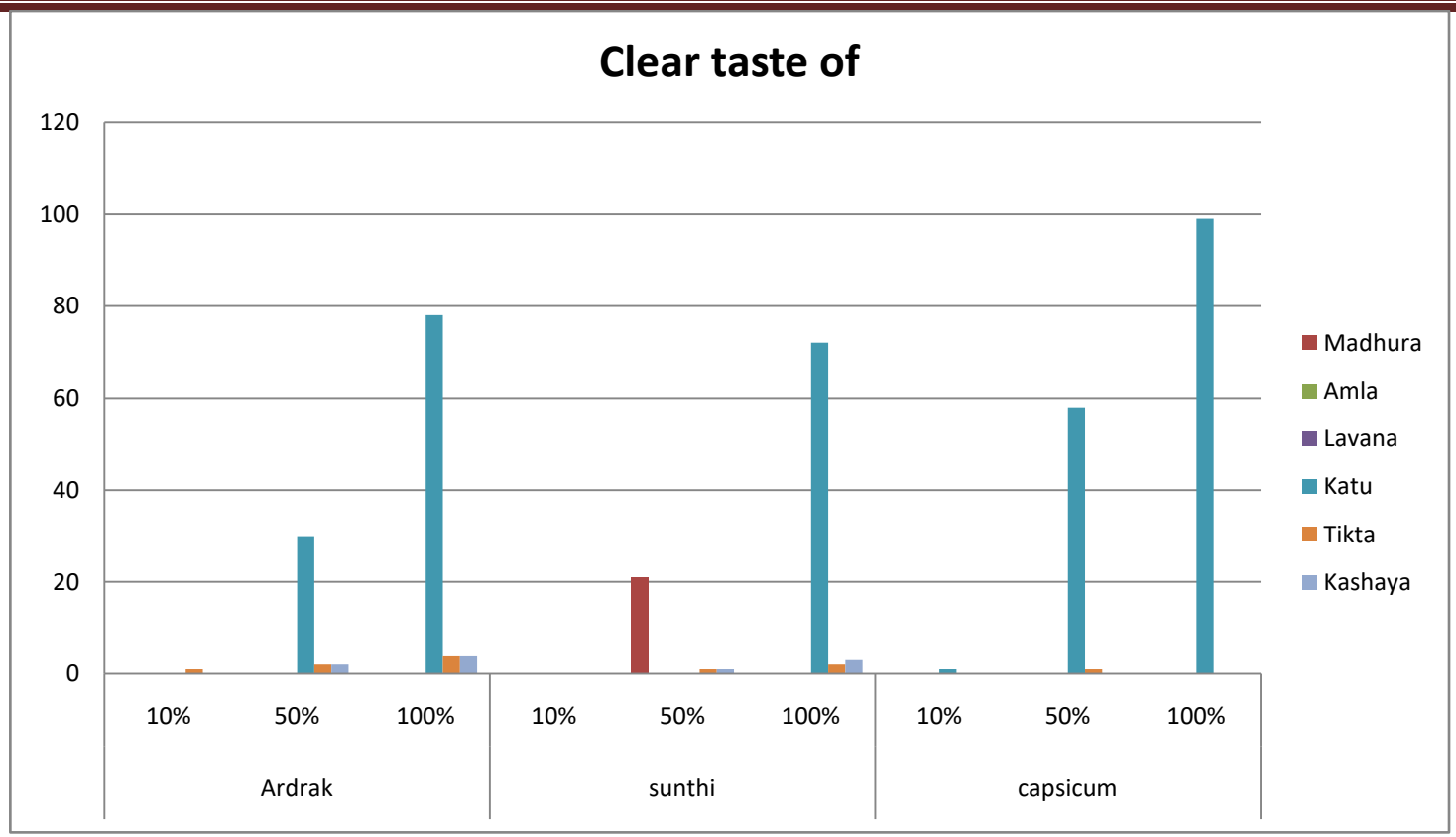
Rasa		**70%**				**80%**				**90%**			
		A	S	C	Total	A	S	C	Total	A	S	C	Total
N	Count	37	47	9	93	27	29	5	61	18	22	2	42
	Exp	31.0	31.0	31.0	93.0	20.3	20.3	20.3	61.0	14.0	14.0	14.0	42.0
	% WG	39.8%	50.5%	9.7%	100.0%	44.3%	47.5%	8.2%	100.0%	42.9%	52.4%	4.8%	100.0%
	% of T	12.3%	15.7%	3.0%	31.0%	9.0%	9.7%	1.7%	20.3%	6.0%	7.3%	.7%	14.0%
M	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
A	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
L	Count	0	0	0	0	0	0	0	0	0	0	0	0
	Exp	0	0	0	0	0	0	0	0	0	0	0	0
	% WG	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
K	Count	55	48	91	194	67	64	95	226	75	69	98	242
	Exp	64.7	64.7	64.7	194.0	75.3	75.3	75.3	226.0	80.7	80.7	80.7	242.0
	% WG	28.4%	24.7%	46.9%	100.0%	29.6%	28.3%	42.0%	100.0%	31.0%	28.5%	40.5%	100.0%
	% of T	18.3%	16.0%	30.3%	64.7%	22.3%	21.3%	31.7%	75.3%	25.0%	23.0%	32.7%	80.7%
T	Count	3	2	0	5	3	2	0	5	5	3	0	8
	Exp	1.7	1.7	1.7	5.0	1.7	1.7	1.7	5.0	2.7	2.7	2.7	8.0
	% WG	60.0%	40.0%	.0%	100.0%	60.0%	40.0%	.0%	100.0%	62.5%	37.5%	.0%	100.0%
	% of T	1.0%	.7%	.0%	1.7%	1.0%	.7%	.0%	1.7%	1.7%	1.0%	.0%	2.7%
KA	Count	5	3	0	8	3	5	0	8	2	6	0	8
	Exp	2.7	2.7	2.7	8.0	2.7	2.7	2.7	8.0	2.7	2.7	2.7	8.0
	% WG	62.5%	37.5%	.0%	100.0%	37.5%	62.5%	.0%	100.0%	25.0%	75.0%	.0%	100.0%
	% of T	1.7%	1.0%	.0%	2.7%	1.0%	1.7%	.0%	2.7%	.7%	2.0%	.0%	2.7%
	Test	Chi-square =49.04; p=.001				Chi-square =32.754; p=.001				Chi-square =33.560 p=.001			

Table No 140 – Showing statistical data of domain - A Clear Taste of 70% to 90 %

A Clear Taste of glass no 10

Rasa		**100%**			
		A	S	C	Total
N	Count	14	23	1	38
	Exp	12.7	12.7	12.7	38.0
	% WG	36.8%	60.5%	2.6%	100.0%
	% of T	4.7%	7.7%	.3%	12.7%
M	Count	0	0	0	0
	Exp	0	0	0	0
	% WG	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%
A	Count	0	0	0	0
	Exp	0	0	0	0
	% WG	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%
L	Count	0	0	0	0
	Exp	0	0	0	0
	% WG	.0%	.0%	.0%	.0%
	% of T	.0%	.0%	.0%	.0%
K	Count	78	72	99	249
	Exp	83.0	83.0	83.0	249.0
	% WG	31.3%	28.9%	39.8%	100.0%
	% of T	26.0%	24.0%	33.0%	83.0%
T	Count	4	2	0	6
	Exp	2.0	2.0	2.0	6.0
	% WG	66.7%	33.3%	.0%	100.0%
	% of T	1.3%	.7%	.0%	2.0%
KA	Count	4	3	0	7
	Exp	2.3	2.3	2.3	7.0
	% WG	57.1%	42.9%	.0%	100.0%
	% of T	1.3%	1.0%	.0%	2.3%
	Test	Chi-square =31.873; p=.001			

Table No 141 – Showing statistical data of domain - A Clear Taste of 100 %



Graph No 35 – Showing comparative statistical data of domain - A clear Taste of 10%, 50% & 100 %

7.3 Visual Analog Scale Score with facial expression

Grading	**Glass with 10% Concentration**		
	Adaraka	Shunti	Capsicum
0	77	68	19
1	12	13	28
2	11	12	42
3	0	7	4
4	0	0	7
Facial expression			

Table No 142 – Showing VAS at 10% concentration

Grading	**Glass with 20% Concentration**		
	Adaraka	Shunti	Capsicum
0	47	39	8
1	27	31	15
2	16	24	41
3	4	2	23
4	5	4	10
5	1	0	0
6	0	0	3
Facial expression			

Table No 143 – Showing VAS at 20% concentration

Grading	**Glass with 30% Concentration**		
	Adaraka	Shunti	Capsicum
0	22	19	2
1	33	27	7
2	25	26	11
3	10	14	31
4	8	14	44
5	1	0	2
6	1	0	3
Facial expression			

Table No 144 – Showing VAS at 30% concentration

Grading	**Glass with 40% Concentration**		
	Adaraka	Shunti	Capsicum
0	11	8	1
1	28	20	4
2	32	30	3
3	11	11	15
4	12	29	53
5	1	2	10
6	4	0	14
7	1	0	0
Facial expression			

Table No 145 – Showing VAS at 40% concentration

Grading	**Glass with 50% Concentration**		
	Adaraka	Shunti	Capsicum
0	8	3	1
1	20	10	3
2	22	23	2
3	17	18	3
4	19	26	32
5	3	10	26
6	8	9	31
7	3	0	1
8	7	1	1
Facial expression			

Table No 146 – Showing VAS at 50% concentration

Grading	**Glass with 60% Concentration**		
	Adaraka	Shunti	Capsicum
0	3	0	0
1	16	9	2
2	17	14	3
3	16	12	3
4	25	23	11
5	9	16	22
6	11	20	49
7	1	4	2
8	2	2	8
Facial expression			

Table No 147 – Showing VAS at 60% concentration

Grading	Glass with 70% Concentration		
	Adaraka	Shunti	Capsicum
0	2	1	0
1	11	6	2
2	15	8	0
3	11	6	4
4	29	22	6
5	9	14	5
6	13	28	43
7	5	8	15
8	5	6	25
9	0	0	0
10	0	1	0
Facial expression			

Table No 148 – Showing VAS at 70% concentration

Grading	Glass with 80% Concentration		
	Adaraka	Shunti	Capsicum
0	2	1	0
1	4	6	2
2	11	6	0
3	9	9	1
4	31	11	6
5	8	10	3
6	19	22	15
7	6	19	15
8	7	14	54
9	3	0	03
10	0	2	1
Facial expression			

Table No 149 – Showing VAS at 80% concentration

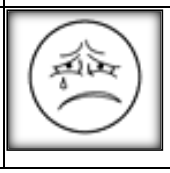
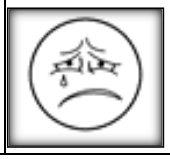
Grading	**Glass with 90% Concentration**		
	Adaraka	Shunti	Capsicum
0	1	0	0
1	4	2	2
2	8	6	0
3	8	7	1
4	20	14	3
5	9	7	1
6	24	18	6
7	6	14	11
8	15	23	53
9	3	5	18
10	2	4	5
Facial expression			

Table No 150 – Showing VAS at 90% concentration

Grading	**Glass with 100% Concentration**		
	Adaraka	Shunti	Capsicum
1	1	2	2
2	6	3	0
3	7	5	1
4	23	14	1
5	8	8	2
6	16	10	5
7	7	10	7
8	18	32	37
9	6	6	36
10	8	10	9
Facial expression			

Table No 151– Showing VAS at 100% concentration

8. DISCUSSION

Study is discussed in following steps

V. Conceptual study

VI. Analytical study /Pharmaceutical

VII. Experimental study for screening of Agnideepana activity

VIII. Taste threshold study

8.1 Conceptual study

Concept of Rasa

Among all the diverse meanings of the rasa it can be inferred that in Dravyaguna is one of the Saptapadartha and the word *Rasa* is used for perception through *Rasana* or *Rasanenedriya* (tongue or taste buds).

Symposium on the types of Rasa

The symposium on Rasa highlights number of rasa that can be considered based on various aspects. After all the discussion among the scholars Punarvasu Atreya, concluded with justifications for not accepting the opinions of many scholars and mentions that there are only six rasa,

1. Madhura - Sweet
2. Amla - Sour
3. Lavana - Salt
4. Katu - Pungent
5. Tikta - Bitter
6. Kashaya - Astringent

We find that Ashthanga Sangraha and Ashtang Hrudaya slightly changed the order where Tikta precedes Katu in the order, where it is noted that each preceding taste is stronger than the subsequent one.

Rasa-Anurasa

Every drug will have a primary taste followed by a secondary taste, Pradhanarasa and Anurasa respectively. Rasa is expressed in while Anurasa is expressed after a while or when the influence of rasa has been subsided. All dravya are having more than one rasa and hence a dravya of only a single rasa is possible. This implies that the mahabhuta combination on a stronger on a higher side will result in manifested taste, called as rasa. This will make the mahabhuta combination on a lesser strength either

avyakta or vyakta. If it becomes vyakta it is termed as Anurasa. This Anurasa will become vyakta when the action of the stronger mahabhuta in rasendriya is decreased.

On first application of the stronger mahabhuta combination (primary taste stimulus), the rate of discharge of nerve fibers from taste buds rises to a peak in a small fraction of a second but then adapts within the next few seconds back to a lower, steady level as long as the taste stimulus remains. During the phase of this discharge, the comparatively less strong mahabhuta combination (secondary taste stimulus) goes on stimulating to achieve a discharge from nerve fibers, but as the primary taste stimulus is in its peak, it will get masked. Hence, only primary taste is felt. When the primary stimulus adapts back to a lower side, the secondary taste stimulus, if then strong enough, will create a discharge of nerve fibers leading to secondary taste.

Rasa utappti (Origin of Rasa)

There are five mahabhuta. Each mahabhuta has its own vimsati gunas and a vishesa guna. Prthvi mahabhuta is Guru, Kathina, Manda and having gandha guna (vishesagya) in it. Likewise, Jala is drava, Snigdha, Picchila. Hence, it is the jalamahabhuta that forms the adhara the gustatory sense or rasa Jala mahabhuta, if present alone may not experience any specific taste manifestation of taste sensation is not present. It is termed as (not abhevarasa - absent taste discussed later). The property of jala or drava is its ability to dissolve. Hence only jalamahabhuta can dissolve and transport the taste stimulus from the substance (dravya) to the rasanendriya (taste buds) for sensing and experiencing the taste. Without jala, rasa of a dravya cannot be understood. Taste is a chemical sense to be detected for which stimulating molecule must be dissolved There is another opinion that even Prthvi mahabhuta is an adhara for taste. This is based on the reason that taste sensations are experienced only when a substance is placed on the tongue. Yastimadhu when placed on tongue gives Tikta-Madhura rasa, Takra gives Kashaya and Amlarasa. Hence, Prthvi and Jalamahabhuta are the base or rasa.

These five mahabhuta, with jala and prthvi as adharabhuta, combine in various proportions; undergo parināma (vidagdhata) in different ways to produce various tastes (rasas). Hence, rasa is panchabhautika, with varying proportion of the bhutas. Depending upon the proportion of combining mahabhuta, intensity and nature of the taste varies. This is the cause for the difference in sweetness of Kshira, Ikshurasa, Draksa, etc. As there are only 6 identifiable rasa. ach rasa is formed by predominance of two mahabhutas. Madhura rasa is having predominance of Prthvi and Amla and

Lavana has predominance of Agni and Jala. These duplet of mahabhuta which predominate in production of the particular rasa is pre-defined. This predefinition is due to the Prakriti or Swabhava, which makes these bhuta to combine in predominant way to result in a particular rasa. Hence other predominant Rasabhediya combinations like Prthvi and Agni or Jala and Vayu will not result in making rasa.

Rasa Vikalpa / Samyoga and Kalpana (Combination and Types)

The rasavikalpa focuses on the permutation and combination of the Rasa which are of much utility therapeutically, fifty-seven *Samyoga* (combinations) and sixty-three *Kalpana* (types) of *Rasas* (tastes) are enumerated.

Rasopalabdhi

RASA is identified by three means.

1. PRATYAKASA (Perception)
2. ANUMANA (Inference)
3. APTOPADESA (Textual Information)

Classification of *Rasa*

We find various opinions and their classification of Rasa and all the types of rasa that are mentioned on the panchabhoutika composition and Guna and these classifications help in the clinical aspect for the slection of the particular drug and rasa.

The classifications includes like Jala and Agni by Sushrutha, *Rasa* is attributed with different *Gunas* by Ashtanga Sangraha, Sheetavirya rasa and Ushna virya rasa which is according to Virya and according to gati it is Urdhwabhaja, Adhobhaja, Ubhayatobhaja.

Taratamtwa of Rasa (Superiority of Rasa based on its Guna)

Based on their predominance of Guna Acharya Charaka has explains Uttama, Madhyama, Avara rasa and this concept can be applied in clinical aspect also.

Rasa and Desha

The predominance of Rasa in a Desha has been explained by Acharya Vagbhata in Anupa Desha, Jangala Desha, Sadharana Desha which helps in the assessment of Prakruti of individuals as well as the Rasa of the herb can be predicted based on the desha.

Rasa and Dosha

Sadrasa are graded in to three i.e. Utama, madyama and avara. The classification is based on the rasa guna (guru-laghu, snigdha-ruksha and sita-ushna) and their effects (karma) on the body on continued consumption of corresponding dravya. Among the shadrasa, Katu rasa is important in this study as katu rasa dravaya is selected for assessing the agnideepana activity and taratamatwa.

Katu Rasa

Ushna, tikshna, laghua and vishada gunas are common to katu and pitta dosa. They are commonly origined in similar bhutas (tulya yoni). Katu increase all aspects of pitta dosha. Laghu, ruksha and vishada of katu increase vata dosha but also decrease kapha due to laghu, ruksha, and ushna guna

Rasa and Dhatu

On DATHUS: As mentioned in the review we find that there is effect of the Rasa on the Dhatus.It is based on the guna karma of the particular rasa.

Katu rasa is having ushna, ruksha and laghuguna causes decrease in Rasa, sthanya, medas and sukra and mamsa dhatus

Rasa and Mala

The effect of the Rasa on the Dhatus is based on the gunakarma of the particular rasa

KATU RASA-It causes difficulty in evacuaton (baddhavinmutrata) due to ruksha guna. Katu dries up the kledata of sveda thus sweat is reduced.

Rasa-veerya

The Rasa- veerya relation can be understood properly when we study the dravya and its Rasapanchaka .The general principle of Rasa- veerya can be ascertained as drugs and diets which are Madhura (sweet) in Rasa and Vipaka are generally of Shita Veerya and the drugs and diets those with sour and pungent taste and Vipaka are generally of Ushna Veerya.

Rasa as Vipaka

When we study the rasa and vipaka we find that there are general rules which come to the samanapratyarabdha category while the certain exceptions fall under the vichitrapratyarabdha.

Rasa as Aushadha

Rasa as Aushadha was mentioned by Acharya kashyapa who mentions concept of Rasa Chikitsa in his kashyapasamhitha, he mentions the utility of Shadrasa and its utility in treatment aspect.

Rasa Pradhanyata (Superiority of rasa)

Sushruta mentions 4 reasons in sutra sthana 40/4 and Bhadhanta Nagarjuna's has added other reasons in Rasavaiseshika sutra, Prathamodhyaya to explain rasa pradhanyata with Examples .It states that Rasa is the superior among the Rasa Panchaka.

Concept of taste

Taste or gustation (gus-TA-shun; gust=taste) is the modern physiological term similar to rasa. It is defined as a sensation that is experienced by person when a substance comes in contact with the tongue (*Rasonipate dravyaman*). The stimulus to experience the sensation is accomplished through taste buds present in the tongue. They are called as gustatory organs. These taste buds have certain chemoreceptors called as taste receptors. They are specific for each taste. They get stimulated when a particular chemical come in contact with the respective receptor. Initially these receptors were taught to be present only on taste buds, but now they are identified to be present in different parts of body . If taste receptors would sense taste, these tastes would have been experienced in other parts of the body, which is not happening.

There are six rasas have been mentioned in the classical text of Ayurveda, but modern science accept only five as a basic taste sweet, sour, salt bitter and umami, while pungent and astringent were not consider as rasa. *Katu rasa* is not a taste but it is a particular sensation, called Chemesthesis, because the sensation does not arise from taste buds but a different set of nerve fibers and astringency (*kashaya rasa*) is the dryness, caused by tannins. It is a chemical sensation generated from other nerve not from taste bud. But modern science define taste as a stimuli generate by the nerve ending of taste bud and therefore they accept five taste as basic and other are its combination while on the other hand Ayurveda define *Rasa* as any type of sensation perceived by tongue as *Rasa* (*Rasonipate dravyanam*) and should be different from tactile sensation. So pungent and astringent fulfill the criteria of definition of *rasa* as per the Ayurveda but not fulfill the definition of taste as per modern science. Thus mild variations in criteria of define *rasa* in both science and therefore numbers of *rasa* are also different in both.

Taste Threshold

Taste threshold reveal intensity of taste in drugs .To assess the *Rasa* and *Anurasa* the *taste threshold study* was carried out. We find in classical texts mentioning *Tara-tamabheda* (degree of intensity) of rasa. This was first evaluated by Dr. S. C. Dhyani by Taste Threshold methodology. He mentions in his Rasapanchaka book that among 553 drugs compiled from classical texts, only for 40 drugs classical texts were having similar opinions, and for rest 513 medicines they have controversial opinions, which may be regarding its *Rasa* or may be for *Anurasa*. Hence taste perception is the only tool for determination of the taste.

Taste threshold Methodology

WHO method for determination of Bitterness value was adopted for the *Katu rasa* (Pungent taste) determination as it is considered to be the contemporary methodology to assess the value of taste as well as this methodology of WHO has mentioned appropriate method of dilution for taste measuring. Along with Taste threshold test with the questionnaire which includes parameters mentioned in the classics and the Likert Value Scale and Visual analog Scale. Questionnaire designed were validated for internal consistency using Cronbach's Alpha. It was found that Cronbach's Alpha for the questionnaire was "good" so main study was continued with the same questionnaire.

Discussion on Katurasa

Katurasa is considered to be a part of Indian spice and it is a necessary aspect to make the food desirable. The definition of the Katu rasa tells about its characteristics and it is being documented since ages in various authentic texts. In ancient time Rasa is considered as the only tool to assess the dravya. It is mentioned in classical texts as fifth taste and in modern Physiology it is considered as pain sensation. The sensations of irritation due to the stimulation of the heat and pain receptors in the tongue.

Panchabhautiktva of Katu Rasa

Katu Rasa consisits mainly Agni and Vayu Mahabhuta, where Agni Mahabhuta has given it the Ushna and Tikshna Guna, where as Ruksha is adopted fromVayu

Relation of Ritu and Katu Rasa: The relation of Rasa-Rutu was elaborated by Indukara in his comment Katu Rasa is formed in Grishma Ritu when Vayu and Agni Mahabhootas are predominant.

Lakshana of Katu Rasa

Katu rasa predominant dravya and diet cause irritation and pain in tongue,

Burning and watering in the mouth, nose and eyes; Sushruta mentions the features which differs it from other tastes such as causing emotional fluctuation and seizing headache

Actions of Katu Rasa

Katu rasa is also called agneyarasa as it has similar properties attributed to pitta, itsushna, tikshna, ruksha, laghuand vishada properties aggravates pitta. Its ruksha, laghu, vishada properties aggravates vata. In some cases it Pacifies vata by its ushna veerya. It pacifies madhurya of kapha by its Katutva (pungency), the snigdha guna by its ruksha property, overcome its guru guna by laghu, sheeta by ushna veerya and vishada by pichchhila guna.It is causing shoshana (emaciation) in all the dhatu and decreases quantity of stanya-shukra etc. Acharya have also mentioned its avrishya property.

Atiyoga of Katu rasa

Excessive use or long term use of Katu Rasa causes Punstvopaghata, by its Vipaka, It affects the potency by its taste and causes uncontiousness, asthama, emaciation fainting, choking, giddiness, burning sensation in mouth-throat-stomach etc., hyperthermia etc. Because of Vayu Mahabhuta dominancy it also causes giddiness, burning sensation, tremors, piercing and stabbing pain in both limbs-backs etc. It may cause Kshaya of Dhatu and thus emaciation by increasing Dhautupaka

Drug Review- Discussion

HISTORICAL ASPECT OF THE DRUG

The Ardraka and Shunti are considered as appetizers and being used in India since vedic period. The review on the historical aspect of the drug shows that it was used in Vedic period in the name of Sringavera. In the Samhitha kala by Charaka in 10 gana and sushruta in 4 groups. We find it being mentioned in the name of nagara, vagbhata mentions it in the Aushada varga with its properties and use Nighantu kala we find it being mentioned in most of the Nighantu with synonyms and gunakarma.

Varieties

Ardraka and Shunti are mainly known for their pungency is used as Spices. Hence it's a commercial crop also. We find the varieties of Ginger based on the geographical area where it is grown with its various morphological characters. This helps in the selection of the particular variety during cultivation of this as crop.

Gunakarma of Ardraka and Shunti

Ardraka and Shunti both are same drug in different forms. Ardraka is in wet form while Shunti is the dry form. Various authors have mentioned its guna karma in detail as it is one among the Trikatu. But here in this study the opinion of Bhavaprakasha is considered.

As per Bhavaprakasha Nighantu we find its reference in Haritakyadi varga. It is mentioned Ardraka is having Katu rasa, madhura vipaka, ushna veerya and guru snigdha teekshna guna. While Shunti is having katu rasa, madhura vipaka, ushna veerya is study but laghu, ruksha and grahi property.

In this study this aspect variation in guna is being assessed in terms of its effect on agni, mala in the experimental model of Deepana as well as the taratamatwa of the katurasa in both Ardraka (wet ginger) and Shunti (Dry Ginger).

Therapeutic Uses

Ardraka and Shunti are used in diet since ages and is one among the Indian spice. It is known for its pungent taste which makes it to be used as appetizer. Hence we find lot of therapeutic uses of it in both fresh and dry form as well as home remedies. Around 52 formulations have been highlighted in the review aspect. Still we can find in the classics this drug being used in many formulations as it is one among Trikatu.

Discussion on *Zingiber officinale*

Even though Ginger was given the botanical term in 17th century it was being extensively used in Indian Cuisine since ages because of its flavour, food preservation and enhances the palatability of food articles. It was also used extensively as a folklore drug for treating many ailments. On review of the drug *Zingiber officinale* we find that they are known to be rich in Phytoconstituents. It has a number of chemical constituents like [6]-Gingerol, [6]- Shagol, Methyl [6] - isogingerol, Paradol which are responsible to provide different pharmacological actions. It shows multifaceted pharmacological activity such as activities such as Anti-microbial, Anti-inflammatory activity Cardio protective, Antioxidant property, Anti-proliferative, Neuro-protective and Hepatoprotective activity.[113] Recent researchers have found that it is less toxic with more potent Pharmacological principles .

The unique flavour of Ginger is because of the properties and the combination of pungency and aroma. The non-volatile phenolic compounds impart pungency

Where as essential oil gives the characteristic aroma. It has two primary extracts: oleoresin and essential (or volatile) oil.

The oleoresin is a solvent extract (usually in acetone or ethanol) Containing both essential oil and the phenolic compounds responsible for the pungency of ginger, chiefly [6]-gingerol and to a lesser extent [8] - and [10]-gingerol. The shogaols, are dehydration products of gingerols formed in heat-treated ginger, are also found in oleoresin. Ginger oleoresin is used extensively as a flavouring agent in the food and beverage industries. [114]

Concept of Deepana

Deepana is defined as the one which increases agni without doing Amapachana. Various classical texts have highlighted the Deepana karma and shanghadhara explains in detail this concept with examples under Karma chapter. Deepaniya dravya are known to have Agni mahabhuta pradhanyata. Some of the Deepaniya dravya are also known to have Pachana property as the dravya mentioned in deepaniya mahakashaya are also known to have Pachana action. Among the shadrasa Amla, katu, tikta and lavana are known to have this Deepana property. Katurasa being used in diet and medicine is being preferred here for the study of Deepana activity and Ardraka and Shunti both are different forms of the same drug are known for katu rasa and deepaniya action being commonly used in food and medicine.

Discussion on Drug Selection

Katu rasa (Pungent taste) is commonly used in diet by which the food is made more desirable. There are many katu rasa dravya mentioned in classics which are mainly mentioned in katu skandha dravya as well as in charakokta dashemani also. Among this we find that Shunti is one of the Katu rasa dravya very commonly used in diet as well as in medicine. It is mainly used as ingredient of Trikatu– Panchakola-Shadushana. This drug is being used in diet and medicine in wet and dry form and being called as Ardraka (Wet Ginger) and Shunti (Dry Ginger) respectively. Katu rasa Dravya are being commonly used as appetizers and we find it being mentioned by Charaka in Deepaniya mahakashaya.

All the classical texts have reported both forms Ardraka and Shunti having katu rasa-Pungent taste According to Bhavaprakasha, Ardraka and Shunti both are having Katurasa, ushnaveerya and Madhura vipaka but difference in Guna is seen. Ardraka is having Guru, Ushna and Teekshna while Shunti is having laghu, ruksha and grahi property. Hence this drug was selected to evaluate the taratamatwa of katurasa with Deepana activity in relation to guna and vipaka. The fresh form of the drug Ardraka was collected from the natural habitat and for dry form it was dried and used for the

study. Here the comparison of two drugs in causing the agnideepana will be done to assess the efficacy of rasa or vipaka. Hence this study is taken with the point of view of evaluating whether the drug is acting by virtue of its rasa or by virtue of vipaka or whether there is synergistic action of rasa and vipaka in causing deepana karma in these two drugs.

8.2 DISCUSSION ON Analytical study /Pharmaceutical

Physiochemical/Pharmaceutical analysis- (Protocol followed API Part I)

Sl No	**Parameter**	**Ardraka**	**Shunti**	**API Standards forShunti**
10.	Foreign matter	0.5%	0.3%	Not more than 1%
11.	Loss on drying, *wlw*	84.40 %	12.00%	not more than12.0 per cent
12.	Mesh size of the powder	Not more than 40% through the sieve no 355	Not more than 40% through the sieve no 250	
13.	Angle of repose	34.6°	39.5 °	
14.	pH (10.0% aqueous solution)	7.74	4.48	
15.	Ash value, w/w	1.04 %	4.48 %	Not more than 6%
16.	Acid - insoluble ash, w/w	0.07 %	0.71%	Not more than 1.5%
17.	Water - soluble extractive, w/w	3.79%	13.62 %	Not less than 10%
18.	Alcohol - Soluble extractive, wM	2.68%	6.72%	Not more than 3%

- On Physicochemical and pharmaceutical analysis, it was found that all the parameters assessed are within the standards prescribed in API. Shunti is found to be having less foreign matter.
- Loss on drying with 0.3% and 12.00% respectively which is due to cleaning and drying of wet Ginger, there will be less quantity of moisture in Shunti.

- Mesh size of the powder in Ardraka Not more than 40% through the sieve no 355 while in Shunti it was found to be not more than 40% through the sieve no 250.Ardraka is the fresh form of the drug while Shunti had more fibers as it was dry form.
- In Angle of repose - The angles were formed on drying the Ardraka. The numbers of angles were more in dry ginger than wet Ginger.
- The pH (10.0% aqueous solution) of Ardraka (wet Ginger) was 7.74 indicating that it is more alkaline then Shunti (Dry Ginger) with 4.48 which is acidic in nature. The alkaline pH of Ardraka (wet Ginger) is because of more water content as it is in the fresh form. Shunti as shown acidic pH which is due to the pungent principles present in it as it is in dry form and the phytochemicals are present in more concentrated form.

On evaluating Ardraka (wet Ginger) and Shunti (Dry Ginger) it was found that both have shown Ash value, w/w, Acid - insoluble ash, w/w,Water - soluble extractive, w/w,Alcohol - Soluble extractive, wM are within limits as mentioned in API strands. Adulteration may also take the form of the addition of 'spent ginger' which has been exhausted in the preparations of essence. This may be detected by the official standards for alcohol- soluble extractive, waters soluble extractives, total ash and water solubleash.[115]As the values of Ardraka and Shunti in Pharmaceutical analysis are within the limits, it is not adulterated.

Preliminary phytochemical screening- (Protocol followed API Part I)

Sl No	Parameter	Ardraka	Shunti
8.	Flavonoids	Present	Present
9.	Alkaloids	Absent	Absent
10.	Carbohydrates	Absent	Absent
11.	Amino acids	Present	Present
12.	Triterpenoids steroids	Absent	Absent
13.	Glycosides	Absent	Absent
14.	Saponins	Present	Present

The secondary metabolites found in the rhizome of Ginger that are of primary interest can broadly be divided into volatile compounds (extractable by steam distillation) and non-volatile Phenolic compounds, the major ones of which have pungent properties. It is generally considered that the pharmacological activity of Ginger rhizome resides with Compounds from these classes, in particular the non-volatile pungent phenolic

compounds. Ginger owes its pungency to phenolic compounds. In the fresh rhizome the major type comprises a series of homologous phenolic alkanones known as gingerols and derivatives there of such as gingerdiols.

Thin Layer Chromatography

Parameters	**Ardraka Rf value**	**Shunti Rf value**	**As per API**
Under UV 254 nm major spots	0.60 (grey)	0.60 (grey)	
after derivatization of vanillin-sulphuric acid reagent major spots	0.16 (violet)	0.16 (violet)	
	0.22(violet)	0.22(violet)	
	0.27(violet)	0.27(violet)	
	0.40 (Brown)	0.54 (Brown)	0.5 (Brown) Gingerol
	0.63(violet)	0.63(violet)	
	0.68 (light violet)	0.68 (light violet)	
	0.77(light violet)	0.77(light violet)	

This is an qualitative analysis and indicates the presence of the phytochemicals. In this study the major spots that were identified with the Rf value of 0.40 (Brown) in Ardraka (wet ginger) and 0.54 (Brown) in Shunti (dry ginger) which is near to the Rf value of 0.5 (Gingerol) mentioned as per API standards. For further analysis and estimation Gingerol and other active pungent principles, a higher technique of Chromatography was adopted.

On consultation with expert in Chromatography, they suggested to analyze the pungent principles of both form of ginger by HPLC technique rather than HPTLC because it gives more accurate values.

HPLC study

Comparative Analytical results of *Ardraka* and *Shunth* by HPLC

Sl No	**Test**	**Results**		**Protocol**
		Ardraka	**Shunti**	
3.	Description	Brown wet rhizome	Brown dry rhizome	By visual
4.	**Assay %(w/w)**			

vi.	6-Gingerol%(w/w)	0.16	0.37	By HPLC
vii.	8- Gingerol%(w/w)	0.03	0.06	
viii.	6-Shogaol%(w/w)	0.003	0.100	
ix.	10- Gingerol%(w/w)	0.04	0.08	
x.	Total pungent compounds as 6- Gingerol%(w/w)	0.23	0.61	

Standard marker reference component was used in HPLC study to quantify the pungent principles. The results of the analysis revealed that, total pungent compounds as 6- Gingerol %(w/w) 8- Gingerol %(w/w) 6-Shogaol %(w/w) 10- Gingerol%(w/w) were estimated indicating that Shunti (0.61) has more pungent components than Ardraka (0.23).[116 ,117]

Gas Chromatography with Mass Spectrophotometric (GC-MS)

Ardraka (Wet *Zingiber officinale* Roscoe)

PK	**RT**	**AREA PCT**	**AREA**	**LIBRARY/ID**
32.	14.1973	26.7253	2402517271	Butan-2-one,4-(3-hydroxyl-2-methoxyphenyl)-**GINGEROL**

Shunti (Dry *Zingiber officinale* Roscoe)

PK	**RT**	**AREA PCT**	**AREA**	**LIBRARY/ID**
2	14.2048	19.2132	3000898666	Butan-2-one,4-(hydroxyl-2-methoxyphenyl)-**GINGEROL**

Gingerol was estimated in GCMS which shows that Ardraka shows more gingerol (26.7253) than Shunti (19.132) .This is because Gingerols are converted into the shogoals because of heat and drying and hence we find less Gingerols in Shunti.

The principal of these compounds is [6]-gingerol with 8- and 10- gingerol occurring in lower concentrations (Connell & Sutherland, 1969; Denniff*et al.*,1981) When subjected to heat or alkali treatment, gingerols are converted to a corresponding series of homologous shogaols by dehydration and/or to the compound zingerone (Connell, 1969; Connell & Sutherland, 1969). The shogaols possess greater pungency than the corresponding gingerols (Denniff*et al.*, 1981).

Shogoals: Shogaol is a dehydrated 6-gingerol molecule that has lost a molecule of water during the drying or cooking process. Shogaols are pungent constituents of

ginger, Shogaol is rated 160,000 SHU on Scoville scale. When compared to other pungent compounds, shogaol is moderately more pungent than piperine, but less than capsaicin. (4)-Shogaol, (8)-shogaol, (10)-sshogaol, and (12)-shogaol (all found in ginger) together constitute the group shogaols.

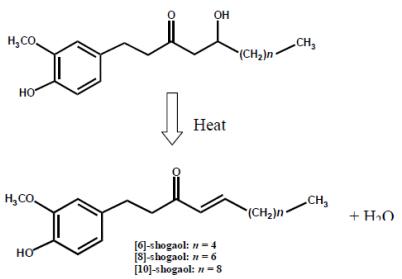
Gingerols in fresh ginger

Several studies have reported on the concentration of gingerols in fresh Ginger rhizomes. Zhang and colleagues analysed by reversed-phase high-performance liquid chromatography (HPLC) freshly harvested rhizomes from Hawaii extracted with methanol, and found the concentration of [6]-gingerol to be 2100 μg per gram fresh rhizome. The corresponding concentrations of [8]- and [10]-gingerol were 288 and 533 μg/g, respectively (Zhang *et al.*,1994).

The considerable variation in gingerol concentrations across these studies may reflect genetic or environmental differences, as well as the variable methodological approaches, or a combination of these. Because Ginger is a sterile cultigen with a very long history of cultivation in different parts of the world, genetic differences between clones are likely to be an important determinant of variation in secondary metabolites.

Gingerol degradation products

Connell (1 969) commented on the remarkable extent to which chemical changes occur in ginger. It is interesting to note that these changes are reflected in the different therapeutic applications of fresh and processed Ginger in Oriental medicine (Hikino, 1985).The main pungent compounds in fresh ginger, [6]-, [8]- and [10]-gingerol, are thermally unstable and can undergo at least two reactions (Connell, 1969; Connell & Sutherland,1969).Firstly, [6]-, [8]- and [10]-gingerol can undergo dehydration and convert to [6]-, [8]- and[10]-shogaol, respectively, when exposed to high temperature or subjected to prolonged storage (He *et al.*, 1998; Zhang *et al.*, 1994).[116,117]



Dehydration of Gingerols to Shogoals

8.3 DISCUSSION ON EXPERIMENTAL STUDY- DEEPANA ACTIVITY

Discussion on Deepana activity model selection

The aim of the present research work was to evaluate and access the Katu rasa and its taratamatwa with its Deepana karma of two state of Ginger (wet and dry). For this the Deepana model established by Dr Ravishankar B[118]was selectedwith slight modificatons,as this model gives appropriate estimation of the criteria and concepts of Deepana with factors such as accessing the status of Agni (metabolic activity) with food intake, Food conversion Ratio etc along with biochemical parameters such as estimation of protein, carbohydrate etc

The following Parameters were used for assessment of Deepana – Pachana activity,

1. Food Intake
2. Water Intake
3. Urine output
4. Fecal wet absolute
5. Feacal Dry
6. Fecal water content
7. Food conversion Ratio (F.C.R)
8. Body weight change
9. Bio chemical analysis- In gastric Juice-Volume, total& free acids, peptic activity, total Protein and total Carbohydrate ratio (Tp:TC) was considered

1. Food Intake

a) Absolute value

A significant decrease in the mean food intake absolute values irrespective of the group was found from preliminary to Therapeutic phase as observed F value of 25.928 was found to be significant .001 level.

b) Relative value

Group	Preliminary		Therapeutic		
	Mean	S.D	Mean	S.D	**% change**
Control	10.0407	.96858	7.7362	.64507	2.34
Shunti	8.2143	1.01310	6.9422	1.39288	1.27
Ardraka	6.5240	.95254	5.2212	.85100	1.3

The food intake has to be considered with respect to the status of food intake during the therapeutic phase in comparison to the baseline values recorded during the drug free preliminary phase. The dose was fixed based on the body weight of the animals

and not after examining the Prakriti of the animals. The study showed that there is decrease of food intake irrespective of groups from preliminary to therapeutic phase.

The observed f value of 25.928and67.582was found to be significant at 0.01 levels. As it was found to be significant at .001(both absolute and relative value), hence the mean value of one way descriptive (Table NO-77)is considered here for discussion to clearly differentiate the difference in decreased food intake between the test groups Shunti and Ardraka.

One –Way Descriptive

Foodabsolute	Control	9.8550
	Shunti	11.8420
	Ardraka	21.4693
	Total	14.3888
Foodrelative	Control	22.5405
	Shunti	16.0114
	Ardraka	19.3101
	Total	19.2873

With the observation values of mean of food intake it was found that Shunti group (16.0014) intake is less while Ardraka group is more in both criteria of Absolute and relative value(19.3101)

Shunti is said to have Madhura Vipaka because of which there will be delayed digestion and metabolism. While Ardraka even though has madhura vipaka it is having more intake value in both absolute and relative values, which indicate the Deepana action and it could be because of ushna, teekshna guna and katu rasa.

2. Water Intake

a) Absolute Value

A non-significant change seen in the water intake absolute values irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of .287was found to be non-significant at 0.600 level .

b) Relative value

Group	**Water intake in ml (relative values)**		
	Preliminary phase Mean +_ SEM	**Therapeutic phase Mean +_ SEM**	**% change**
Control	11.5977	10.1067	1.491
Shunti	10.2290	9.2900	0.939
Ardraka	11.9113	14.6457	-2.7344

One way Descriptive Table

Water absolute	Control	-3.7027
	Shunti	2.0456
	Ardraka	-14.3142
	Total	-5.3238
Waterrelative	Control	11.1940
	Shunti	6.8761
	Ardraka	-29.0325
	Total	-3.6541

In water intake relative value there is significant difference between the groups. Water intake is essential for digestion of food .Relative increase in water intake (relative value)was seen in Ardraka group with mean difference of 2.7344 as compared with the Shunti group of mean value 0.939 ,indicating the requirement of water for better digestion and absorption of food. Among water intake relative value there is significant difference between the groups which could be because of the Deepana and Pachana property of Ardraka is more with Ushna guna,Katurasa and Katuvipaka.

3. Urine output

a) Absolute Value

A significant decrease in Urine output absolute values irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of 18.406 was found to be significant at .001 levels.

b) Relative Value

Group	**Urine output in ml (relative values)**		
	Preliminary phase Mean +_ SEM	**Therapeutic phase Mean +_ SEM**	**% change**
Control	2.0957	.8482	1.2475
Shunti	1.6310	.8797	0.7513
Ardraka	3.7247	2.9132	0.8115

A significant decrease in Urine output relative values irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of 14.740 was found to be significant at .001 level.With the observed values of urine output, Ardraka group has shown relatively decrease in urine output from preliminary to therapeutic phase with change of 0.8115 while Shunti has shown with 0.7513.

One way Descriptive Table

Urine absolute	Control	44.0498
	Shunti	44.1204
	Ardraka	17.9666
	Total	35.3789
Urine relative	Control	52.7115
	Shunti	32.4950
	Ardraka	16.3768
	Total	33.8611

In one way descriptive also Ardraka Urine absolute and relative value of 17.9666 and 16.3768 is found respectively which is less when compared with the Shunti group with absolute and relative value of 44.1204 and 32.4950 respectively.

The relative decrease of urine output in Ardraka is due to Ruksha, Teekshna guna which decreases the urine output while Shunti is said to be having Laghu, Snigdhaguna and Madhura vipaka which does not cause mutrakrichra, but causes srustavinmutra.

4. Fecal wet

a) Absolute value

A significant decrease in faecal wet absolute value irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of 9.129 was found to be significant at .009 level.

b) Relative value

Group	**Feacalwet ingms (relative values)**		
	Preliminary phase Mean +_ SEM	**Therapeutic phase Mean +_ SEM**	**% change**
Control	5.1553	3.9128	1.2425
Shunti	5.1047	4.7683	0.3364
Ardraka	3.0793	1.9975	1.0818

A significant decrease in Faecal wet relative value irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of 26.702 was found to be significant at .001 level.

One way Descriptive Table

Fecalwet absolute	Control	6	9.0590
	Shunti	6	1.0579
	Ardraka	6	35.5790
	Total	18	15.2320
Fecal wet relative	Control	6	22.7949
	Shunti	6	6.2074
	Ardraka	6	33.7126
	Total	18	20.9049

On considering the mean value of one way descriptive analysis it was found that Shunti faecal wet mean is 6.2074 which is comparatively very less to Ardraka having mean value of 33.7126.This clearly indicates the grahi property of the Shunti which does the dravashoshana and malashoshana.[119]

Feacal Dry

1. **Absolute value**

A significant decrease in faecal dry absolute value irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of 12.292 was found to be significant at .003 level.

b) Relative value

Group	**Feacaldry ingms (relative values)**		
	Preliminary phase Mean +_ SEM	**Therapeutic phase Mean +_ SEM**	**% change**
Control	5.1553	3.9128	1.2425
Shunti	5.1047	4.7683	0.3364
Ardraka	3.0793	1.9975	1.0818

A significant decrease in Faecal dry relative value irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of 42.406 was found to be significant at .001 level.

One way Descriptive Table

Fecaldry absolute	Control	6	3.8457
	Shunti	6	1.1357
	Ardraka	6	38.3951
	Total	18	14.4588

Fecal dry relative	Control	6	18.1563
	Shunti	6	6.1781
	Ardraka	6	36.2289
	Total	18	20.1878

On observing the mean value in one way descriptive it was found that Shunti has mean value of 6.1781 which is relatively very less as compared with Ardraka with 36. 2289. This is attributed to the Grahi property of Shunti which does the malashoshanakarma, whileArdrakadoes not show the Grahi property but is only Ushnateekshnaguna.

5. Fecal water

Fecal water is indicative of the (Aapmahabhuta) water content in the fecal matter of rats.Feacal water is calculated as follows

- Fecal wet- Fecal Dry = Fecal water

a. Absolute value

A significant decrease in faecal water absolute value irrespective of the groups was observed from preliminary phase to therapeutic phase as the observed F value of 41.006 was found to be significant at. 001 level.

b. Relative value

Group	**Feacal water (relative values)**		
	Preliminary phase Mean +_ SEM	**Therapeutic phase Mean +_ SEM**	**% change**
Control	4.1797	4.2222	-0.0425
Shunti	4.1280	2.9622	1.1658
Ardraka	5.2217	6.8013	-1.5796

Group-wise comparisons made; significant difference was observed (F= 8.750; p=.003) indicating a similarity in the decrease of Faecal water relative value in all the three selected groups. Hence to clearly differentiate between Shunti and Ardraka regarding faecal water,the mean value in one way descriptive istaken.

One way Descriptive Table

Fecalwater absolute	Control	26.2668
	Shunti	20.6157
	Ardraka	44.6996
	Total	30.5273
Fecalwaterrelative	Control	-1.2507
	Shunti	26.4512
	Ardraka	-33.4999

	Total	-2.7665

It shows that Shunti has relatively less faecal water content with 20.6157 as compared with the Ardrakawith 44. 6996. This is due to Grahi property of Shunti.

6. Food conversion Ratio (F.C.R)

Food conversion Ratio (F.C.R) = Food intake /fecal output

Group	**Preliminary phase Mean +_ SEM**	**Therapeutic phase Mean +_ SEM**
Control	4.17967	4.22217
Shunti	5.22167	2.96217
Ardraka	4.12800	6.80133

Increase in FCR indicating more of Pachana than Deepana. Shunti and Ardraka both are having Deepana and Pachana action. In this study it was found that Ardraka is having more Pachana action.The difference between Deepana and Pachana action is because of the amount of Agneyaguna.

The descriptive statistics of food conversion ratio shows FCR value of 2.96217 for Shunti while Ardraka has 6.80133.This indicates that Ardraka is having more Pachana effect while Shunti has less Pachana effect comparatively. Increase in food intake is shown that Ardraka is having Katu,Ushna, Teeksha is having more Pachana and less Bhedanakarma, while Shunti is having Katu, Madhurarasa, Ushnaguna and Grahi karma, Pachanadravya are known to have mild Deepana action

7. Body weight change

Group	**Body weight Change**			
	Preliminary phase Mean +_ SEM	**S.D**	**Therapeutic phase Mean +_ SEM**	**S.D**
Control	14.2187	6.29807	18.7050	5.14339
Shunti	7.8167	3.77387	-1.4917	3.34584
Ardraka	-1.7750	5.00309	-8.6767	4.06007

Body weight has decreased from preliminary to therapeutic phase in both test groups while control group has shown increase in body weight (from14.2187 to18.7050).Body weight of Ardraka (from preliminary phase -1.7750 to -8.6767 therapeutic phase)is found to be relatively very less as compared with the Shunti (from preliminary phase 7.8167 to -1.4917 thr.phase).This shows the property of Ardraka being katurasa, Ruksha Teekshna, ushnaguna, while Shunti having katu rasa,

Laghu, snigdha, grahi and madhura vipaka. Both are having Deepana and pachana property but Ardraka has shown relatively more deepana than Shunti.

Effect of Guna on Dhatu, Mala and Agni

	Dhatu	**Mala**	**Agni**
Teekshnaguna	Dhatu kshaya	Malakshaya	Agnivardaka
Ushna	Dhatu kshaya	Malakshaya	Agnivardaka
Laghu	Dhatu kshaya	Malakshaya	Agnivardaka
Ruksha	Dhatu kshaya	Malakshaya	Agni mandyakara
Snigdha	Dhatu vriddhi	Mala vriddhi	Agni vardaka

8. **Bio chemical analysis**

One-way Descriptive analyses: mean values of Bio chemical parameters,

Sl no	**Particulars**	**Control**	**Ardraka (wet ginger)**	**Shunti (dry ginger)**
1.	Stomach Weight	**1.72338***	1.5968	1.6665
2.	Gastric juice	7.4000	6.1000	**8.8500***
3.	pH	2.3333	2.6667	**2.0000***
4.	Total acid	3.5000	3.4333	**4.3000***
5.	Free acid	2.0333	1.8000	**2.3833***
6.	Carbohydrate	671.8333	540.0000	**673.5000***
7.	Total protein	1903.3333	**4243.3333***	1616.6667
8.	D- peptic Activity	103.7333	**184.1333***	46.0500

(Note- Bold font and the * mark indicates the increased value as compared with other values)

1. **Stomach weight**- is more with **1.72338*** in comparison with Ardraka and Shunti group. The test drug groups show less value because of the gastric contents and the interaction of the test drug on the stomach.
2. **Gastric juice-** The mean value of gastric juice quantity is relatively found to be increased in Shunti group with **8.8500***in comparison with Control and Ardraka group. It is indicative of the interaction of the Shunti on the layers of the stomach and cells that secrete gastric juice.
3. **pH** - All the three groups gastric juice has shown acidic nature but on comparison it was found that Shunti group has shown relatively more acidic in nature with 2.0000*.It is because of the presence of more pungent component Shogoals .

4. **Total acid-** On comparison with the three groups it was found that total acids value is relatively increased in Shunti with**4.3000*** while Ardraka 3.4333 and control groups 3.5000.It refers to the increased or more presence of pungent compound in Shunti because of shogoals which are considered to be more pungent than Gingerols.
5. **Free acid –** The free acid value estimated in Shunti was **2.3833**which is more than Ardraka with1.8000.This is indicative of more Pungent components in the Shunti.
6. **Carbohydrate –**The carbohydrate value of **673.5000** was found in Shunti while Ardraka showed 540.0000.
7. **Total protein –** The total protein in Ardraka was **4243.3333**which is relatively higher than Shunti with 1616.6667 and control group having 1903.3333.This is indicative of better fragmentation of food in Ardraka group which in turn attributes for Pachana activity being more in Ardraka than Shunti Group.
8. **Peptic Activity** –Increase in the Peptic activity indicates that there is more Protein breakdown and metabolism .This is indicative of the Pachana activity of Ardraka more than Deepana and it is relatively higher than Shunti .Increase in the peptic activity indicates more digestion and metabolism which is indicated by the more protein breakdown and hence the protein value of Ardraka is **4243.3333** which is relatively higher than Shunti with 1616.6667 and control group having 1903.3333.

8.4 Taste Threshold Study(Rasa Nirdharana)

Taste Threshold Study Methodology Selection Criteria Discussion

Taste Threshold Method is a semi-objective physical method designed to measure the intensity of the taste of a drug / food. The term 'Taste-threshold' is first used by Dr.Wischy of Germany. It implies to the minimum quantity of substance (Dravya) required stimulating the taste buds in human being. Before the initiation of the main study, pilot study was done which mainly emphasized on validating the questionnaire for taste threshold for Rasanirdharana to assess the taratamatwa of Katurasa.

The classical subjective criterion mentioned by Acharya Charaka was taken for this study. Each of the criteria like tudativacha was considered as a domain for assessment. Total of seven domains was taken in study. This is an effort to convert the subjective criteria to make it to objective by grading them.

The next set of questionnaire was included from the Likert value scale questionnaire which is based on the positive information rating scale published by Gregson. It

focuses on assessing the taste of the drug/liquid in different gradings. This scale was adopted in this with slight modification by adding Shadrasa under the grading.

The last set of questionnaires was from the Visual Analog scale which represents the subjective feelings on tasting the liquid in terms of facial expression.

In this study the taste as the aim was to assess the taratamatva of Katau rasa in Ardraka and Shunti and Katurasa –pungent taste is considered to be a pain sensation in modern science. Hence the visual analog scale (V.A.S) to assess the pain fits here in this assessment of taste threshold of katu rasa. Even from classical perspective also the lakshana of katurasa such as Chakshuvirechayati (secretions through mouth, nose and eye) can be better assessed by using this Visual analog scale (V.A.S). Thus, this Visual analog scale was adopted in this study.

The pilot study with 30 participants in each group of Ardraka, Shunti, Capsicum was validated for internal consistency using Cronbach's alpha showed the on assessing for the internal consistency, it was 0.836 which comes in the category of- Good. Hence these questionnaires were adopted for the main research with 300 samples without any modifications.

Discussion on Pungency value calculation

The pungency value was of the test samples Ardraka and Shunti were evaluated by using the Bitterness value calculation methodology of W.H.O. The pungency value was calculated for both the test samples and mean value was taken. It showed that Shunti is having relatively more pungent value with 2.3 while Ardraka is known to have 2.9 (Pungency decreases with higher the mean value). This could be due to the more water content in Ardraka (wet ginger) which is the fresh form of the drug. The phytoconstituents will be concentrated on drying; hence more pungent principles are present in Shunti (dry ginger). Analytical study has also shown that there are more pungent principles in Shunti than Ardraka.

Rationality for Magnitute Range for Assesment of Taste Treshold

The magnitude of Dilution from (one concentration) one glass to another glass is only 10ml. there was very less or no significant difference observed in the perception by the individuals and it is rather confusing. Hence for the study and analysis the magnitude range was fixed as 0-10 (10%) 10-50 (50%) 50 -100 (100%) and results were analyzed and interpreted.

Discussion on assessment Domains

1. Irritation on Tongue(*Tudativacha*)

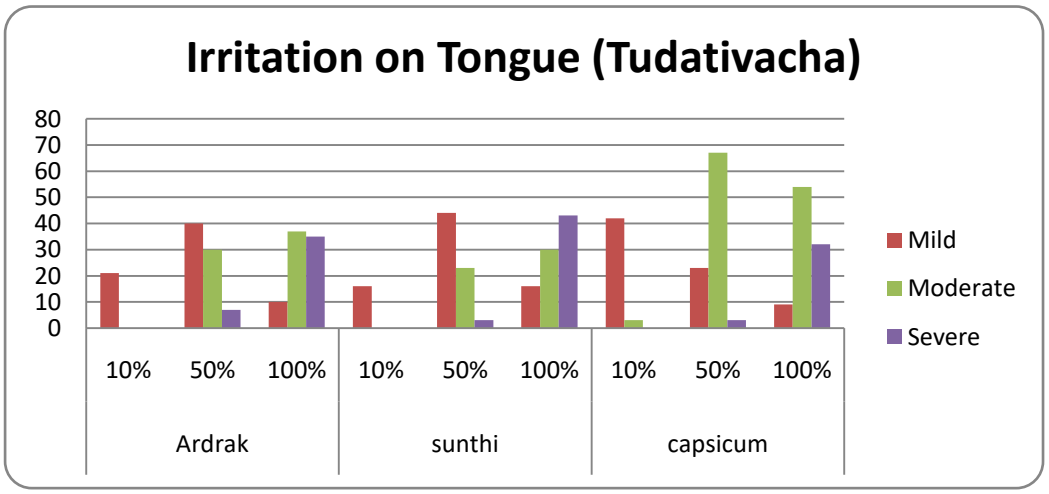
2. Pricking /Tingling sensation(*Chimchimayana*)
3. Burning sensation in Mouth /Chest(*Daha*)
4. Secretions through mouth ,nose and Eye (*Chakshurvirechayati*)
5. Burning sensation in chest and abdomen(*Vidahatideham*)
6. Irritation in the nasopharangeal region (*Kanta and Shiropradesha*)
7. Excessive salivation (*AasyaSravana*)

Distribution of Gender: The gender distribution shows the presence of female gender more than the male as in the place where the study was conducted the ration of female is more compared to the male.

On cross tabulation age and the gender equal distribution of cases was seen in all the three groups of Ardraka, Shunti and Capsicum.

1. **Irritation on the tongue**

Irritation on Tongue (Tudativacha)									
	Ardrak			Shunti			Capsicum		
	10%	50%	100%	10%	50%	100%	10%	50%	100%
Mild	21	40	10	16	44	16	42	23	9
Moderate	0	30	37	0	23	30	3	67	54
Severe	0	7	35	0	3	43	0	3	32



Graph No 25 – Showing comparative statistical data of domain - A faint Taste of 10%, 50% & 100 %

The criteria (Tudativacha) irritation on the tongue on applying chi-square test among the three groups has shown that Capsicum in less concentration is causing irritation on the tongue at 10%,20%,30%,60%70% while Ardraka has shown this feature of

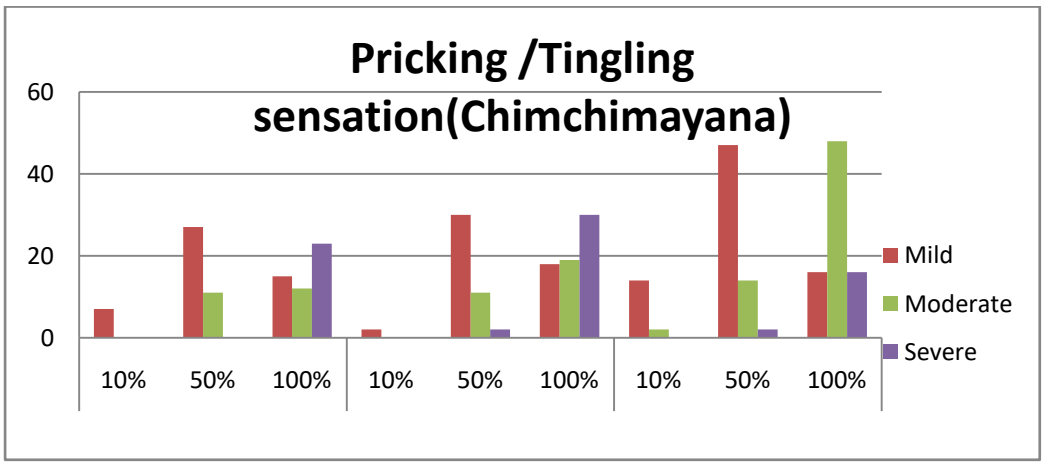
irritation on tongue more at 50%80%90%followed by Shunti at 40%,70%,100% .With this it is clear that it's very difficult to assess the severity of this feature of irritation on the tongue from one concentration to the next concentration of the test drug as well as control group of capsicum because the margin difference of concentration solution is very less between the two test tubes of samples. Hence, we have considered here for evaluation 10%, 50% and 100% as the landmark concentration with which the assessment of katurasa lakshana and taratamatwa can be done in appropriate way.

At 10% control group drug Capsicum has shown more severity with + and ++ ,than other two test groups (Ardraka and Shunti).At 50% Capsicum and Ardraka has shown comparatively more percentage of irritation on tongue with ++ and +++ , than other two groups and at 100% level concentration capsicum with ++ and Shunti has shown relatively more percentage of irritation on tongue with +++

Tudativacha is the irritation sensation in the tip of the tongue. The tip of the tongue is very soft and has a large supply of tactile nerve endings. This tudativacha is the feeling of sparsha of agni jwala on tongue which is due to the tikshna and ushnaguna of katurasa dravya. Hence this feature is appreciated in all the three groups but their percentage variation is found from one concentration to the next concentration.

2. Pricking/tingling sensation (Chimchimayana)

	Ardraka			Shunti			Capsicum		
	10%	50%	100%	10%	50%	100%	10%	50%	100%
Mild	7	27	15	2	30	18	14	47	16
Moderate	0	11	12	0	11	19	2	14	48
Severe	0	0	23	0	2	30	0	2	16



Graph No 26 – Showing comparative statistical data of domain - Pricking /Tingling sensation (Chimchimayana) at 10%,50% & 100 %

At 10% Control group capsicum has shown + and ++ with 14% and 2%. Among the test groups Ardraka has shown relatively more feature of pricking/tingling sensation (Chimchimayana) than Shunti group with + at 7% and Shunti being + at 2%.

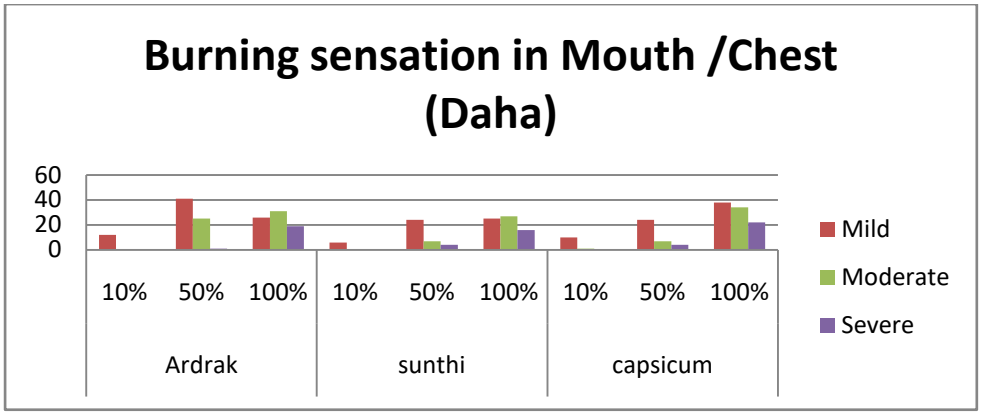
At 50 % concentration Capsicum group a greater number of participants have shown grading of ++ with 14 % while among test groups it was found that Ardraka group has shown 11% with ++ grading and 2 % with +++ grading as compared with Shunti group of 11% with ++ and 2% with +++ grading.

At 100% concentration it was found that control capsicum group with 48% at ++ grading and among test drugs Shunti with relatively higher than Ardraka with 19% at ++.In the +++ grading it was found that Shunti has shown higher value of 30% followed by Ardraka with 23%.Chimchimayana-Pricking/tingling sensation is the tingling sensation. Jihwagraudwejana also refers to the tingling sensation**.** The tip of the tongue is very soft and has a large supply of tactile nerve endings. This tudativacha is the feeling of sparsha of agnijwala on tongue which is due to the tikshna and ushnaguna of katurasadravya. This is termed as hyperesthesia and it is due to the irritation of the nerves. Teekshna and Ushnaguna is found in all the three drugs in taratama bhava of Ardraka, Shunti and capsicum and hence this feature is appreciated.

Overall among the test groups in this criterion Shunti has shown relatively higher percentage of Chimchimayanathan Shunti.

3. Burning sensation in Mouth /Chest (Daha)

	Ardraka			Shunti			Capsicum		
	10%	50%	100%	10%	50%	100%	10%	50%	100%
Mild	12	41	26	6	24	25	10	24	38
Moderate	0	25	31	0	7	27	1	7	34
Severe	0	1	19	0	4	16	0	4	22

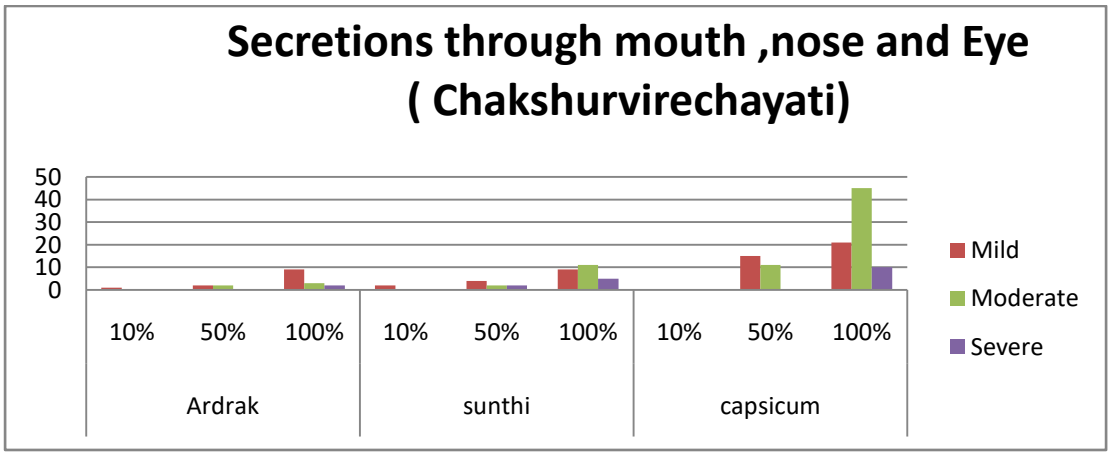


Graph No 27 – Showing comparative statistical data of domain - Burning sensation in Mouth /Chest (Daha) at 10%,50% & 100 %

At 10% in Ardraka group we find that there are 12 volunteers mentioning the mild grade of burning sensation. While in case of Shunti it was 6%.while capsicum has shown highest number of volunteers with burning sensation in mouth and chest.

4. Secretions through Mouth,Nose and Eye(Chakshuvirechayati)

	Ardraka			Shunti			Capsicum		
	10%	50%	100%	10%	50%	100%	10%	50%	100%
Mild	1	2	9	2	4	9	0	15	21
Moderate	0	2	3	0	2	11	0	11	45
Severe	0	0	2	0	2	5	0	0	10



Graph No 28 –Showing comparative statistical data of domain-Secretions through mouth nose and eye (Chakshurvirechayati) at 10%, 50% & 100%

At 10% concentration it was found that its very less of secreations found from the mouth, nose and eye as the readings are given only minimal with + grading for Shunti followed by Ardraka and capsicum showing NIL.

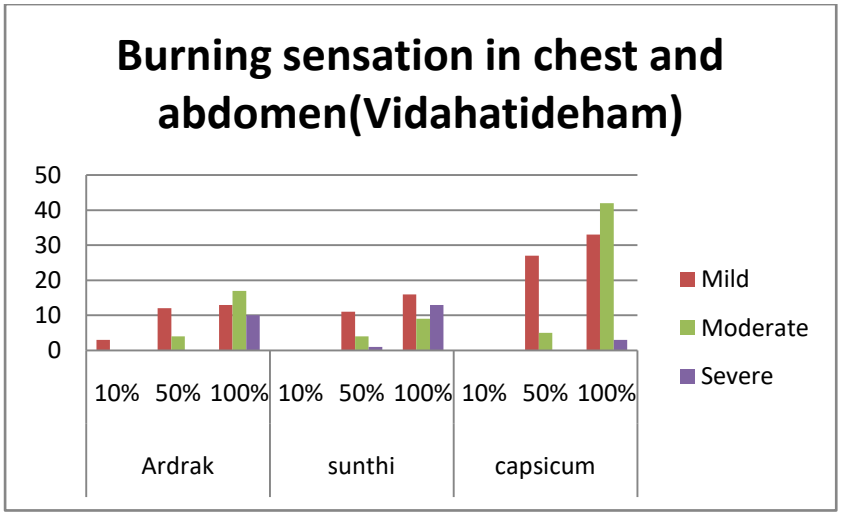
At 50 % concentration Shunti and capsicum has shown the +++ grading while in ++ grading capsicum is more with 15% followed by Shunti with 4% and Ardraka with 2% at ++ gradings.

At 100% it is found that Capsicum is the highest with 10% ,thenShunti with 5% followed by Ardraka with least of 2% at +++ gradings whereas Capsicum with 45% followed by Shunti with 11% and Ardraka with 3% at ++ gradings.

It is seen that after intake of chilles watering starts from eyes and nose. Ghrana is the sthana for Kapha .The terms Cakshuvirechana, Ghrannasravana, vaktrashodana and Indriyasphutikarana, asyasravanam explains this feature of secreations through mouth, nose and eye. The term sphutana means getting clear. Kapha due to its picchila bhava adheres and creates a avarana to the indriya and as a result of this there is upalepa. On intake of katurasa due to agnimahabhuta, it gets vilayana and hence they flow out from the indriya which clears the kapha. Pungent food stimulates the trigeminal nerve, Trigiminal nerve has 3 branches, first one is mandibular supplying to mandibular region. Secondly the maxillary, which supplies to the maxillary area and third one is ophthalmic which supplies to the eyes. So irritation to the trigiminal nerve creates irritation to these branches. This irritation to this branches creates reflex secretion of tears (Chakshuvirechayati), irritation in the nasal mucosa results in increased mucus production in nose (ghranasravanam) and in mouth creates increased salivation .This will remove all the secreations logged up in the ducts and glands making them clear (indriyasphutikarana).

5. Burning sensation in chest and abdomen (Vidahatideham):

	Ardrak			Shunti			capsicum		
	10%	50%	100%	10%	50%	100%	10%	50%	100%
Mild	3	12	13	0	11	16	0	27	33
Moderate	0	4	17	0	4	9	0	5	42
Severe	0	0	10	0	1	13	0	0	3



Graph No 29 – Showing comparative statistical data of domain- Burning sensation in chest and abdomen (Vidahatideham) at 10%, 50% & 100%

At 10% concentration only Ardraka has shown with 3% with + grading, whole Shunti and capsicum does not show any reading at +,++,+++ gradings. Here P value shows that there is significant association was observed between the drug groups and t

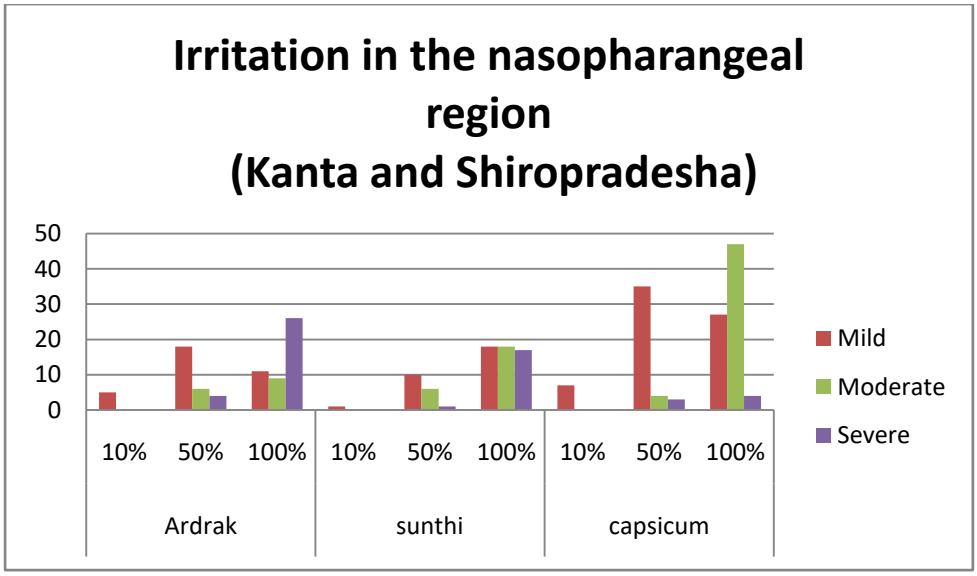
At 50 % concentration, A significant association was observed between the drug `groups and the Burning sensation in chest and abdomen. The chisquare value 38.27 was found to be significant at 0.03 levels. From the table it is clear that we find more severity in Capsicum, followed by Shunti and then the Ardraka at +++ level.

At 100% A significant association was observed between the drug `groups and the Burning sensation in chest and abdomen .The chi square value 64.64 was found to be significant at 0.01level.From the table it is clear that we find more severity in Capsicum ,followed by Shunti and then the Ardraka at +++ level

This vidahatideham feature is because of the ushnateekshnaguna of the dravya.

6. Irritation in Nasopharyngeal Region (Kanta and Shiropradesha)

	Ardrak			Shunti			capsicum		
	10%	50%	100%	10%	50%	100%	10%	50%	100%
Mild	5	18	11	1	10	18	7	35	27
Moderate	0	6	9	0	6	18	0	4	47
Severe	0	4	26	0	1	17	0	3	4



Graph No 30 – Showing comparative statistical data of domain- Irritation in the nasopharangeal region (Kanta and Shiropradesha) at 10%, 50% & 100%

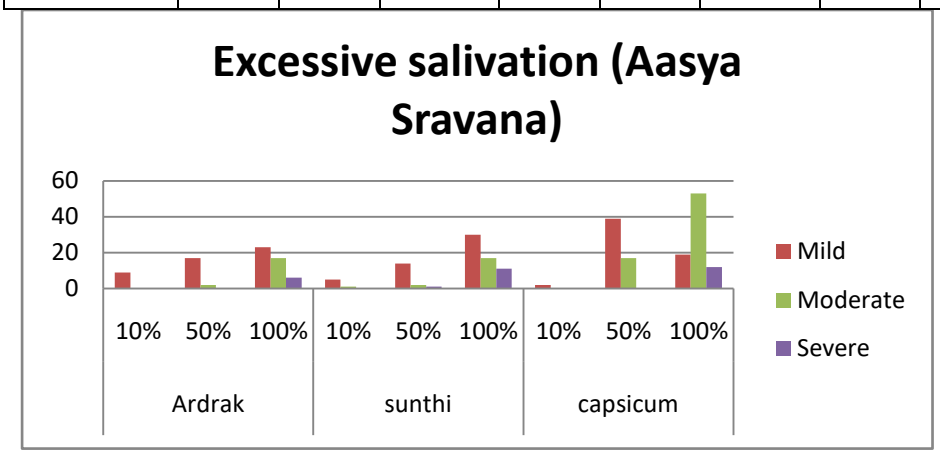
At 10% concentration A significant association was observed between the drug groups and the Irritation in Nasopharyngeal Region. The chi square value 4.50 was found to be significant at 0.105 levels. From the table it is clear that we find more severity in Capsicum, followed by Ardraka and then the Shunti at +++ level

At 50 % concentration, a significant association was observed between the drug groups and the Irritation in Nasopharyngeal Region. The chisquare value 22.19 was found to be significant at 0.03 level. From the table it is clear that we find more severity in Capsicum, followed by Ardraka and then the Shunti at +++ level.

At 100 % concentration, a significant association was observed between the drug groups and the Irritation in Nasopharyngeal Region. The chi square value 68.28 was found to be significant at 0.01 levels. From the table it is clear that we find more severity in Capsicum, followed by Ardraka and then the Shunti at +++ level. This feature is because of the ushna teekshna guna of the dravya.

7. Excessive salivation (AasyaSravana)

	Ardrak			Shunti			capsicum		
	10%	50%	100%	10%	50%	100%	10%	50%	100%
Mild	9	17	23	5	14	30	2	39	19
Moderate	0	2	17	1	2	17	0	17	53
Severe	0	0	6	0	1	11	0	0	12



Graph No 31 – Showing comparative statistical data of domain- Excessive salivation (AasyaSravana) at 10%, 50% & 100%

At 10% concentrationA significant association was observed between the drug `groups and the. Excessive salivation(AasyaSravana).The chi square value 6.88 as found to be non-significant at 0.142 levels.From the table it is clear that we find more severity in Shunti, followed by Ardraka and then the capsicum at +++ level.

At 50 % concentration, A significant association was observed between the drug groups and the. Excessive salivation (AasyaSravana).The chi square value 53.31 was found to be significant at 0.03 level.From the table it is clear that we find more severity in Capsicum, followed by Shunti and then Ardraka the at +++ level.

At 100 % concentration, A significant association was observed between the drug groups and the Excessive salivation(AasyaSravana). The chi square value 54.72 was found to be significant at 0.001 levels.From the table it is clear that we find more severity in Capsicum, followed by Shunti and then Ardraka the at +++ level.

Intake of katurasa due to agnimahabhuta, it gets vilayana and hence they flow out from the indriya which clears the kapha .Pungent food stimulates the trigeminal nerve has 3 branches, first one is mandibular supplying to mandibular region. Secondly the maxillary, which supplies to the maxillary area and third one, is ophthalmic which supplies to the eyes. So irritation to the trigeminal nerve creates irritation to these branches. This irritation to these branches creates reflex secretion of tears (Chakshuvirechayati), irritation in the nasal mucosa results in increased mucus production in nose (ghranasravanam) and in mouth creates increased salivation (Aasyasravana)

- Expression of rasa depends on the dilution factor .hence rasa is linked to the expression of activity through different receptors

Likert value scale (Numerical value)

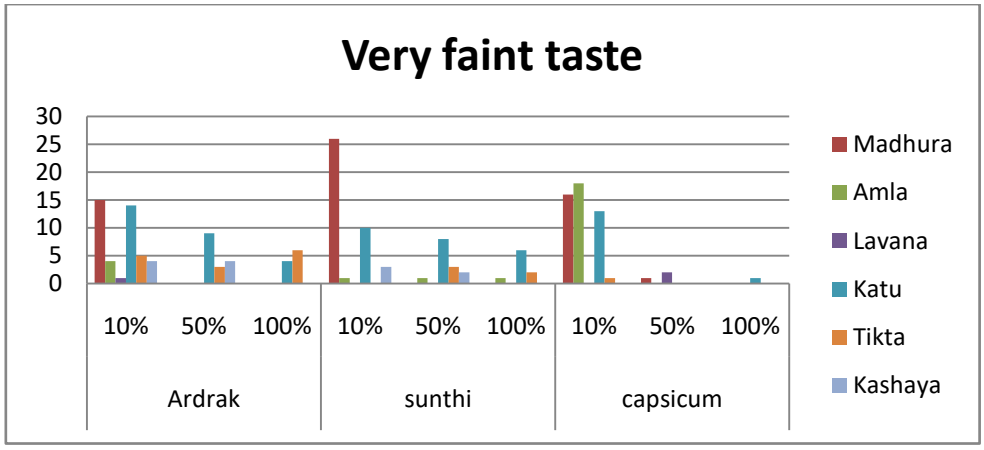
Taste of liquid									
	Ardrak			Shunti			Capsicum		
	10 %	50 %	100 %	10 %	50 %	100 %	10 %	50 %	100 %
Doubtful if Pure water	26	1	0	19	0	0	7	0	0
A very faint taste can't say what	36	61	68	33	65	72	42	81	91
A weak taste can't say what	38	38	32	48	35	28	51	19	9

At 10%, 50% and 100% concentration the number of participants is more as the detection of taste or rasa was not possible because of very less concentration. Detection of the Rasa/taste is based on the concentration of the drug or the dilution proportion. Hence we find in this study many could not identify the rasa perception. It was found that many numbers of participants could not identify which rasa it was.

Domain -A very faint taste of

	Ardrak			Shunti			capsicum		
	10%	50%	100%	10%	50%	100%	10%	50%	100%
Madhura	**15**	0	0	**26**	0	0	**16**	**1**	0
Amla	**4**	0	0	**1**	**1**	**1**	**18**	0	0
Lavana	**1**	0	0	0	0	0	0	**2**	0
Katu	**14**	**9**	**4**	**10**	**8**	**6**	**13**	0	**1**
Tikta	**5**	**3**	**6**	0	**3**	**2**	**1**	0	0
Kashaya	**4**	**4**	0	**3**	**2**	0	0	0	0

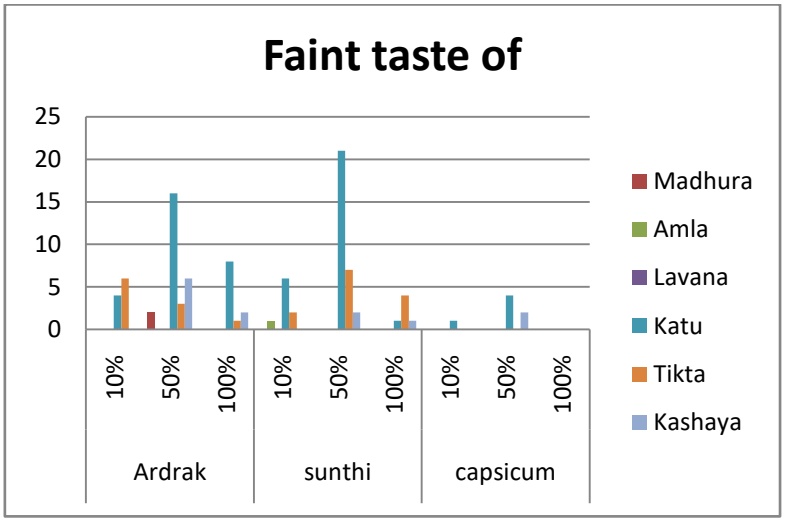
A wide range of rasa was identified by the participants at 10%,50% and 100% under the category of very faint taste which is included Ardraka, Shunti, and capsicum. At 50% concentration katu, tikta, kashaya in Ardraka and Shunti, while madhura, amla, katu, tikta in capsicum



Graph- Showing comparative statistical data of domain - A Very faint Taste of 10%, 50% & 100 %

Domain -A faint taste of

	Ardraka			Shunti			capsicum		
	10%	50%	100%	10%	50%	100%	10%	50%	100%
Madhura	0	**2**	0	0	0	0	0	0	0
Amla	0	0	0	**1**	0	0	0	0	0
Lavana	0	0	0	0	0	0	0	0	0
Katu	**4**	**16**	**8**	**6**	**21**	**1**	**1**	**4**	0
Tikta	**6**	**3**	**1**	**2**	**7**	**4**	0	0	0
Kashaya	0	**6**	**2**	0	**2**	**1**	0	**2**	0



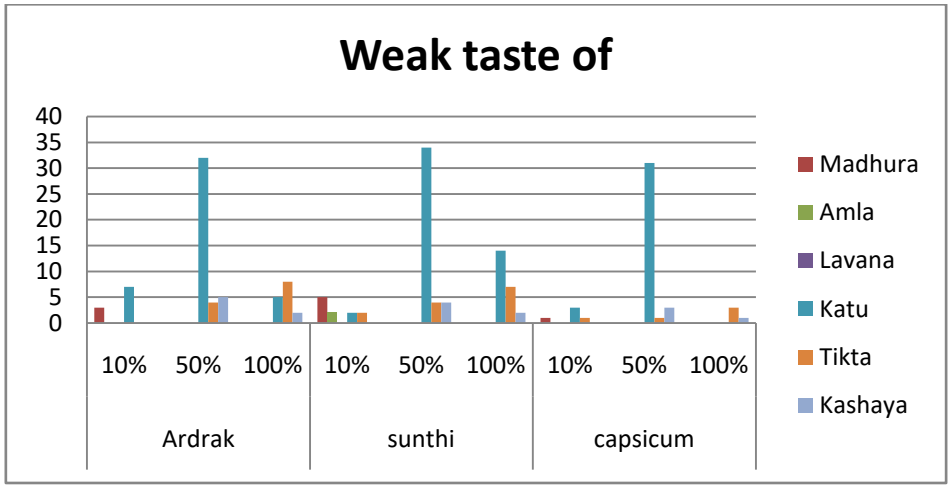
Graph–Showing comparative statistical data of domain - A faint Taste of 10%, 50% & 100 %

Domain -A weak taste of

	Ardraka			Shunti			capsicum		
	10%	50%	100%	10%	50%	100%	10%	50%	100%
Madhura	**3**	0	0	**5**	0	0	**1**	0	0
Amla	0	0	0	**2**	0	0	0	0	0

Lavana	0	0	0	0	0	0	0	0	0
Katu	**7**	**32**	**5**	**2**	**34**	**14**	**3**	**31**	0
Tikta	0	**4**	**8**	**2**	**4**	**7**	**1**	**1**	**3**
Kashaya	0	**5**	**2**	0	**4**	**2**	0	**3**	**1**

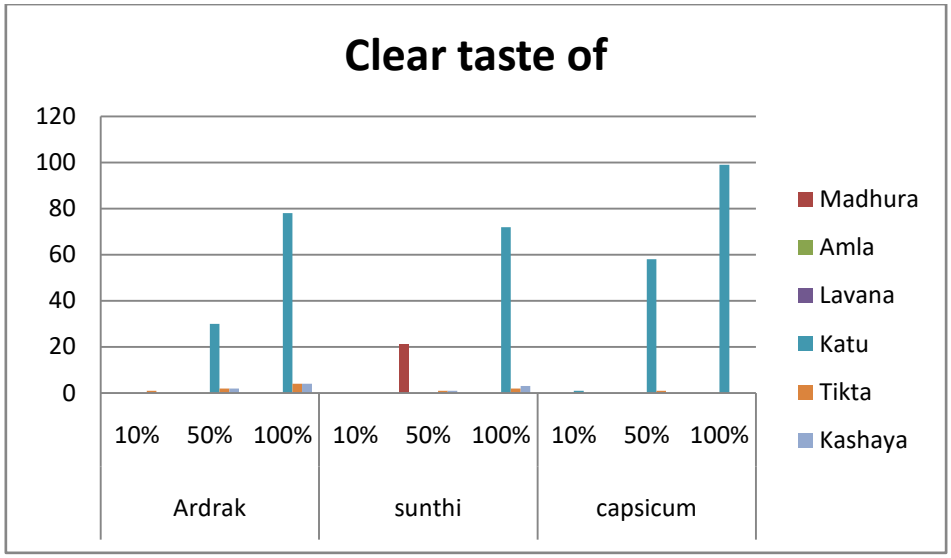
In the category of weak taste recognition it is found that there is wide range of taste recognition from 10% 50% as well as in 100%.But it is seen that there is predominance of katu rasa in all the three drugs .



Graph– Showing comparative statistical data of domain - A weak Taste of 10%, 50% & 100 %

Domain –A clear taste of

	Ardrak			Shunti			Capsicum		
	10%	50%	100%	10%	50%	100%	10%	50%	100%
Madhura	0	0	0	0	**21**	0	0	0	0
Amla	0	0	0	0	0	0	0	0	0
Lavana	0	0	0	0	0	0	0	0	0
Katu	0	**30**	**78**	0	0	**72**	**1**	**58**	**99**
Tikta	**1**	**2**	**4**	0	**1**	**2**	0	**1**	0
Kashaya	0	**2**	**4**	0	**1**	**3**	0	0	0



Graph– Showing comparative statistical data of domain - A clear Taste of 10%, 50% & 100 %

In the clear taste criteria it shows that Ardraka is showing more number of participants in Katu rasa with followed by tikta. While Shunti has shown katu, followed by kashaya at 100% and katu for capsicum with katu and tikta .

Visual Analog Scale –

Visual Analog Scale Score with facial expression

Grading	**Glass with 10% Conc**		
	Adaraka	Shunti	Capsicum
0	77	68	19
1	12	13	28
2	11	12	42
3	0	7	4
4	0	0	7
Facial expression			

Grading	**Glass with 50% Conc**		
	Agarak	Shunti	Capsicum
0	8	3	1
1	20	10	3
2	22	23	2
3	17	18	3
4	19	26	32

5	3	10	26
6	8	9	31
7	3	0	1
8	7	1	1
Facial expression			

Grading	**Glass with 100% Concentration**		
	Adaraka	Shunti	Capsicum
1	1	2	2
2	6	3	0
3	7	5	1
4	23	14	1
5	8	8	2
6	16	10	5
7	7	10	7
8	18	32	37
9	6	6	36
10	8	10	9
Facial expression			

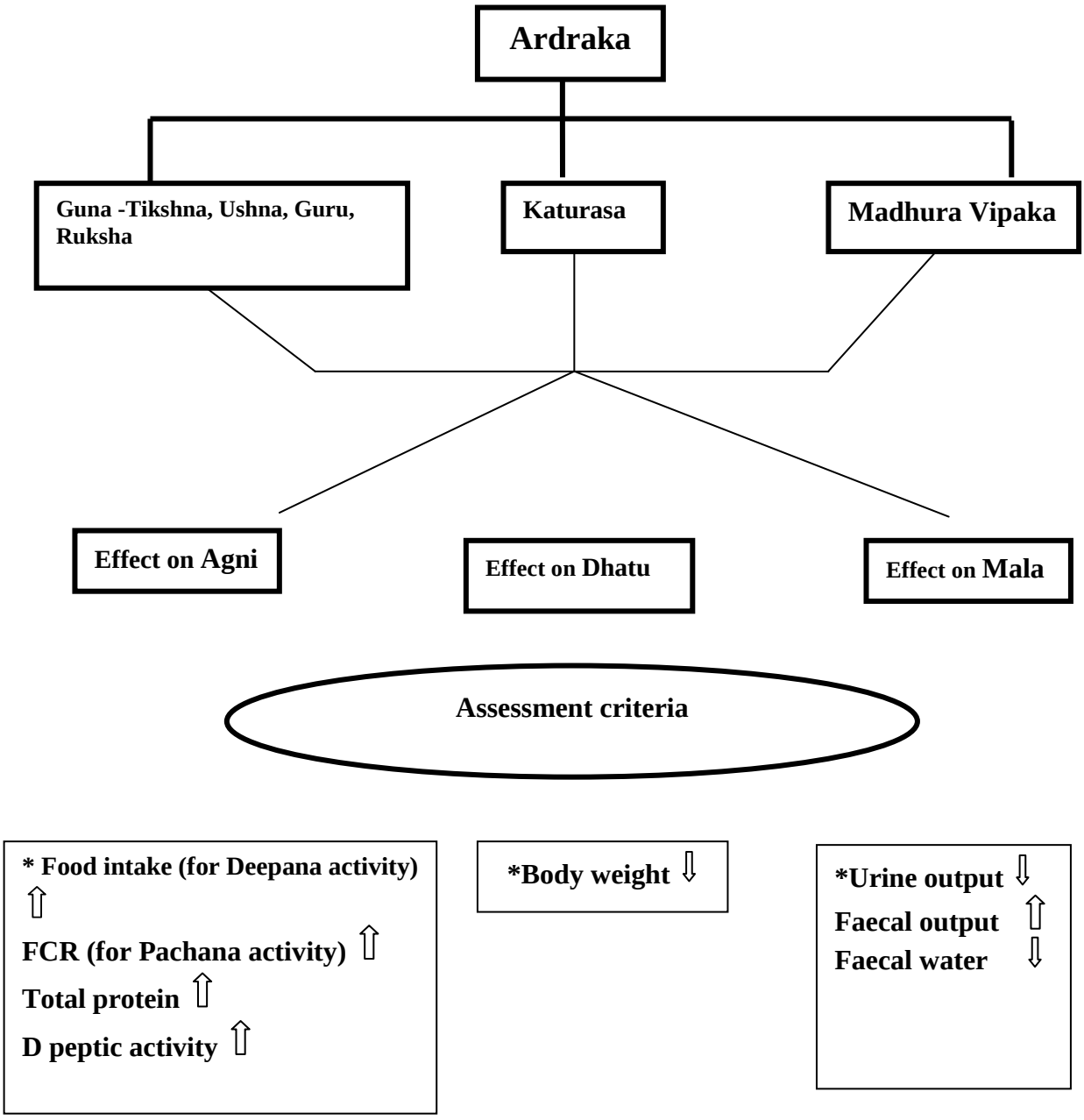
The Visual analog scale (VAS) is used for the measurement and to quantify the subjective feelings. In this study the Visual analog scale for the quantification of the subjective feeling this scale was adopted. Among the different subjective variables VAS have been demonstrated to be the more sensitive and accurate than descriptive ordinal scales (12,13).All the variations of the perception of the taste by the participants was observed that at 10% concentration perception of the taste as subjective feelings is expressed in the range of scale from 0 = No response1and 2 = awareness that the solution is not water but no clear immediate response for Ardraka,

Shunti as well as Capsicum group.. The subjective feeling of not able to perceive any particular taste at this level can be inferred.

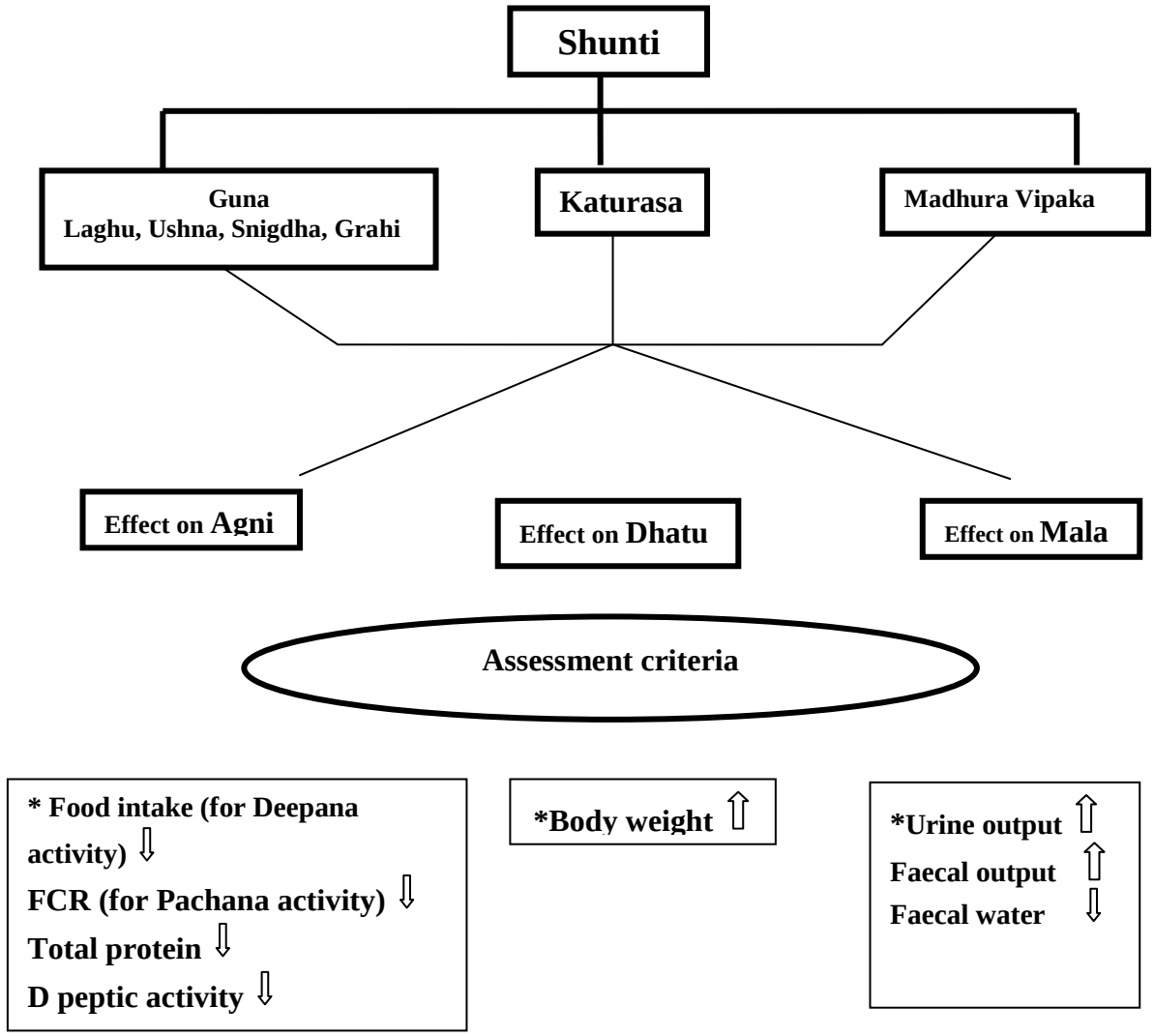
At the 50% concentration it is seen that Daha, chimchimayana, etc which are the subjective feelings was appreciated by the facial expression and measured by the VAS with 3= immediate development of the taste and 4= strong and intense taste perception.

At 100 % concentration the taste of katu was clearly perceived and had presented all the subjective features in the Visual analog scale.

Mode of action of Ardraka and Shunti[120]



***Note- Refer Table No 77& 91- Statistical analysis results of One-way Descriptive**



***Note- Refer Table No 77& 91- Statistical analysis results of One-way Descriptive**

- *Karma bhiyasthu anumeeyathe nana dravyaashrayaguna" (Su.Sutra 46/514)*

We can predict the action of the drug on the basis of Dravyashrayaguna. Here Ardraka and Shunti is having same katu rasa, madhuravipaka but with different guna.

Ardraka being katurasa, madhuravipaka is having ushaveeryaruksha and teekshnaguna.

While Shunti is having katurasa, ushnaveerya, madhuravipaka and laghu snigdha guna. Because of this difference in guna there is variation in the Deepana karma of the Ardraka and Shunti.

In Deepana activity it was found that Ardraka has shown comparatively more Deepana Pachana than Shunti .This because the Deepana karma depends on the GunaKarma of the dravya. Ardraka having katurasa ushna ,teeksna ,guru guna has more agneyaguna as compared to Shunti which is having less agneyaguna as it has

laghusnigdhaguna,.Ardraka is fresh form of the drug and hence it is more potent and also having aapmahabhuta making it more guru,whileShunti is in dry form there is very less of Aapmahabhuta making it thus laghu .Thus even though both have same rasa (Katu rasa) and Vipaka (Madhura vipaka) there is taratamatwa in the deepana which is due to the guna of Ardraka and Shunti.Theagneyatatwa is found to be more in Ardraka when compared with Shunti.In animal study it was seen with criteria of food intake ,Food convertion Ratio (which indicates Deepana –pachana) and total protein estimated being more than Shunti.

There was also relative decrease of urine output in Ardraka due to Ruksha,Teekshnaguna is said to be having Laghu,Snigdhaguna and Madhura vipaka which does not cause mutrakrichra,but causes srustavinmutra

Hence In this study we could find that there is taratamatwa in katurasa of Ardraka and Shunti.Ardraka is more katut than Shunti with respect to Deepana activity.

Ardraka group has shown more Deepana and Pachana which is attributed to its Guna of Ushna ,teeksha .

- *Rasa NipatheDravyaanaam*

Applying this concept the taste Threshold study was done along with Pungency estimation in both the drugs.

*Dravyashrayaguna*if interpreted according to Pharmacognosy can be considered as the Phystoconsituents that are present in the herb/drug.

Here in Ardraka and Shunti are known to have pungent principles Gingerol and shogoal , which are responsible for their therapeutic action. These were analysed in the Analytical study and it was found that Shunti has more pungent compounds than the Ardraka with the presence of Shogaols. 6-Shogoal is more pungent compound than 6 & 8 Gingerol.

Pungency value was also calculated,which shown that Shunti with 2.3 has more pungency than Ardraka with value of 2.9.This pungency depends on the pungent principles or the Phytoconstituents of the drug**.**

In the next aspect, observational study the taratamatwa of katu rasa was assessed which showed that there was variation in the intensity of taste perception at various concentration and this taste perception is found to be depending on the dilution along with the phytoconsituents concentration and this inturn depends on the taste threshold receptors .The transcient receptor potential (TRP) channels play an importand role . Pungency or spiciness is a trigeminal sensation, like astringency, and

it is not recognized as a distinct taste in modern medicine.It is called as Chemesthesis. Chemesthesis is a chemical sense and taste, and it is more general sensitivity of the mucous or cutaneous surfaces, perceived as pungency, irritation, and thermosensations (cooling or heat) . The TRP vanilloid 1,3,4. Certain members of the transient receptor potential (TRP) channels family are of prime importance in the perception of pungency. TRP vanilloid types 1, 3, and 4 (TRPV1, TRPV3, and TRPV4) and TRP ankyrin type 1 (TRPA1) for "hot" pungency, while TRPM8 for "cold" pungency.[121]

Researchers have established that sweet (Madhura rasa), bitter (tikta Rasa) and astringent (kashaya rasa) are detected by the receptor coupled with G-Protein, while the salty (Lavana rasa), Sour (Amla Rasa), Pungent(Katu rasa) which have sensorial characteristics are mediated through the various types of channels which are penetrating through the membranes.

Thus Shunti is having more katutwa in terms of taste threshold causing more irritation on tongue etc than Shunti and it is because of concentrated pungent principles in it.

Ayurvedic Concepts of this study and its Interpretation

The complete study can be understood and interpreted by applying the classical reference (***Sutra)***as follows.

- रसनिपातेद्रव्याणाम्(Cha.Su. 26/77)
- कर्मभिस्त्वनुमीयन्तेनानाद्रव्याश्रयागुणाः (Su.Su.46/514)

The action of the drug can be predicted on the basis of *Dravyashrayaguna*. With respect to this study the Deepana karma and the taratamatwa of the katu rasa present in Ardraka and shunti can be understood. Here Ardraka and Shunti is having same katurasa ,Madhuravipaka but with different guna.

Ardraka being katurasa, Madhura vipaka is having ushaveeryaruksha and teekshna guna.While Shunti is having katurasa, ushnaveerya, madhura vipaka and laghu snigdha guna. Because of this difference in guna there is variation in the Deepana karma of the Ardraka and Shunti.

Deepana is defined as the one which increases agni without doing Amapachana. Various classical texts have highlighted the Deepana karma and sharanghadhara explains in detail this concept with examples under Karma chapter. Deepaniyadravya are known to have Agni mahabhuta pradhanyata. Some of the Deepaniyadravya are also known to have Pachana property as the dravya mentioned in deepaniya mahakashaya are also known to have Pachana action. Among the shadrasa Amla,katu,tikta and lavana are known to have this Deepana property.

Katurasa being used in diet and medicine is being preferred here for the study of Deepana activity and Ardraka and Shunti both are different forms of the same drug are known for katu rasa and deepaniya action being commonly used in food and medicine.

In **Deepana activity animal study** it was found that Ardraka has shown comparatively more Deepana Pachana than Shunti. This because the Deepana karma depends on the Guna Karma of the dravya. Ardraka having katurasa ,ushna, teeksna, guru guna has more agneya guna as compared to Shunti which is having less agneya guna as it has laghu snigdha Guna. Ardraka is fresh form of the drug and hence it is more potent and also having aapmahabhuta making it more guru,while Shunti is in dry form there is very less of Aapmahabhuta making it thus laghu.Thus even though both have same rasa (Katu rasa) and Vipaka (Madhura vipaka) there is taratamatwa in the deepana which is due to the guna of Ardraka and Shunti.The agneyatatwa is

found to be more in Ardraka when compared with Shunti. In animal study it was seen with criteria of food intake, Food convertion Ratio (which indicates Deepana – pachana) and total protein estimated being more than Shunti. The Faecal wet,faecal dry and faecal water is found to have decreased in Shunti due to Grahi property of Shunti as it does the Malashoshana Karma and Dravashoshana. The following chart depicts the effect of Guna on Dhatu,mala and Agni.

Effect of Guna on Dhatu, Mala and Agni

	Dhatu	**Mala**	**Agni**
Teekshnaguna	Dhatu kshaya	Malakshaya	Agnivardaka
Ushna	Dhatu kshaya	Malakshaya	Agnivardaka
Laghu	Dhatu kshaya	Malakshaya	Agnivardaka
Ruksha	Dhatu kshaya	Malakshaya	Agni mandyakara
Snigdha	Dhatu vriddhi	Mala vriddhi	Agni vardaka

Panchabhautiktva of Katu Rasa

वायुतेजसोकटुकः ॥३॥ (अ.सं.सु.१८)

Dosha-Dhaatu-Mala	**Effects**
Vata	Vata prakopaka
Pitta	Pitta vardhaka
Kapha	Kaphashamaka
Dhatu	Dhatu kshaya karaka
Mala	Baddhavinmutra
Twaka	Swedaghna, kandughna, kushthaghna, daahaprashamana
Chakshu	Stravayati
Nasa	Ghraanamapadayati
Others	SphutikarotiIndriya

Strotas	**Karma**
Annavaha	Rochana, deepana, pachana, krumighna, malamutrashoshana,vibandhakrut, apakarshana
Rasavaha	Sneha-kleda-swedaupahanti, stanyashodhana,
Raktavaha	Shonitasanghatabhinatti
Mamsavaha	Mamsavilikhati
Medovaha	Bandhan chhinatti, meda-kledaupahanti
Purishavaha	mala-mutrashoshana, vibandhakrut

Mutravaha	Mutrashoshana

There was also relative decrease of urine output in Ardraka due to Ruksha, Teekshnaguna is said to be having Laghu, Snigdha guna and Madhura vipaka which does not cause mutrakrichra,but causes srustavinmutra

Hence, In this study we could find that there is taratamatwa in katurasa of Ardraka and Shunti even though both have Madhura vipaka.Ardraka is more katu than Shunti with respect to Deepana activity.

Ardraka group has shown more Deepana and Pachana which is attributed to its Guna of Ushna, teeksha .

Hence, Alternate Hypothesis (H_1)-Ardraka shows better Deepana activity than Shunti in relation to Katu rasa is accepted

In Analytical study and Taste Threshold Study -

In Analytical study it was found that Shunti is more katu interms of Taste perception as it is shushka form of the dravya with less aap mahabhuta and hence contributes to more Katutwa as it has concentrated principles. While when we look into the deepana and pachana activity, Ardraka shows more Deepana karma.

- रसनिपातेद्रव्याणाम् (cha.su. 26/77)

Applying this concept the taratamatwa of katurasa is studied with taste threshold study and it has also shown Shunti being more katu than Ardraka due to more katutwa as it is having less aapmahabhuta. Thus Shunti is having more Katutwa in terms of taste threshold causing more irritation on tongue etc, than Ardaka and it is because of concentrated pungent principles in it.

In the objectives of this study the following concepts and principles were applied

Deepana

पचेन्नामं वन्हिकृच्चदीपनंतद्यथामिशि । (Sha.P.Kha4)

यदग्निकृत् पचेन्नांम तद्यथघृतम् ।

दीपनं ह्यंग्निकृत्वामं कदाचित् पाचयेन्न ॥ (A.HruSu 15 A.da)

Katu rasa

संवेयेद्योरसनंनिपातेतुदतीवच। विदहन्मुखनासाक्षिसंस्त्रावीसकटुस्मृतः (cha.su. 26/77)

Ardraka

आर्द्रिकाभेदिनीगुर्वितीक्ष्णोष्णादीपनीमता ॥

कटुकामधुरापाकेरुक्शावातकफापहा ।

येगुणा: कथिता: शुण्ट्य़ास्तेअपिसन्त्यार्द्रकेअखिला:॥ (BPN Haritakyadivarga 49-50)

Shunti

शुण्टीविश्वाचविश्वञ्च्नागरम्विश्वभेषजम् ।

ऊषणम्कटुभद्रञ्च श्रुङ्गवेरम्महौषधम् ॥

शुण्टीरुच्यामवातघ्नीपाचनीकटुकालघु ।

स्निग्धोष्णांमधुरापाकेकफवातविबन्धनुत्॥.....

…..आग्नेयगुणभूयिष्ठात्तोयांशपरिशोषियत् ।

संगृह्णातिमलंतत्तुग्राहिशुण्ठ्दयोयथा ॥ (BPN Haritakyadivarga 44-49)

दीपनंपाचनंयत्स्यादुष्णत्वाद्द्रवशोषकम् । ग्राहितच्चयथाशुण्ठीजीरकंगजपिप्पली ॥ (Sha.P.Kha 4)

9. CONCLUSION

- **In Analytical study -** It was found that Shunti has more pungent compounds than the Ardraka with the presence of Shogaols. 6-Shogoal is more pungent compound than 6 & 8 Gingerol.
- **In experimental study** – It was found that Agnideepana effect is influenced by the guna of the drug and there is taratamatwa in Katurasa in relation to Agnideepana property. Ardraka group has shown more Deepana and Pachana which is attributed to its Guna of Ushna, Teeksha and Ruksha. **Hence, Alternate Hypothesis (H_1) - Ardraka shows better Deepana activity than Shunti in relation to Katu rasa is accepted.**
- **Observational study**- Taratamatwa of katu rasa was evaluated with Pungency and taste threshold estimation. Pungency value of Shunti is 2.3, which is more pungent than Ardraka with value of 2.9. It shows that, there was variation in the intensity of taste perception at various concentrations and this taste perception depends on the dilution along with the phytoconstituent concentration. This in turn depends on its transient receptor potential (TRP).Thus Shunti is having more Katutwa in terms of taste threshold causing more irritation on tongue etc, than Ardaka and it is because of concentrated pungent principles in it.

SUMMARY

Ayurveda attributes the drug to its Panchabhautic configuration with the rasa panchanka – Rasa, Guna, Veerya, Vipaka and Prabhava. Agni Rakshana is given prime importance in maintaining the health of an individual as well as in treatment of the disease. While the modern pharmacology highlights the mode of action of the drug to its chemical constituents. Review about scientific implications and attributes principles of the drug action (Rasa Panchaka) is necessary to understand the rationality of the medicinal herbs which are used in both food and medicine).There is a gap prevailing in the present Pharmacopeia for the assessment of Tartamatwa (variation in the intensity) of Rasa (taste) perception and its assessment with respect to its Karma. This study evaluates Ardraka (wet ginger) and Shunti (Dry Ginger) in relation to its Katu rasa (Pungent Taste) with its Taratamatwa (variation in the intensity), Vipaka as well as the Deepana karma. Aim of this study was to assess Deepana activity of Ardraka and Shunti with reference to its rasa and vipaka.

Material and methods**:** Analytical study -Pharmacognostical and Phytochemical screening for Ardraka and Shunti was done. Experimental study – In experimental study, Deepana model was carried out to assess the Katurasa Deepana Karma of both Ardraka and Shunti. Observational study - to assess Taratamatwa of kataurasa by taste threshold method so as to evaluate and establish relation between Rasa (taste) with its Taratamatwa (variation in intensity) and Guna,Vipaka.

Results & Discussion:

In Analytical study –it was found that all the parameters assessed are within the standards prescribed in API. Shunti is found to be having less foreign matter The pH (10.0% aqueous solution) of Ardraka (wet Ginger) was 7.74 indicating that it is more alkaline then Shunti (Dry Ginger) with 4.48 which is acidic in nature.It was found that Sunthi has more pungent compounds than the Ardraka with the presence of Shogaols. 6-Shogoal is more pungent compound than 6 & 8 Gingerol.

In experimental study –Ardraka shows better Deepana activity than Shunti in relation to Katu rasa is accepted. Food conversion Ratio (F.C.R) -Increase in FCR indicating more of Pachana than Deepana. Shunti and Ardraka both are having Deepana and Pachanaaction. In this study it was found that Ardraka is having more Pachana action.The difference between Deepana and Pachana action is because of the amount of Agneyaguna. The descriptive statistics of food conversion ratio shows FCR value of 2.96217 for Shunti while Ardraka has 6.80133.It shows Ardraka is having

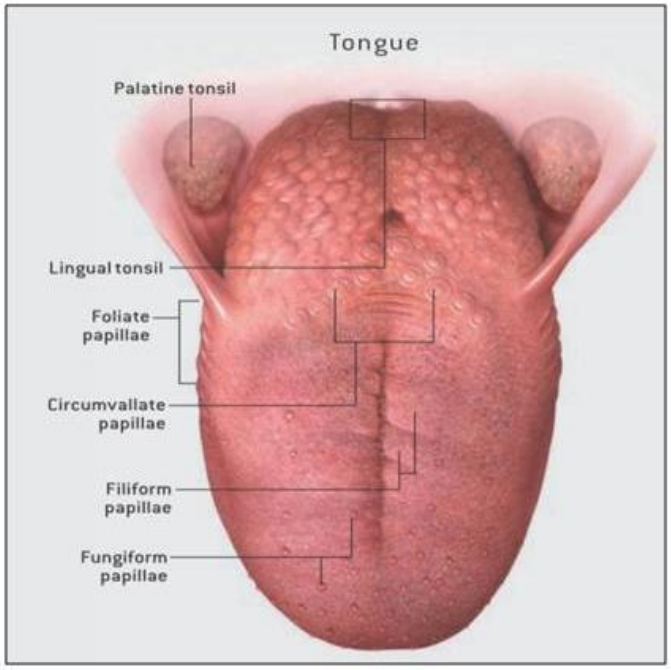
more Pachana effect while Shunti has less Pachana effect comparatively. Increase in food intake is shown that Ardraka is having Katu, Ushna, Teeksha is having more Pachana and less Bhedana karma, while Shunti is having Katu,Madhura rasa, Ushnaguna and Grahi karma, Pachana dravya are known to have mild Deepana action.Total acid estimation- On comparison with the three groups it was found that total acids value is relatively increased in Shunti with 4.3000* while Ardraka 3.4333 and control groups 3.5000.

Observational study-. Pungency value of Shunti is 2.3, which is more pungent than Ardraka with value of 2.9. Taste threshold test with the questionnaire which includes parameters mentioned in the classics and the Likert Values Scale and Visual analog Scale. Questionnaire designed were validated for internal consistency using Cronbach's Alpha.At 10% concentration- A significant association was observed between the drug `groups and the. Excessive salivation(AasyaSravana).The chi square value 6.88 as found to be non- significant at 0.142 levels.From the table it is clear that we find more severity in Shunti, followed by Ardraka and then the capsicum at +++ level .At 50 % concentration- A significant association was observed between the drug groups and the. Excessive salivation (AasyaSravana).The chi square value 53.31 was found to be significant at 0.03 level.From the table it is clear that we find more severity in Capsicum, followed by Shunti and then Ardraka the at +++ level.At 100 % concentration- A significant association was observed between the drug groups and the Excessive salivation (AasyaSravana). The chi square value 54.72 was found to be significant at 0.001 levels. we find more severity in Capsicum, followed by Shunti and then Ardraka the at +++ level.Thus Sunthi is having more Katutwa in terms of taste threshold causing more irritation on tongue etc, than Ardaka and it is because of concentrated pungent principles in it.

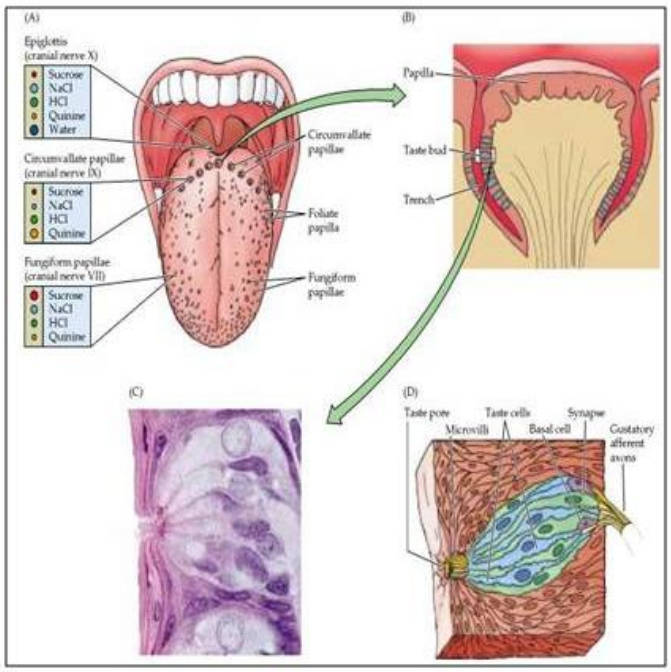
Conclusion: Thus in this study Rasa-pungency value and pungent principles / phytochemicals are found to be more in Shunti as per the analytical and observational study**.** Deepana activity- Ardraka and Shunti both have shown Deepana karma but Ardraka relatively more Deepana Pachana activity in comparison to Shunti.

SCOPE FOR FURTHER STUDY

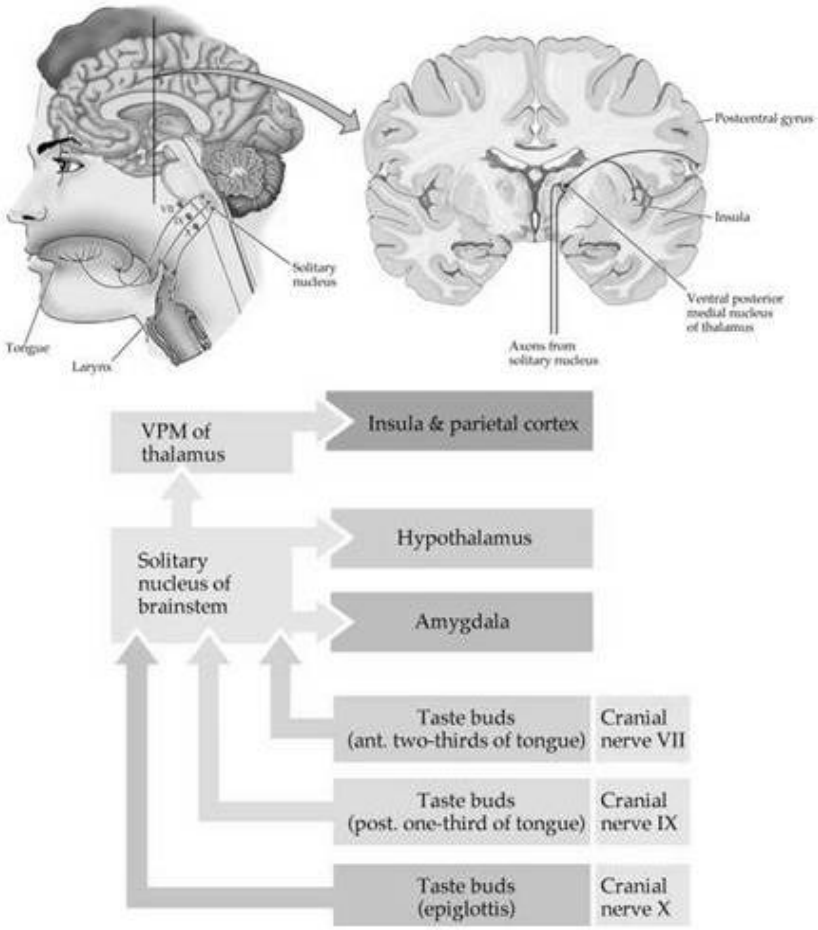
- The effect of Katurasa on Enzymatic level can be studied by adopting the principles of Transient receptor Potential (TRP).
- Taratamatwa of other Rasa can be studied by adopting the Taste Threshold Proforma used in this study.



Picture No 1- Anatomy of Tongue



Picture No 2- Papillae of Tongue



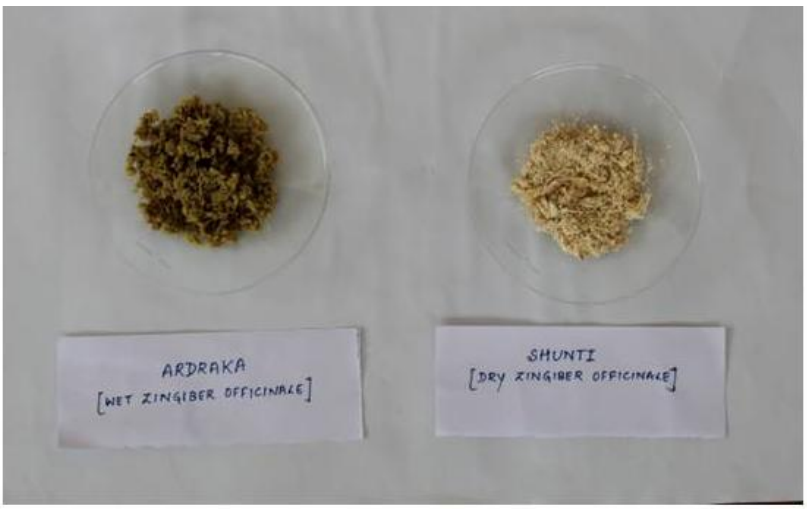
Picture No 3 - showing taste pathway

Picture no 4 - Plant of *Zingiber officinale* Roscoe

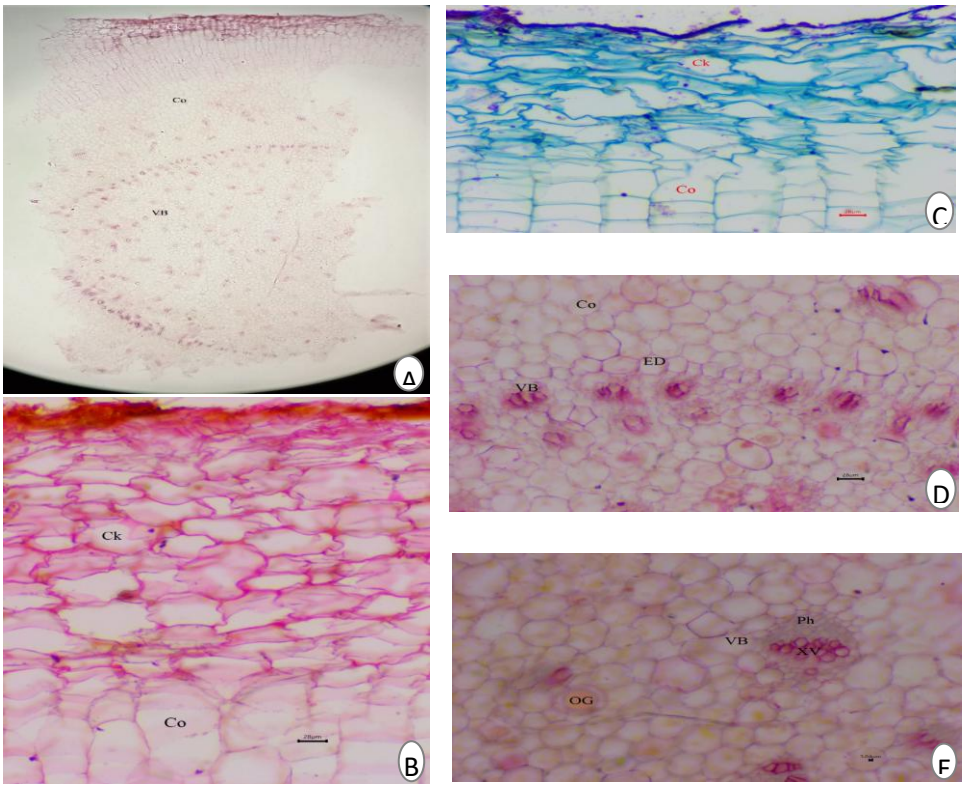
Picture no 5 - Root of *Zingiber officinale* Roscoe

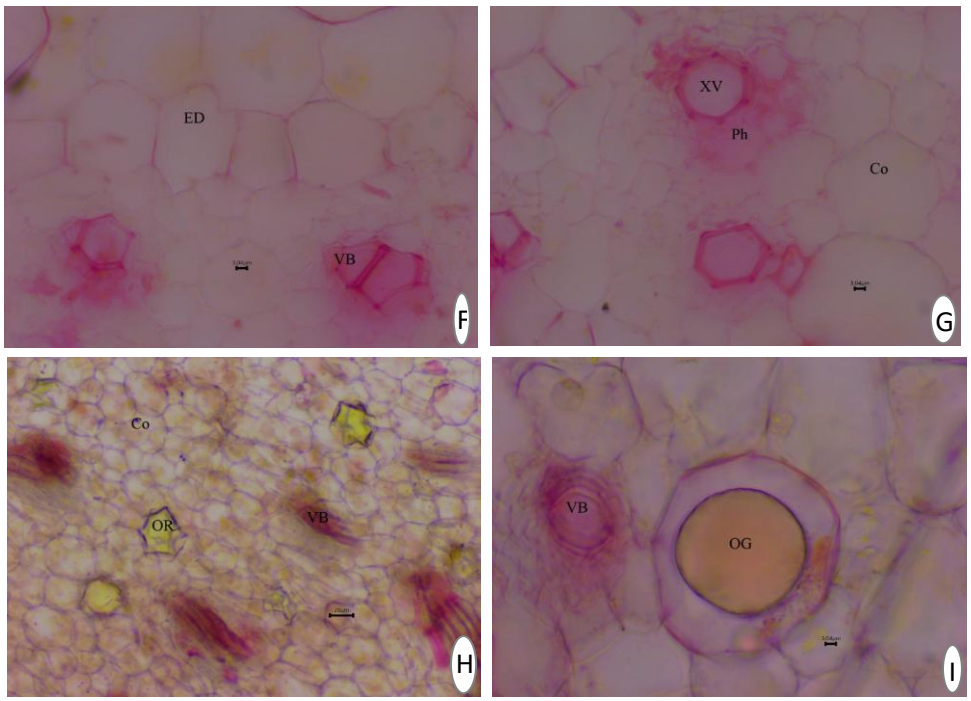
Picture no 6 - Root of *Zingiber officinale*
Adraka (Wet) and Shunti (Dry)

Picture no 7 – Measurements of Root of *Zingiber officinale*
Adraka (Wet) and Shunti (Dry)



Picture no 8- Pounded Adraka and Shunti

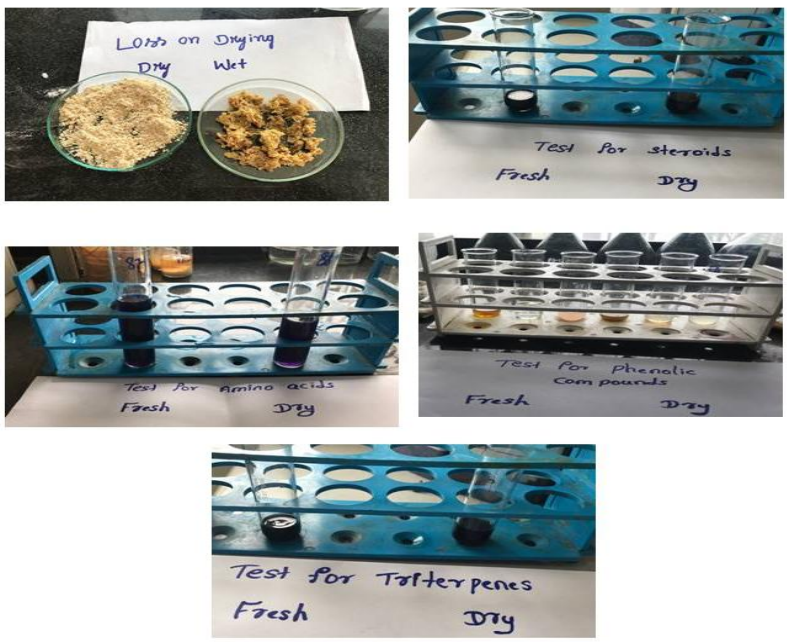




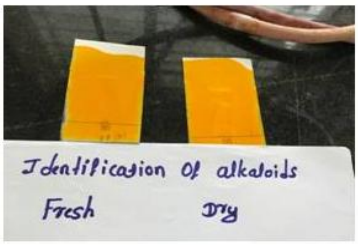
Abbreviations:
Ck – Cork; Co – Cortex; ED – Endodermis; Ph – Phloem; OG – Oil globules; OR – Oleo-Resin; VB – Vascular Bundles; XV – Xylem Vessels.

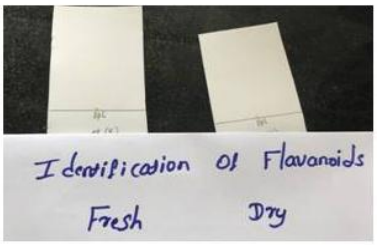
Figure legends:
A – Transverse section of ground plan of *Z.officinale* rhizome stained with safranin.
B&C – Transverse section of the outer & inner cork 10x stained with safranin& TBO.
D – Enlarged view of the endodermis vascular bundles10x stained with safranin.
E – Enlarged view of the single vascular bundles 10x stained with Safranin.
F - Enlarged view of the endodermis, xylem vessels 40x stained with Safranin.
G – Enlarged view of the xylem vessels and phloem 40x stained with safranin.
H – Enlarged view of the oleo-resin canals 40x stained with safranin.
I – Enlarged view of the oil globule cells 40x stained with safranin.

Picture no 9- Microscopic Profile of the Raw Drugs



Picture no 10 – Physiochemical and photochemical tests for Adraka and Shunti





Picture no 11- Physiochemical and photochemical tests for Adraka and Shunti

Picture no 12- Experimental study – Metabolic cage

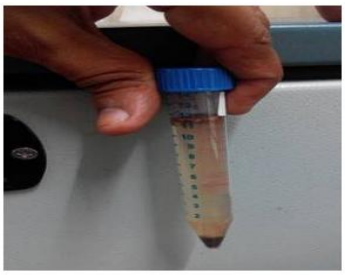
Picture No13- Urine and Faecal matter collection

Picture No14- Faecal matter weighing

Picture No15- Faecal matter Drying in Hot air oven

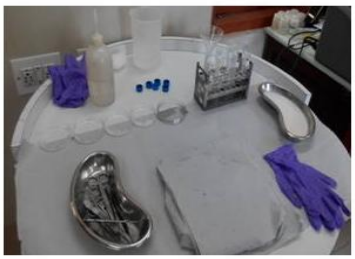
Picture No16- Total acid and Free acid Estimation by Titration method

Picture No 17- Chloroform Anaesthasia to Rats

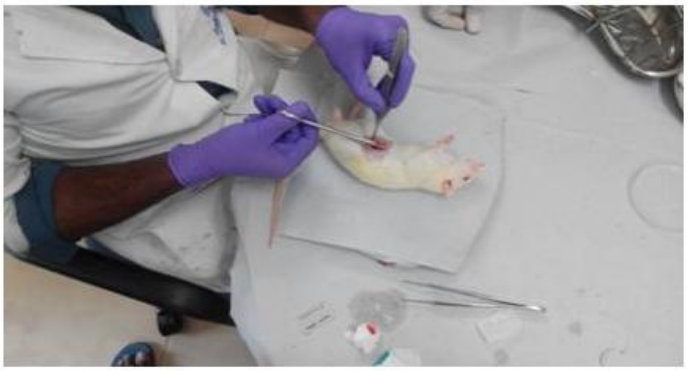


Picture no 18-Gastric Juice Volume Estimation

Picture No 19- Gastric acid pH estimation



Picture No 20- Preparation for Dissection of Rats



Picture No 21- Dissection of Rats

Picture No22 - Gastric Juice Collection from Rats

Picture no 23 - Sample collection for study with different concentrations - Human experiment

Picture no 24- Taste threshold – Observational study

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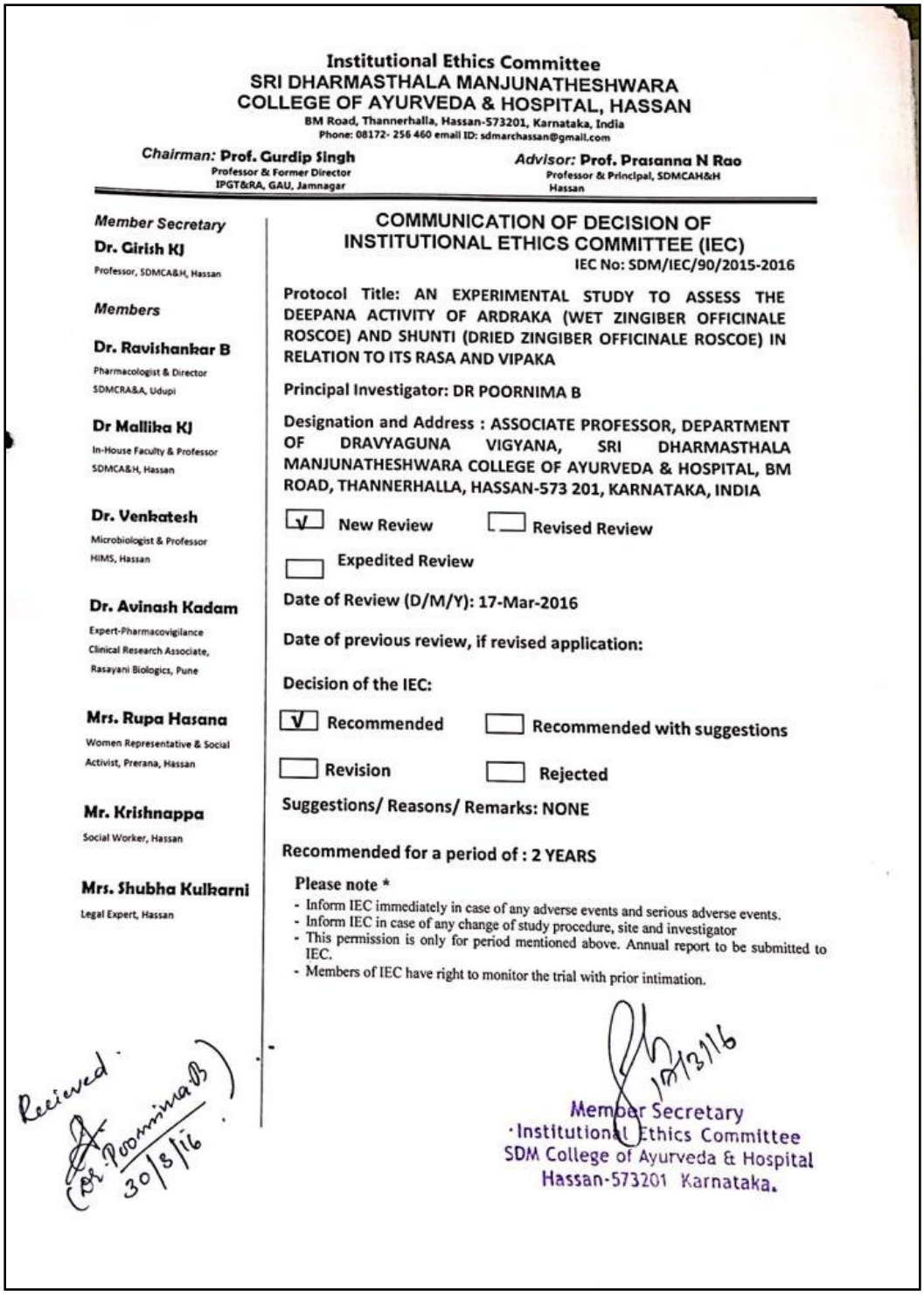
Annexure I



Institutional Ethics Committee
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Professor & Former Director
IPGT&RA, GAU, Jamnagar

Advisor: **Prof. Prasanna N Rao**
Professor & Principal, SDMCAH&H
Hassan

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Expert-Pharmacovigilance
Clinical Research Associate,
Rasayani Biologics, Pune

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Women Representative & Social
Activist, Prerana, Hassan

Mr. Krishnappa
Social Worker, Hassan

Mrs. Shubha Kulkarni
Legal Expert, Hassan

COMMUNICATION OF DECISION OF INSTITUTIONAL ETHICS COMMITTEE (IEC)

IEC No: SDM/IEC/90/2015-2016

Protocol Title: AN EXPERIMENTAL STUDY TO ASSESS THE DEEPANA ACTIVITY OF ARDRAKA (WET ZINGIBER OFFICINALE ROSCOE) AND SHUNTI (DRIED ZINGIBER OFFICINALE ROSCOE) IN RELATION TO ITS RASA AND VIPAKA

Principal Investigator: DR POORNIMA B

Designation and Address : ASSOCIATE PROFESSOR, DEPARTMENT OF DRAVYAGUNA VIGYANA, SRI DHARMASTHALA MANJUNATHESHWARA COLLEGE OF AYURVEDA & HOSPITAL, BM ROAD, THANNERHALLA, HASSAN-573 201, KARNATAKA, INDIA

[√] New Review [ ] Revised Review

[ ] Expedited Review

Date of Review (D/M/Y): 17-Mar-2016

Date of previous review, if revised application:

Decision of the IEC:

[√] Recommended [ ] Recommended with suggestions

[ ] Revision [ ] Rejected

Suggestions/ Reasons/ Remarks: NONE

Recommended for a period of : 2 YEARS

Please note *
- Inform IEC immediately in case of any adverse events and serious adverse events.
- Inform IEC in case of any change of study procedure, site and investigator
- This permission is only for period mentioned above. Annual report to be submitted to IEC.
- Members of IEC have right to monitor the trial with prior intimation.

17/3/16
Member Secretary
Institutional Ethics Committee
SDM College of Ayurveda & Hospital
Hassan-573201 Karnataka.

Received
(Dr. Poornima B)
30/3/16

Taste threshold observational study IEC Approval

SDM Centre for Research in Ayurveda & Allied Sciences
SDM college of Ayurveda Campus,
Kuthpady, Lakshminarayana Nagar
Udupi- 574 118

APPROVAL CERTIFICATE

This is to certify that the project title "An experimental study to assess the deepana activity of Ardraka (wet zingiber officinale) and shunti (dried *zingiber officinale*) in relation to its rasa and vipaka" submitted by Dr. Poornima Assistant professor dept. of dravyaguna has been approved (Approval No: SDMCRA /IAEC/ by the IAEC in its meeting held on 11/04/2016

CPCSEA | IAEC | SDMH-DG-27.

(Chairman IAEC)

(CPCSEA Nominee)

* * * * *

Experimental study IAEC Approval

महाराष्ट्र विज्ञान वर्धिनी
आघारकर अनुसंधान संस्था
Maharashtra Association for the Cultivation of Science
AGHARKAR RESEARCH INSTITUTE
(An Autonomous Body under the Department of Science and Technology, Govt. of India)

February 8, 2016

AUTHENTICATION CERTIFICATE

Name of the party: Vd. Poornima B.

Address: Tilak Maharashtra Vidyapeeth Vidyapeeth Bhavan, Mukundnagar, Gultekdi, Pune-411 037

Reference: - Ayu/16/189; dated: 14th January 2016

Name of the sample: Zingiber officinale (Dry)

Sample size: - Dried rhizome (About,100g)

Date of the receipt: - January 21, 2016

Report: -

The sample has been critically studied with macroscopic and organoleptic characters. We hereby authenticate that the sample belongs to the rhizome of
Zingiber officinale Roscoe. (Family- Zingiberaceae)

This certificate is issued at your request and is given only for the academic use.

(A.S. Upadhye)

Scientist
Plant Drug Authentication Service
Botany Group
Plant Sciences Division

Auth.16-011

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Road, Pune - 411 004, India. Phone : (020) 2567-8916/17/18, 2565 - 3680/4357/4106/4097/4167 Fax : (020)2565 1542
Web : www.aripune.org E-mail : arimacs@pn2.vsnl.net.in

Drug Authentication letter

महाराष्ट्र विज्ञान वर्धिनी
आघारकर अनुसंधान संस्था
Maharashtra Association for the Cultivation of Science
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AUTHENTICATION CERTIFICATE

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Address: Tilak Maharashtra Vidyapeeth Vidyapeeth Bhavan, Mukundnagar, Gultekdi, Pune-411 037

Reference: - Ayu/16/189; dated: 14th January 2016

Name of the sample: Zingiber officinale (Wet)

Sample size: - Fresh rhizome (About,100g)

Date of the receipt: - January 21, 2016

Report: -

The sample has been critically studied with macroscopic and organoleptic characters. We hereby authenticate that the sample belongs to the rhizome of *Zingiber officinale* Roscoe. (Family- Zingiberaceae)

This certificate is issued at your request and is given only for the academic use.

(A.S. Upadhye)

Scientist
Plant Drug Authentication Service
Botany Group
Plant Sciences Division

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arkar Road, Pune - 411 004, India. Phone : (020) 2567-8916/17/18, 2565 - 3680/4357/4106/4097/4167 Fax : (020)2565 1542
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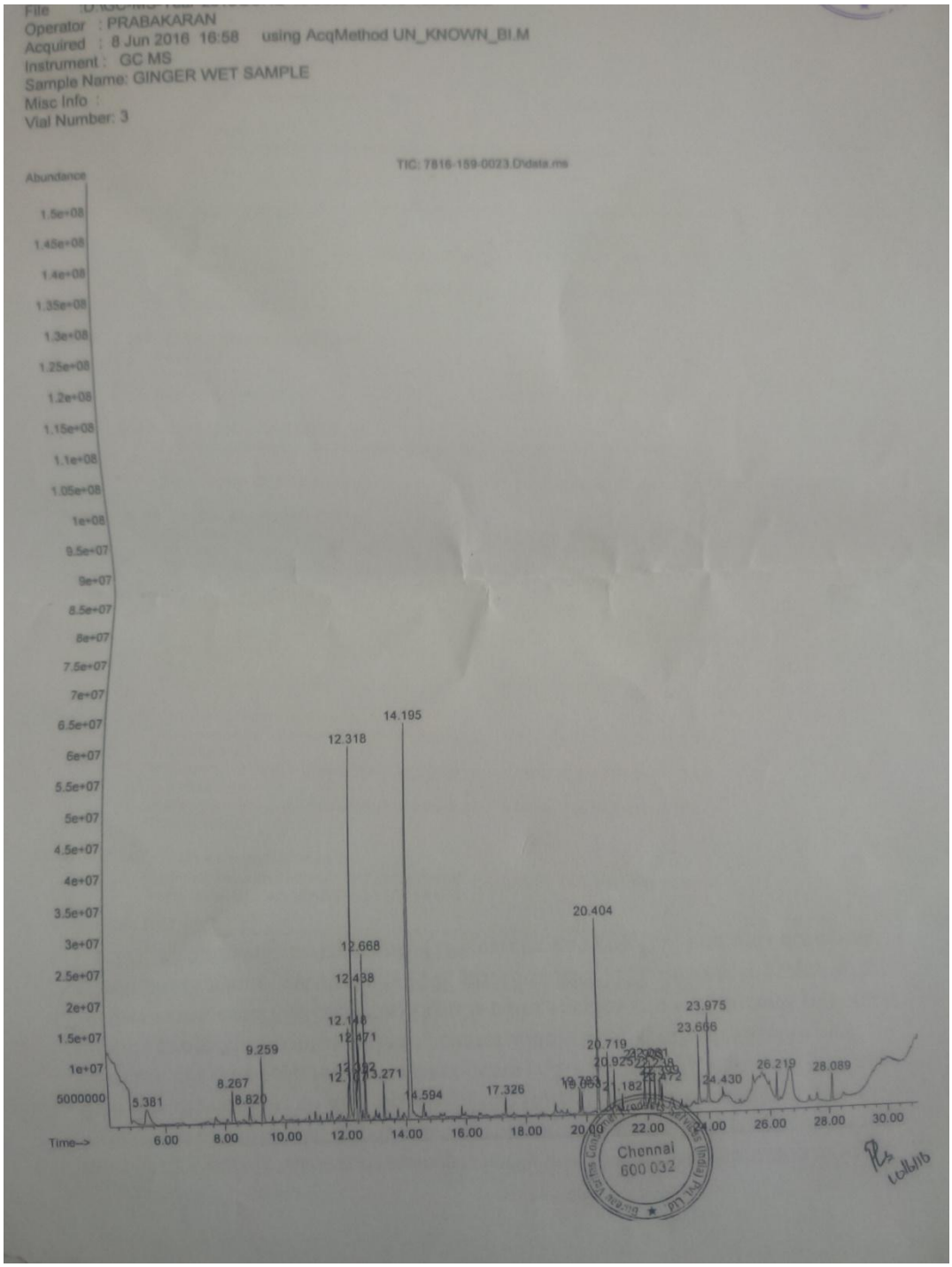
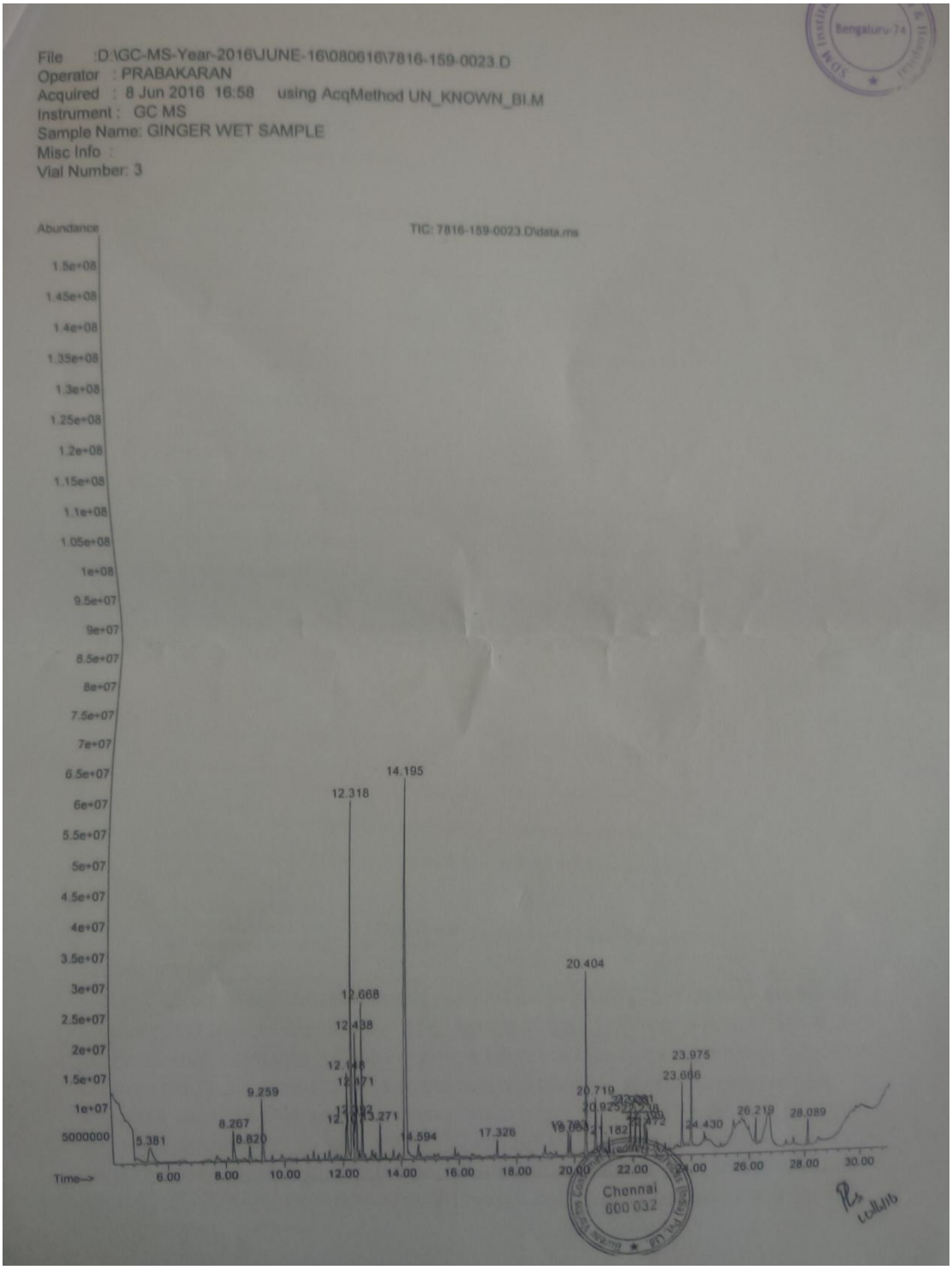
Drug Authentication letter



GCMS Study (Wet ginger)



GCMS Study (Dry ginger)

ANNEXURE II

An Experimental study to assess the Deepana activity of Ardraka (wet *Zingiber officinale* Roscoe) and Shunti (dried *Zingiber officinale* Roscoe) in relation to its Rasa and Vipaka

ABSOLUTE VALUES

GROUP 1: Ardraka (wet) (*Zingiber officinale* Roscoe)

	Rat No	Preliminary phase	Therapeutic phase
Food intake	**1**		
	2		
	3		
	4		
	5		
	6		
Water intake	**1**		
	2		
	3		
	4		
	5		
	6		
Urine output	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal weight wet	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal weight dry	**1**		
	2		
	3		
	4		
	5		
	6		
Food conversion ratio	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal water content	**1**		
	2		
	3		
	4		
	5		
	6		

	% Change		
Percentage changes in body weight	**1**		
	2		
	3		
	4		
	5		
	6		

Body weight changes:

Rat No	Day 1	Day 5	Day 15
1			
2			
3			
4			
5			
6			

GROUP 2: Shunti (Dried) (*Zingiber officinale* Roscoe)

	Rat No	Preliminary phase	Therapeutic phase
Food intake	**1**		
	2		
	3		
	4		
	5		
	6		
Water intake	**1**		
	2		
	3		
	4		
	5		
	6		
Urine output	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal weight wet	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal weight dry	**1**		
	2		
	3		
	4		

	5		
	6		
Food conversion ratio	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal water content	**1**		
	2		
	3		
	4		
	5		
	6		
	% Change		
Percentage changes in body weight	**1**		
	2		
	3		
	4		
	5		
	6		

Body weight changes:

Rat No	**Day 1**	**Day 5**	**Day 15**
1			
2			
3			
4			
5			
6			

GROUP 3: Control group (Normal

	Rat No	**Preliminary phase**	**Therapeutic phase**
Food intake	**1**		
	2		
	3		
	4		
	5		
	6		
Water intake	**1**		
	2		
	3		
	4		
	5		
	6		
Urine output	**1**		
	2		

	3		
	4		
	5		
	6		
Fecal weight wet	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal weight dry	**1**		
	2		
	3		
	4		
	5		
	6		
Food conversion ratio	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal water content	**1**		
	2		
	3		
	4		
	5		
	6		
	% Change		
Percentage changes in body weight	**1**		
	2		
	3		
	4		
	5		
	6		

Body weight changes:

Rat No	**Day 1**	**Day 5**	**Day 15**
1			
2			
3			
4			
5			
6			

RELATIVE VALUES

GROUP 1: Ardraka (*Zingiber officinale* Roscoe)

	Rat No	Preliminary phase	Therapeutic phase
Food intake	**1**		
	2		
	3		
	4		
	5		
	6		
Water intake	**1**		
	2		
	3		
	4		
	5		
	6		
Urine output	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal weight wet	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal weight dry	**1**		
	2		
	3		
	4		
	5		
	6		
Food conversion ratio	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal water content	**1**		
	2		
	3		
	4		
	5		
	6		

GROUP 2: Shunti (Dried) (*Zingiber officinale* Roscoe)

	Rat No	Preliminary phase	Therapeutic phase
Food intake	**1**		
	2		
	3		
	4		
	5		
	6		
Water intake	**1**		
	2		
	3		
	4		
	5		
	6		
Urine output	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal weight wet	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal weight dry	**1**		
	2		
	3		
	4		
	5		
	6		
Food conversion ratio	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal water content	**1**		
	2		
	3		
	4		
	5		
	6		

GROUP 3: Control group(Normal)

	Rat No	Preliminary phase	Therapeutic phase
Food intake	**1**		
	2		
	3		
	4		
	5		
	6		
Water intake	**1**		
	2		
	3		
	4		
	5		
	6		
Urine output	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal weight wet	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal weight dry	**1**		
	2		
	3		
	4		
	5		
	6		
Food conversion ratio	**1**		
	2		
	3		
	4		
	5		
	6		
Fecal water content	**1**		
	2		
	3		
	4		
	5		
	6		

Result and observation

Effect of test drug on food consumption with data presented in absolute values				
Food consumption in g/100 g body weight	Group	Group 1 Ardraka (Wet) (*Zingiber officinale* Roscoe)	Group 2 Shunti (Dried)(*Zingiber officinale* Roscoe)	Group 3 Control group (Normal)
	Preliminary phase MEAN ± SEM			
	% Change			
	Therapeutic phase MEAN ± SEM			
	% Change			
	Data: MEAN ± SEM, *P<0.05, **P<0.01			
Effect of test drug on food consumption with data presented in terms of relative values				
Food consumption in g/100 g body weight	Preliminary phase MEAN ± SEM			
	% Change			
	Therapeutic phase MEAN ± SEM			
	% Change			
	Data: MEAN ± SEM # P<0.05-Compared with preliminary phase,			
Effect of test drug on water consumption with data presented in terms of absolute values				
water consumption in ml	Preliminary phase MEAN ± SEM			
	% Change			
	Therapeutic phase MEAN ± SEM			
	% Change			
	Data: MEAN ± SEM,**P<0.01			
Effect of test drug on water consumption with data presented in terms of relative values:				
water consumption in ml / 100g body weight	Preliminary phase MEAN ± SEM			
	% Change			
	Therapeutic phase MEAN ± SEM			
	% Change			
	Data: MEAN ± SEM			
Effect of test drug on urine output with data presented in terms of absolute values				
urine output in ml	Preliminary phase MEAN ± SEM			
	% Change			
	Therapeutic			

	phase MEAN ± SEM			
	% Change			
	Data:MEAN ± SEM ## P<0.01-Compared with preliminary phase,			
Effect of test drug on urine output with data presented in terms of relative values				
urine output in ml /100 g body weight	Preliminary phase MEAN ± SEM			
	% Change			
	Therapeutic phase MEAN ± SEM			
	% Change			
	Data: MEAN ± SEM *P<0.05- compared with control # P<0.05-Compared with preliminary phase,			
Effect of test drug on fecal weight wet with data presented in terms of absolute values				
Fecal weight wet in g	Preliminary phase MEAN ± SEM			
	% Change			
	Therapeutic phase MEAN ± SEM			
	% Change			
	Data:MEAN ± SEM, *P<0.05- compared with control ## P<0.01-Compared with preliminary phase,			
Effect of test drug on fecal weight wet with data presented in terms of relative values				
fecal weight wet in g/100 g body weight	Preliminary phase MEAN ± SEM			
	% Change			
	Therapeutic phase MEAN ± SEM			
	% Change			
	Data: MEAN ± SEM ### P<0.001-Compared with preliminary phase			
Effect of test drug on fecal weight dry with data presented in terms of absolute values				
fecal weight dry in g	Preliminary phase MEAN ± SEM			
	% Change			
	Therapeutic phase MEAN ± SEM			
	% Change			
	Data: MEAN ± SEM, *P<0.05, P<0.01			
Effect of test drug on fecal weight dry with data presented in terms of relative values				
fecal weight dry in g/100 g body weight	Preliminary phase MEAN ± SEM			
	% Change			

	Therapeutic phase MEAN ± SEM			
	% Change			
	Data: MEAN ± SEM, *P<0.05, P<0.01			
Effect of test drug on food conversion ratio with data presented in terms of absolute values				
food conversion ratio in g	Preliminary phase MEAN ± SEM			
	% Change			
	Therapeutic phase MEAN ± SEM			
	% Change			
	MEAN ± SEM, ## P<0.01-Compared with preliminary phase,			
Effect of test drug on food conversion ratio with data presented in terms of relative values				
food conversion ratio in g/100 g body weight	Preliminary phase MEAN ± SEM			
	% Change			
	Therapeutic phase MEAN ± SEM			
	% Change			
	MEAN ± SEM# P<0.05,## P<0.01-Compared with preliminary phase			
Effect of test drug on fecal water content with data presented in terms of absolute values				
fecal water content in g	Preliminary phase MEAN ± SEM			
	% Change			
	Therapeutic phase MEAN ± SEM			
	% Change			
	Data: MEAN ± SEM, *P<0.05- compared with control group ### P<0.001-Compared with preliminary phase			
of test drug on changes in body weight of each group before and after				
Initial body wt MEAN ± SEM				
Final body wt MEAN ± SEM				
Effect of test drug on % changes in body weight				
MEAN ± SEM				
% Change				
MEAN ± SEMThe data in table 8a represents changes in body weight in grams and that in table 8b represents percentage changes in body weight from initial body weight				

ANNEXURE III

Tilak Maharastra Vidyapeeth, Pune

Title: An Experimental study to assess the Deepana activity of Ayurvedic Herb in relation to its Rasa and Vipaka

Informed Written Consent

Name:

Age **Gender**

Date

1. I confirm that I have read & understood the information for the study & have had the opportunity to ask questions.
2. I understand that my participation in the study is voluntary & that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.
3. I understand that the sponsors of the clinical trial are working on the sponsor's behalf, the ethics committee & the regulatory authority will not need my permission to look at my health records that may be conducted in relation to it, even if I withdraw from the trial. I agree to this access. However I understand that my identity will not be reveled in any information released to third parties or published.
4. I agree not to restrict the use of any data or result that arises from this study provided such a use is only for scientific purpose.
5. I agree to take part in the above study.

Signature or left thumb impression **Signature of the Investigator**

ANNEXURE III

Tilak Maharastra Vidyapeeth, Pune

Case code:

QUESSTIONAIRE TO ASSESS TASTE THRESHOLD

Please mention appropriate '+' mark

Domain	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Irritation on Tongue(Tudativacha)										
Pricking /Tingling sensation(Chimchimayana)										
Burning sensation in Mouth /Chest(Daha)										
Secretions through mouth ,nose and Eye (Chakshurvirechayati)										
Burning sensation in chest and abdomen(Vidahatideham)										
Irritation in the nasopharangeal region (Kanta and Shiropradesha)										
Excessive salivation (AasyaSravana)										

Mild + (1) **Moderate ++ (2)** **Strong +++(3)**

LIKERT VALUESCALE (NUMERICAL VALUES)

- **Please write the glass number in the box given below**

Sl No	**Taste of liquid**	**No. of test tubes**									
1.	Same as water										
2.	Doubtful if Pure water										
3.	A very faint taste can't say what										

4. **A very faint taste of**											
	Rasa										
	Madhura										
	Amla										
	Lavana										
	Katu										
	Tikta										
	Kashaya										

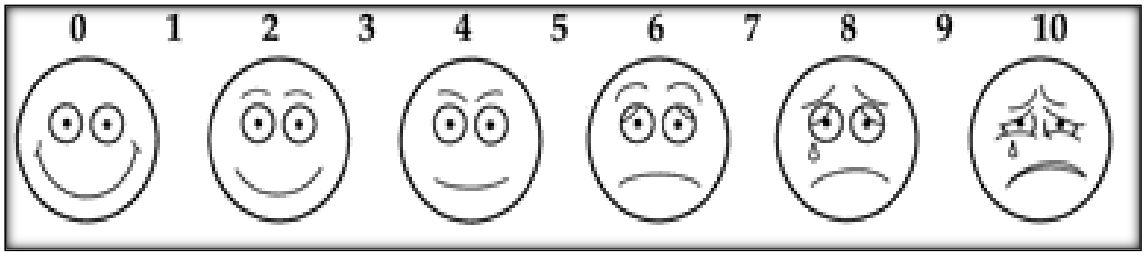
A faint taste of										
	Rasa	**No. of test tube**								
	Madhura									
	Amla									
	Lavana									
	Katu									
	Tikta									
	Kashaya									

5. A weak taste of										
	Rasa	**No. of test tube**								
	Madhura									
	Amla									
	Lavana									
	Katu									
	Tikta									
	Kashaya									

6. A clear taste of										
	Rasa	**No. of test tube**								
	Madhura									
	Amla									
	Lavana									
	Katu									
	Tikta									
	Kashaya									

III VISUAL ANALOG SCALE

Please write appropriate score for each test tube



Test tube no	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Score										

Annexure IV

List of Codes used in Master Chart

Particulars	Code	Description
Groups	1	Adaraka
	2	Shunti
	3	Capsicum
Gender	1	Female
	2	Male
Irritation on Tongue (Tudativacha)	0	Zero/Nil
	1	Mild
	2	Moderate
	3	Strong
Pricking /Tingling sensation (Chimchimayana)	0	Zero/Nil
	1	Mild
	2	Moderate
	3	Strong
Burning sensation in Mouth /Chest (Daha)	0	Zero/Nil
	1	Mild
	2	Moderate
	3	Strong
Secretions through mouth ,nose and Eye Chakshurvirechayati)	0	Zero/Nil
	1	Mild
	2	Moderate
	3	Strong
Burning sensation in chest and abdomen (Vidahati deham)	0	Zero/Nil
	1	Mild
	2	Moderate
	3	Strong
Irritation in the nasopharangeal region (Kanta and Shiropradesha)	0	Zero/Nil
	1	Mild
	2	Moderate
	3	Strong
Excessive salivation (Aasya Sravana)	0	Zero/Nil
	1	Mild
	2	Moderate
	3	Strong
Taste of liquid	1	Same as water
	2	Doubtful if Pure water
	3	A very faint taste can't say what
A very faint taste of	0	None
	1	Madhura
	2	Amla
	3	Lavana
	4	Katu

	5	Tikta
	6	Kashaya
A faint taste of	0	None
	1	Madhura
	2	Amla
	3	Lavana
	4	Katu
	5	Tikta
	6	Kashaya
A weak taste of	0	None
	1	Madhura
	2	Amla
	3	Lavana
	4	Katu
	5	Tikta
	6	Kashaya
A clear taste of	0	None
	1	Madhura
	2	Amla
	3	Lavana
	4	Katu
	5	Tikta
	6	Kashaya

Case code	Group1-Ardraka	age	gender	Irritation on Tongue (Tudativacha) @10 %	Irritation on Tongue (Tudativacha) @ 20% .	Irritation on Tongue (Tudativacha) @ 30.	Irritation on Tongue (Tudativacha) @ 40%	Irritation on Tongue (Tudativacha) @ 50%	Irritation on Tongue (Tudativacha) @60 %	Irritation on Tongue (Tudativacha) @ 70%	Irritation on Tongue (Tudativacha) @ 80%	Irritation on Tongue (Tudativacha) @ 90% .	Irritation on Tongue (Tudativacha) @100 %	Pricking sensation (Chimchimayana) (@ 10%	Pricking sensation (Chimchimayana) (@ 20%	Pricking sensation (Chimchimayana) (@ 230%	Pricking sensation (Chimchimayana) (@ 40%	Pricking sensation (Chimchimayana) (@ 50%	Pricking sensation (Chimchimayana) (@ 60%	Pricking sensation (Chimchimayana) (@ 70%	Pricking sensation (Chimchimayana) (@ 80%	Pricking sensation (Chimchimayana) (@ 90%	Pricking /sensation (Chimchimayana) (@ 100%	Burning sensation in Mouth /Chest (Daha) 10(@ % Conc	Burning sensation in Mouth /Chest (Daha) 20(@ % Conc	Burning sensation in Mouth /Chest (Daha) 30(@ % Conc	Burning sensation in Mouth /Chest (Daha) 40(@ % Conc	Burning sensation in Mouth /Chest (Daha) 50(@ % Conc	Burning sensation in Mouth /Chest (Daha) 60(@ % Conc	Burning sensation in Mouth /Chest (Daha) 70 (@ % Conc	Burning sensation in Mouth /Chest (Daha) 80(@ % Conc	Burning sensation in Mouth /Chest (Daha) 90(@ % Conc	Burning sensation in Mouth /Chest (Daha) 100(@ % Conc	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@10 %	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 20%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 30%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 40%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 50%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 60%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 70%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 80%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 90%	Secretions through mouth ,nose ad Eye (Chakshurvirechayati)(@ 100%	Burning sensation in chest and abdomen (Vidahati deham)(@ 10%	Burning sensation in chest and abdomen (Vidahati deham)(@ 20%
1	1	19	1	0	1	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1	18	2	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	1	18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	1	18	2	0	1	0	0	0	0	1	2	2	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	1	19	2	0	2	2	2	0	0	0	2	2	3	3	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	1	18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	1	19	1	0	1	1	2	3	0	2	2	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	1	18	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	1	19	2	1	2	2	3	3	0	0	0	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	1	19	1	0	1	2	2	2	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	1	18	2	0	1	2	2	2	0	0	0	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	1	19	1	0	2	2	3	3	0	0	0	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	1	18	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	1	19	1	0	0	1	2	2	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	1	18	1	0	1	1	2	2	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	1	18	1	0	1	1	2	2	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	1	18	1	0	0	1	2	2	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	1	20	1	1	1	1	2	2	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	1	18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	1	19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	1	18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	1	18	1	0	0	1	1	2	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	1	19	1	0	1	2	2	2	0	0	0	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	1	18	1	0	0	0	1	2	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	1	18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	1	18	1	0	0	0	1	1	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	1	18	1	0	1	1	1	1	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	1	19	1	0	0	0	1	1	0	0	0	2	2	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	1	18	2	1	0	1	1	2	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	1	20	1	0	0	0	1	1	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	1	18	1	0	0	0	1	2	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	1	20	1	1	1	0	1	2	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	1	18	1	0	1	2	2	2	0	0	0	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	1	18	1	0	1	2	2	3	0	0	0	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	1	21	1	0	1	2	3	3	0	1	2	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	1	20	1	0	0	0	1	2	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	1	20	1	0	0	0	1	2	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Case code	Group1-Ardraka	age	gender	Irritation on Tongue (Tudativacha) @10 %	Irritation on Tongue (Tudativacha) @ 20% .	Irritation on Tongue (Tudativacha) @ 30.	Irritation on Tongue (Tudativacha) @ 40%	Irritation on Tongue (Tudativacha) @ 50%	Irritation on Tongue (Tudativacha) @60 %	Irritation on Tongue (Tudativacha) @ 70%	Irritation on Tongue (Tudativacha) @ 80%	Irritation on Tongue (Tudativacha) @ 90% .	Irritation on Tongue (Tudativacha) @100 %	Pricking sensation (Chimchimayana) (@ 10%	Pricking sensation (Chimchimayana) (@ 20%	Pricking sensation (Chimchimayana) (@ 230%	Pricking sensation (Chimchimayana) (@ 40%	Pricking sensation (Chimchimayana) (@ 50%	Pricking sensation (Chimchimayana) (@ 60%	Pricking sensation (Chimchimayana) (@ 70%	Pricking sensation (Chimchimayana) (@ 80%	Pricking sensation (Chimchimayana) (@ 90%	Pricking /sensation (Chimchimayana) (@ 100%	Burning sensation in Mouth /Chest (Daha) 10(@ % Conc	Burning sensation in Mouth /Chest (Daha) 20(@ % Conc	Burning sensation in Mouth /Chest (Daha) 30(@ % Conc	Burning sensation in Mouth /Chest (Daha) 40(@ % Conc	Burning sensation in Mouth /Chest (Daha) 50(@ % Conc	Burning sensation in Mouth /Chest (Daha) 60(@ % Conc	Burning sensation in Mouth /Chest (Daha) 70 (@ % Conc	Burning sensation in Mouth /Chest (Daha) 80(@ % Conc	Burning sensation in Mouth /Chest (Daha) 90(@ % Conc	Burning sensation in Mouth /Chest (Daha) 100(@ % Conc	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@10 %	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 20%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 30%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 40%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 50%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 60%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 70%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 80%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 90%	Secretions through mouth ,nose ad Eye (Chakshurvirechayati)(@ 100%	Burning sensation in chest and abdomen (Vidahati deham)(@ 10%	Burning sensation in chest and abdomen (Vidahati deham)(@ 20%
38	1	25	1	0	2	1	1	0	2	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	1	21	1	0	0	1	1	2	2	2	2	2	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	1	20	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	1	18	1	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	1	18	1	0	0	1	1	0	0	2	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	1	18	1	0	1	2	2	2	2	2	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	1	21	1	0	0	1	1	0	0	1	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	1	19	1	0	0	1	1	1	1	2	3	3	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	1	19	2	0	1	1	1	2	2	1	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	1	18	2	0	1	1	2	2	3	3	3	3	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	1	20	2	1	0	1	2	2	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	1	18	2	0	1	1	1	1	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	1	19	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	1	20	1	0	1	2	2	2	2	2	2	2	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	1	21	1	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	1	21	1	0	0	1	1	2	2	2	2	2	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54	1	20	1	0	1	1	1	1	1	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	1	21	2	1	0	2	2	2	2	2	2	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	1	19	2	0	0	0	1	2	2	2	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	1	22	1	0	1	1	1	1	1	2	2	3	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	1	21	1	0	1	2	2	2	2	2	3	3	3	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	1	20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	1	25	2	1	1	2	2	2	2	3	3	3	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	1	25	1	0	1	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	1	20	2	0	1	2	2	2	2	2	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	1	20	1	0	0	1	1	1	1	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	1	25	1	1	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	1	22	2	0	0	1	2	2	2	2	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	1	22	2	0	0	0	1	2	2	2	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	1	25	2	0	1	2	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	1	19	2	0	1	1	1	2	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	1	25	1	1	1	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70	1	19	1	1	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71	1	25	1	1	1	2	2	2	2	2	2	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72	1	18	1	0	1	2	3	3	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
73	1	18	1	0	0	1	2	3	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74	1	21	1	0	0	1	2	3	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Case code	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Group1-Ardraka	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
age	21	19	19	21	18	18	18	25	25	25	20	20	20	21	22	19	19	25	19	25	19	19	19	19	19	19
gender	2	1	1	1	1	1	2	1	2	2	1	1	1	1	1	2	2	1	2	1	2	1	2	1	1	1
Irritation on Tongue (Tudativacha) @10 %	0	1	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	1	2	0	0	0	1	1
Irritation on Tongue (Tudativacha) @ 20% .	0	1	0	1	0	1	1	0	1	1	0	0	0	0	2	0	0	0	0	1	1	1	0	0	1	1
Irritation on Tongue (Tudativacha) @ 30.	1	0	1	1	1	1	1	1	1	1	0	0	1	0	2	0	0	0	0	2	1	2	1	0	2	1
Irritation on Tongue (Tudativacha) @ 40%	0	1	2	1	2	1	1	1	1	1	1	0	1	0	2	1	0	1	0	2	1	2	1	0	2	1
Irritation on Tongue (Tudativacha) @ 50%	0	2	2	1	2	1	1	1	1	1	1	0	1	0	2	1	1	1	0	3	1	2	1	0	2	1
Irritation on Tongue (Tudativacha) @60 %	0	2	2	1	2	2	2	1	1	1	1	0	1	0	2	1	1	2	1	3	1	2	1	0	2	1
Irritation on Tongue (Tudativacha) @ 70%	0	2	2	2	2	2	2	1	1	1	1	1	1	1	2	1	1	2	1	3	1	2	1	0	2	2
Irritation on Tongue (Tudativacha) @ 80%	0	2	2	2	2	2	2	2	1	1	1	1	1	1	2	1	1	2	1	2	1	3	1	0	1	3
Irritation on Tongue (Tudativacha) @ 90% .	0	2	2	2	2	2	2	2	2	1	1	1	1	1	2	1	1	2	1	2	1	3	1	0	1	3
Irritation on Tongue (Tudativacha) @100 %	0	2	2	2	2	2	2	2	1	1	1	1	1	1	2	1	1	2	1	2	1	3	1	0	1	3
Pricking sensation (Chimchimayana) (@ 10%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pricking sensation (Chimchimayana) (@ 20%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pricking sensation (Chimchimayana) (@ 230%	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Pricking sensation (Chimchimayana) (@ 40%	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Pricking sensation (Chimchimayana) (@ 50%	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Pricking sensation (Chimchimayana) (@ 60%	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Pricking sensation (Chimchimayana) (@ 70%	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Pricking sensation (Chimchimayana) (@ 80%	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Pricking sensation (Chimchimayana) (@ 90%	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Pricking /sensation (Chimchimayana) (@ 100%	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Burning sensation in Mouth /Chest (Daha) 10(@ % Conc	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burning sensation in Mouth /Chest (Daha) 20(@ % Conc	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burning sensation in Mouth /Chest (Daha) 30(@ % Conc	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burning sensation in Mouth /Chest (Daha) 40(@ % Conc	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burning sensation in Mouth /Chest (Daha) 50(@ % Conc	0	1	1	1	2	2	1	1	1	0	1	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0
Burning sensation in Mouth /Chest (Daha) 60(@ % Conc	2	1	1	1	1	2	1	1	1	0	1	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0
Burning sensation in Mouth /Chest (Daha) 70 (@ % Conc	0	1	1	2	1	2	1	1	1	0	1	1	1	3	2	0	0	0	0	0	0	0	0	0	0	0
Burning sensation in Mouth /Chest (Daha) 80(@ % Conc	0	1	1	2	1	2	1	2	1	0	1	1	1	3	2	0	0	0	0	0	0	0	0	0	0	0
Burning sensation in Mouth /Chest (Daha) 90(@ % Conc	2	1	1	2	2	2	1	2	1	0	1	1	1	3	2	0	0	0	0	0	0	0	0	0	0	0
Burning sensation in Mouth /Chest (Daha) 100(@ % Conc	0	1	1	2	2	2	1	2	1	0	1	1	1	3	2	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@10 %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 20%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 30%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 40%	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 50%	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 60%	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 70%	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 80%	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 90%	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0
Secretions through mouth ,nose ad Eye (Chakshurvirechayati)(@ 100%	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	1	0	0	0	0	1	0	0	0	0
Burning sensation in chest and abdomen (Vidahati deham)(@ 10%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burning sensation in chest and abdomen (Vidahati deham)(@ 20%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Case code	Burning sensation in chest and abdomen (Vidahati deham)(@ 30%	Burning sensation in chest and abdomen (Vidahati deham)(@ 40%	Burning sensation in chest and abdomen (Vidahati deham)(@ 50%	Burning sensation in chest and abdomen (Vidahati deham)(@ 60%	Burning sensation in chest and abdomen (Vidahati deham)(@ 70%	Burning sensation in chest and abdomen (Vidahati deham)(@ 80%	Burning sensation in chest and abdomen (Vidahati deham)(@ 90%	Burning sensation in chest and abdomen (Vidahati deham)(@ 100%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@10 %	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 20%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 30%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 40%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 50%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@60 %	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 70%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 80%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 90%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 100%	Excessive salivation (Aasya Sravana)(@10 % Conc	Excessive salivation (Aasya Sravana)(@20 % Conc	Excessive salivation (Aasya Sravana)(@30 % Conc	Excessive salivation (Aasya Sravana)(@40 % Conc	Excessive salivation (Aasya Sravana)(@50 % Conc	Excessive salivation (Aasya Sravana)(@60 % Conc	Excessive salivation (Aasya Sravana)(@70 % Conc	Excessive salivation (Aasya Sravana)(@80 % Conc	Excessive salivation (Aasya Sravana)(@90 % Conc	Excessive salivation (Aasya Sravana)(@100 % Conc	Taste of liquid glass no 0	Taste of liquid glass no 1	Taste of liquid glass no 2	Taste of liquid glass no 3	Taste of liquid glass no 4	Taste of liquid glass no 5	Taste of liquid glass no 6	Taste of liquid glass no 7	Taste of liquid glass no 8	Taste of liquid glass no 9	Taste of liquid glass no 10	a_veryfaint_taste_of1	a_veryfaint_taste_of2	a_veryfaint_taste_of3
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2	2	2	2	0	0	4
2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	1	1	0	0	1	0	0	2	0	2	2	2	2	2	2	2	2	2	2	4	5	5
3	1	1	1	1	1	1	1	2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	1	2	0	2	3	3	2	2	2	2	2	2	2	1	0	0
4	0	0	0	0	0	0	0	0	0	1	2	1	1	1	3	2	3	3	0	1	1	0	1	0	0	0	0	0	0	1	2	3	3	3	2	2	2	2	2	1	6	5
5	0	0	0	0	0	0	0	1	1	0	0	2	2	2	2	2	2	3	0	0	0	0	0	0	0	0	1	1	0	1	3	3	3	2	2	2	2	2	2	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3	3	3	3	3	3	0	4	4
7	0	0	0	1	1	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	3	3	3	3	3	3	0	0	0
8	0	0	0	0	0	0	1	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3	3	3	3	3	3	3	3	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	3	0	0	0	0	0	0	0	0	0	0	0	1	3	3	3	3	3	3	3	3	3	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	2	2	3	2	2	2	2	2	0	4	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2	2	2	2	0	0	4
12	0	0	0	2	3	3	3	3	0	1	2	0	0	2	2	2	3	3	0	0	0	0	1	2	0	0	0	0	0	1	2	2	3	3	3	3	3	3	3	1	5	5
13	0	0	0	0	0	2	0	0	0	0	0	1	1	1	2	2	3	3	1	0	0	0	0	0	0	0	0	0	0	2	2	3	2	2	2	2	2	2	2	5	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	2	2	3	3	2	2	2	2	2	0	4	0
15	0	0	0	0	1	1	1	1	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	3	3	3	3	3	3	3	3	3	3	4	4	4
16	0	0	1	1	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	2	2	2	2	2	2	2	2	2	4	4
17	0	0	0	0	0	0	0	0	1	1	2	3	3	3	3	3	3	3	0	0	0	0	0	0	0	1	1	1	0	2	2	3	3	3	3	3	3	3	3	5	0	0
18	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	3	3	3	3	3	3	4	5	0
19	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3	0	3	1	0	0	0	0	0	0	0	0	0	0	1	3	3	3	3	3	3	3	3	3	5	5	4
20	1	2	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	2	2	2	3	0	2	3	3	3	3	3	3	3	3	3	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	3	3	3	3	3	3	3	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	3	3	3	3	3	3	3	3	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3	3	3	3	3	3	0	0	0
24	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	2	2	2	2	2	2	2	2	0	4	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	2	2	2	2	2	2	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	2	2	2	2	2	2	2	0	4	0
27	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	2	2	2	1	1	0	0	0	0	0	0	0	0	0	3	3	3	3	2	2	2	2	2	2	1	0	0
28	1	2	2	1	2	2	3	3	0	0	1	0	1	1	2	2	2	3	0	0	0	0	0	1	2	0	2	2	0	2	3	3	3	3	3	3	3	2	2	6	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	2	2	2	2	2	2	2	0	4	4
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	3	3	2	2	2	2	2	0	4	0
31	0	0	1	1	1	1	2	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3	3	2	2	2	2	2	2	2	2	0	0	4
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	3	3	2	2	2	2	2	2	2	0	0
33	0	1	1	2	2	2	3	3	0	0	0	0	0	1	2	2	2	3	0	0	0	0	0	0	0	0	0	0	0	3	3	2	2	2	2	2	2	2	2	1	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	2	2	2	2	2	0	0	4
35	0	1	1	1	2	2	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	2	3	3	2	3	2	2	2	2	2	0	5	0
36	0	0	0	1	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	2	2	3	3	2	2	2	2	2	0	4	4
37	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	2	3	0	0	1	1	1	1	1	1	2	2	0	1	2	3	3	2	2	2	2	2	2	1	0	4

74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	Case code
0	0	0	0	1	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 30%
0	0	1	1	1	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	1	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 40%
0	0	1	1	2	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	1	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 50%
0	1	1	1	2	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	2	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 60%
0	1	2	1	2	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	2	0	2	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 70%
0	1	2	2	3	0	0	0	0	0	2	0	0	0	3	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	0	0	0	2	0	3	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 80%
0	1	2	2	3	0	0	0	0	0	2	0	0	0	3	0	0	0	1	0	2	0	0	2	0	0	0	0	0	2	0	0	0	2	0	3	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 90%
0	1	3	2	3	0	1	0	0	0	2	0	0	0	3	1	0	0	2	0	2	0	0	3	0	0	0	0	0	2	0	0	0	1	0	3	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 100%
0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@10 %
0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 20%
0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 30%
1	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 40%
1	0	0	0	1	0	0	0	0	0	2	0	0	0	2	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	3	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 50%
0	0	0	0	1	0	0	0	0	0	2	0	0	0	2	0	0	1	0	0	0	0	0	1	0	1	0	0	0	2	0	0	0	0	0	0	1	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@60 %
1	0	0	0	2	0	0	0	0	0	2	0	0	0	2	0	0	2	0	0	1	0	0	2	0	2	0	0	0	2	0	0	0	0	3	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 70%
1	0	0	0	3	0	0	0	0	0	2	0	0	0	3	0	0	2	0	0	4	0	0	2	0	3	0	0	0	3	0	0	0	0	3	0	1	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 80%
2	0	0	0	3	0	0	0	0	0	2	0	0	0	3	0	0	2	0	0	2	0	0	2	0	3	0	0	0	3	0	0	0	0	3	0	1	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 90%
3	0	0	0	3	0	0	0	0	0	3	0	0	0	3	0	0	2	0	0	2	0	0	3	0	3	0	0	0	3	0	0	0	0	3	0	1	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 100%
0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	Excessive salivation (Aasya Sravana)(@10 % Conc
0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@20 % Conc
1	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@30 % Conc
1	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	Excessive salivation (Aasya Sravana)(@40 % Conc
1	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	Excessive salivation (Aasya Sravana)(@50 % Conc
1	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	2	Excessive salivation (Aasya Sravana)(@60 % Conc
1	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	2	Excessive salivation (Aasya Sravana)(@70 % Conc
1	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	2	Excessive salivation (Aasya Sravana)(@80 % Conc
2	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	1	0	0	0	0	0	0	1	0	0	0	3	0	0	0	2	0	0	2	Excessive salivation (Aasya Sravana)(@90 % Conc
2	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	2	0	0	0	0	0	0	2	0	0	0	3	0	0	0	3	0	0	2	Excessive salivation (Aasya Sravana)(@100 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Taste of liquid glass no 0
2	2	2	2	3	3	3	2	1	2	3	3	2	2	3	3	2	2	3	3	3	2	3	3	1	3	3	3	2	1	2	3	2	3	3	3	1	Taste of liquid glass no 1
2	2	2	2	3	3	3	2	2	2	3	3	2	2	3	3	2	2	3	3	3	2	3	3	1	3	3	3	2	2	2	3	2	3	3	3	2	Taste of liquid glass no 2
2	2	2	2	3	3	3	2	2	3	3	3	2	2	3	3	2	2	3	3	2	2	3	3	1	3	3	3	2	2	2	3	2	3	3	3	3	Taste of liquid glass no 3
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2	2	2	3	2	2	1	2	2	2	3	2	2	2	2	2	3	3	2	Taste of liquid glass no 4
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2	2	2	3	2	2	1	2	2	2	3	2	2	2	2	2	3	3	2	Taste of liquid glass no 5
2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	2	3	3	2	2	2	3	2	2	2	2	2	2	3	2	2	2	2	2	3	3	2	Taste of liquid glass no 6
2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	2	3	3	2	2	2	3	2	2	3	2	2	2	3	2	2	2	2	2	3	3	2	Taste of liquid glass no 7
2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	2	3	3	2	2	2	3	2	2	3	2	2	2	3	2	2	2	2	2	3	3	2	Taste of liquid glass no 8
2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	2	3	3	2	2	2	3	2	2	3	2	2	2	3	2	2	2	2	2	3	3	2	Taste of liquid glass no 9
2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	2	3	3	2	2	2	3	2	2	3	2	2	2	3	2	2	2	2	2	3	3	2	Taste of liquid glass no 10
0	1	0	1	6	4	0	4	1	6	1	4	0	6	0	0	0	0	5	5	0	4	1	0	1	0	2	2	0	0	1	0	0	0	0	0	4	a_veryfaint_taste_of1
1	4	5	4	6	6	4	0	4	6	4	4	0	6	0	0	0	0	0	5	0	4	0	0	1	0	4	4	0	0	0	0	0	0	0	0	4	a_veryfaint_taste_of2
4	4	0	4	4	4	0	0	4	4	4	4	0	6	0	0	0	0	0	5	0	4	0	0	1	0	4	4	0	0	0	0	0	0	0	0	3	a_veryfaint_taste_of3

Case code	Burning sensation in chest and abdomen (Vidahati deham)(@ 30%	Burning sensation in chest and abdomen (Vidahati deham)(@ 40%	Burning sensation in chest and abdomen (Vidahati deham)(@ 50%	Burning sensation in chest and abdomen (Vidahati deham)(@ 60%	Burning sensation in chest and abdomen (Vidahati deham)(@ 70%	Burning sensation in chest and abdomen (Vidahati deham)(@ 80%	Burning sensation in chest and abdomen (Vidahati deham)(@ 90%	Burning sensation in chest and abdomen (Vidahati deham)(@ 100%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@10 %	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 20%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 30%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 40%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 50%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@60 %	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 70%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 80%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 90%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 100%	Excessive salivation (Aasya Sravana)(@10 % Conc	Excessive salivation (Aasya Sravana)(@20 % Conc	Excessive salivation (Aasya Sravana)(@30 % Conc	Excessive salivation (Aasya Sravana)(@40 % Conc	Excessive salivation (Aasya Sravana)(@50 % Conc	Excessive salivation (Aasya Sravana)(@60 % Conc	Excessive salivation (Aasya Sravana)(@70 % Conc	Excessive salivation (Aasya Sravana)(@80 % Conc	Excessive salivation (Aasya Sravana)(@90 % Conc	Excessive salivation (Aasya Sravana)(@100 % Conc	Taste of liquid glass no 0	Taste of liquid glass no 1	Taste of liquid glass no 2	Taste of liquid glass no 3	Taste of liquid glass no 4	Taste of liquid glass no 5	Taste of liquid glass no 6	Taste of liquid glass no 7	Taste of liquid glass no 8	Taste of liquid glass no 9	Taste of liquid glass no 10	a_veryfaint_taste_of1	a_veryfaint_taste_of2	a_veryfaint_taste_of3
75	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3	0	3	1	0	0	0	0	0	0	0	0	0	3	3	3	3	3	3	2	2	2	2	5	5	4
76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	0	3	2	2	2	2	2	2	2	2	2	0	0	0
77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	3	2	3	2	2	2	2	2	2	2	2	0	0	0
78	0	0	0	0	0	0	0	1	0	0	0	1	0	1	2	2	2	3	0	0	0	0	0	0	0	0	0	0	3	2	2	2	2	2	2	2	2	2	2	0	4	4
79	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	0	2	3	2	2	2	2	2	2	2	2	0	4	0
80	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2	2	3	3	0	0	1	1	1	1	1	1	1	1	0	1	2	3	2	2	2	2	2	2	2	1	6	6
81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	2	3	2	2	2	2	2	2	2	2	0	4	4
82	0	0	0	0	0	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	3	3	3	3	3	3	3	3	3	4	0	0
83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	3	2	2	2	2	2	2	2	2	2	1	0	0
84	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	3	2	3	3	2	2	2	2	2	2	0	0	0
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	1	2	3	3	3	3	2	2	2	0	0	0
86	0	0	0	0	0	0	1	2	0	0	1	2	2	3	3	3	3	3	0	0	0	0	0	0	0	0	1	2	0	1	3	3	3	3	3	3	3	3	3	4	4	4
87	0	0	1	1	1	2	2	2	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3	3	3	3	3	3	4	4	0
88	0	0	0	0	0	1	2	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	3	2	2	2	2	2	2	2	2	4	0	0
89	0	0	0	0	0	1	1	2	0	0	0	0	0	0	2	1	2	2	0	0	0	0	0	0	0	1	1	2	0	3	3	3	3	2	2	2	2	2	2	4	4	0
90	0	0	0	0	1	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	2	2	0	2	3	2	2	2	2	2	2	2	2	6	4	4
91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	3	3	3	2	2	2	2	2	0	0	0
92	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	3	2	2	2	2	2	2	2	2	2	0	0	0
93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	3	2	2	2	2	2	2	2	0	4	4
94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3	3	3	3	3	3	3	2	1	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2	2	2	0	4	0
96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	2	2	2	2	2	2	2	2	2	2	4	4	0
97	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2	3	3	3	0	0	0
98	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2	3	2	3	3	3	3	3	3	0	0	0
99	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	1	1	1	1	0	1	1	1	1	1	0	2	2	2	2	2	2	2	2	2	2	0	4	4
100	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	3	3	3	3	3	3	3	3	3	3	0	0	0

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	Case code
4	4	0	5	0	0	0	0	0	0	4	5	0	0	0	0	0	0	4	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	4	a_veryfaint_taste_of4
4	4	0	0	0	0	0	0	0	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	4	a_veryfaint_taste_of5
4	4	5	0	0	0	0	0	0	0	4	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	a_veryfaint_taste_of6
4	4	5	0	0	0	0	0	0	0	4	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	a_veryfaint_taste_of7
4	4	4	0	0	0	0	0	0	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	a_veryfaint_taste_of8
4	4	5	0	0	0	0	0	0	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	a_veryfaint_taste_of9
4	4	5	0	0	0	0	0	0	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	a_veryfaint_taste_of10
0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	a_faint_taste_of1
0	0	4	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	5	0	0	0	0	a_faint_taste_of2
0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	6	0	0	0	0	0	0	4	0	0	0	1	a_faint_taste_of3
0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	4	0	0	0	1	a_faint_taste_of4
0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	4	0	0	0	1	a_faint_taste_of5
0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	4	0	0	0	4	a_faint_taste_of6
0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	4	0	0	0	5	a_faint_taste_of7
0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	4	0	0	0	0	a_faint_taste_of8
0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	4	0	0	0	0	a_faint_taste_of9
0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	4	0	0	0	0	a_faint_taste_of10
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	a_weak_taste_of1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	a_weak_taste_of2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	a_weak_taste_of3
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	a_weak_taste_of4
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	a_weak_taste_of5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	a_weak_taste_of6
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	a_weak_taste_of7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	a_weak_taste_of8
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	a_weak_taste_of9
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	a_weak_taste_of10
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	a_clear_taste_of1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	a_clear_taste_of2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	a_clear_taste_of3
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	a_clear_taste_of4
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	a_clear_taste_of5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	a_clear_taste_of6
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	a_clear_taste_of7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	a_clear_taste_of8
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	a_clear_taste_of9
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	a_clear_taste_of10
0	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	Visual Analog Scale Score for Glass with 1
1	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	Visual Analog Scale Score for Glass with 2
2	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	Visual Analog Scale Score for Glass with 3
3	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	Visual Analog Scale Score for Glass with 4
4	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	Visual Analog Scale Score for Glass with 5
5	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	Visual Analog Scale Score for Glass with 6
6	7	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	Visual Analog Scale Score for Glass with 7
7	8	8	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	Visual Analog Scale Score for Glass with 8
8	9	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	Visual Analog Scale Score for Glass with 9
9	10	10	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	Visual Analog Scale Score for Glass with 10

Case code	a_veryfaint_taste_of4	a_veryfaint_taste_of5	a_veryfaint_taste_of6	a_veryfaint_taste_of7	a_veryfaint_taste_of8	a_veryfaint_taste_of9	a_veryfaint_taste_of10	a_faint_taste_of1	a_faint_taste_of2	a_faint_taste_of3	a_faint_taste_of4	a_faint_taste_of5	a_faint_taste_of6	a_faint_taste_of7	a_faint_taste_of8	a_faint_taste_of9	a_faint_taste_of10	a_weak_taste_of1	a_weak_taste_of2	a_weak_taste_of3	a_weak_taste_of4	a_weak_taste_of5	a_weak_taste_of6	a_weak_taste_of7	a_weak_taste_of8	a_weak_taste_of9	a_weak_taste_of10	a_clear_taste_of1	a_clear_taste_of2	a_clear_taste_of3	a_clear_taste_of4	a_clear_taste_of5	a_clear_taste_of6	a_clear_taste_of7	a_clear_taste_of8	a_clear_taste_of9	a_clear_taste_of10	Visual Analog Scale Score for Glass with 1	Visual Analog Scale Score for Glass with 2	Visual Analog Scale Score for Glass with 3	Visual Analog Scale Score for Glass with 4	Visual Analog Scale Score for Glass with 5	Visual Analog Scale Score for Glass with 6	Visual Analog Scale Score for Glass with 7	Visual Analog Scale Score for Glass with 8	Visual Analog Scale Score for Glass with 9	Visual Analog Scale Score for Glass with 10
38	0	4	5	0	4	5	5	0	0	0	0	0	0	0	0	0	0	0	5	0	4	5	4	5	0	5	0	0	0	0	0	0	0	5	0	4	2	0	3	2	0	4	3	5	6	7
39	4	5	5	4	5	5	5	0	4	4	4	5	5	4	5	5	5	1	4	6	6	4	4	5	4	0	0	0	0	5	5	6	6	6	0	4	4	0	1	2	4	6	6	8	9	9	10
40	0	0	0	0	0	0	0	5	5	4	6	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	5	5	0	0	4	4	4	6	6	6	6	6	8
41	0	0	0	0	0	0	0	4	0	0	4	0	0	0	6	0	0	0	4	4	0	0	0	5	6	5	5	0	0	0	0	0	4	4	4	4	4	4	0	0	2	2	4	4	4	4	6	6
42	0	0	0	0	0	0	0	0	0	4	0	6	0	4	0	4	0	0	4	0	4	0	6	0	0	0	4	0	0	0	0	0	0	0	4	0	4	0	0	2	2	2	2	2	4	4	4
43	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	0	0	1	1	2	3	4	4	4	4
44	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	5	5	0	1	1	2	2	2	2	2	2	2
45	0	0	0	0	0	0	0	0	0	0	5	6	4	0	0	0	0	0	0	0	0	0	6	6	6	0	0	0	0	0	0	0	0	0	0	4	4	4	1	2	2	4	4	5	6	6	8	9
46	0	0	0	0	0	0	0	2	2	4	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2	3	3
47	0	0	0	0	0	0	0	2	4	4	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	2	2	3	3	4
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	6	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	2	2	3	3	4
49	4	0	0	0	0	0	0	0	0	0	0	4	4	4	6	0	0	0	0	0	0	0	0	0	4	5	0	0	0	0	0	0	0	0	0	4	4	0	1	1	1	3	3	4	5	6	8
50	4	0	4	4	0	0	0	1	1	0	0	0	0	0	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	2
51	0	0	0	0	0	0	0	0	5	4	0	0	0	0	0	0	4	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	4	5	5	4	5	5	2	4	3	6	7	8	8	9	10	10
52	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	0	0	0	0	0	0	0	4	0	5	0	0	0	0	0	0	0	0	4	4	4	0	1	1	2	3	4	4	4	6	8
53	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	0	2	2	2	4	4	4	6	6	6
54	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	1	2	2	2	4	4	4	6	8	8
55	5	6	0	0	0	5	0	4	2	0	0	5	6	6	5	4	4	1	0	0	0	0	5	0	5	5	5	5	4	4	4	4	4	4	4	4	4	4	2	2	4	4	4	5	5	6	7	8
56	6	6	0	0	0	0	0	0	4	0	5	0	0	0	0	0	0	0	0	0	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	4	4	1	2	2	3	3	4	5	5	6	6
57	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6	6	4	4	4	4	4	0	0	0	0	0	6	6	6	6	6	1	2	3	4	4	6	6	8	8	8
58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	0	0	0	0	4	4	4	4	6	6
59	0	5	0	0	0	0	0	1	1	0	0	0	4	4	4	4	0	0	0	4	4	0	6	6	6	6	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	1	1	1	2
60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	0	1	2	3	4	5	6	7	8	10
61	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	2	2	2	2	2	4	4	2	4	6
62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	0	0	1	3	4	6	7	4	9	9
63	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	0	0	0	0	1	1	2	2	4	4
64	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	0	1	1	1	4	5	5	5	5	6
65	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	6	7
66	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4	6	6	5	5	5	0	0	0	0	0	4	4	4	4	4	0	1	1	2	2	3	4	4	6	6
67	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	0	0	1	3	4	5	6	8	9	9
68	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	5	5	5	0	0	0	0	0	0	0	4	4	4	4	0	0	0	2	2	4	4	6	8	8
69	0	0	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	0	0	4	4	5	5	5	5	0	0	0	0	0	0	0	0	4	4	4	4	0	1	2	2	3	4	4	4	5	6
70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	2	2	2	3	4	5	5	6	7	7
71	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	5	6	6	7	7	7	7
72	0	0	5	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	4	4	4	4	4	4	0	1	2	2	3	3	4	6	6	6
73	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	5	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	4	4	4	4	4	0	0	0	0	1	1	1	2	2	3
74	4	4	0	0	0	0	0	0	0	1	1	1	4	5	0	0	0	0	0	0	0	0	0	4	5	5	0	0	0	0	0	0	0	0	0	4	4	0	1	3	3	3	4	5	6	6	8

Case code	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
a_veryfaint_taste_of4	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0
a_veryfaint_taste_of5	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_veryfaint_taste_of6	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_veryfaint_taste_of7	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_veryfaint_taste_of8	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_veryfaint_taste_of9	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_veryfaint_taste_of10	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of2	4	0	0	0	0	0	0	0	0	4	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of3	4	4	4	0	4	0	0	4	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of4	0	4	4	4	0	4	4	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	0
a_faint_taste_of5	0	4	0	4	0	4	4	4	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	4	0
a_faint_taste_of6	0	0	0	4	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of7	0	0	0	5	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_weak_taste_of1	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	4	0	0	0	0	0	4	4	0	1
a_weak_taste_of2	0	0	0	0	0	0	0	0	4	0	4	4	0	0	0	0	4	0	0	0	0	0	4	4	0	6
a_weak_taste_of3	0	0	0	0	0	0	0	0	4	0	4	4	0	0	0	0	4	0	0	0	0	0	4	4	0	6
a_weak_taste_of4	0	0	0	0	4	0	0	0	4	0	4	4	0	0	0	0	4	0	0	0	0	0	4	4	0	0
a_weak_taste_of5	4	0	0	0	0	0	0	0	4	0	4	4	0	0	0	0	4	0	0	0	0	0	4	4	0	5
a_weak_taste_of6	0	0	0	0	0	0	0	0	4	0	4	4	0	0	0	0	4	0	0	0	0	0	4	4	0	0
a_weak_taste_of7	0	0	0	4	0	0	0	0	0	0	4	4	0	0	0	0	4	0	0	0	0	0	4	4	0	0
a_weak_taste_of8	0	0	0	0	0	4	0	0	0	0	4	4	0	0	0	0	4	0	0	0	0	0	4	4	0	0
a_weak_taste_of9	0	0	0	5	0	4	0	0	0	0	4	4	0	0	0	0	4	0	0	0	0	0	4	4	0	0
a_weak_taste_of10	0	0	0	0	0	5	0	0	0	0	5	4	0	0	0	0	4	0	0	0	0	0	4	4	0	0
a_clear_taste_of1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_clear_taste_of2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_clear_taste_of3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
a_clear_taste_of4	0	0	0	0	0	0	0	0	0	0	5	5	0	0	4	0	0	0	4	0	0	0	0	0	0	4
a_clear_taste_of5	0	0	0	0	0	0	0	0	0	0	5	5	0	0	4	0	5	0	0	0	0	0	4	4	0	0
a_clear_taste_of6	4	4	4	0	0	0	0	4	0	0	5	5	0	0	4	0	6	0	0	0	0	0	4	4	0	4
a_clear_taste_of7	4	4	4	0	0	0	0	4	0	0	5	5	0	0	4	0	4	0	0	0	0	0	4	4	0	4
a_clear_taste_of8	4	4	4	0	0	0	0	4	0	0	0	0	0	0	4	0	4	0	0	0	0	0	4	4	0	4
a_clear_taste_of9	4	4	4	0	0	0	0	4	0	0	4	4	0	0	4	0	4	0	0	0	0	0	4	4	0	4
a_clear_taste_of10	4	4	4	0	0	0	0	4	0	0	4	4	0	0	4	0	4	0	0	0	0	0	4	4	0	4
Visual Analog Scale Score for Glass with 1	0	0	0	0	1	0	0	0	1	0	1	0	0	0	1	0	2	0	0	0	0	0	2	3	0	0
Visual Analog Scale Score for Glass with 2	4	0	0	1	0	2	0	1	0	1	0	0	0	0	2	0	3	0	0	0	0	0	2	3	0	0
Visual Analog Scale Score for Glass with 3	4	1	1	1	1	4	0	2	1	1	2	1	0	0	2	1	3	0	0	0	1	1	2	3	0	1
Visual Analog Scale Score for Glass with 4	4	1	1	2	1	4	1	2	1	1	2	2	0	1	2	1	3	0	0	0	1	1	2	3	0	1
Visual Analog Scale Score for Glass with 5	6	2	3	2	2	5	2	3	1	1	3	2	0	2	4	1	4	0	1	1	2	1	3	4	0	2
Visual Analog Scale Score for Glass with 6	6	3	4	3	3	5	3	4	2	2	4	2	0	2	4	2	4	0	1	1	2	2	3	4	0	2
Visual Analog Scale Score for Glass with 7	6	4	4	3	4	5	3	4	2	2	4	3	0	2	4	2	4	0	1	1	2	2	3	4	0	2
Visual Analog Scale Score for Glass with 8	6	4	4	4	4	6	3	4	2	2	4	3	0	2	4	2	4	0	1	1	2	2	3	4	0	2
Visual Analog Scale Score for Glass with 9	6	4	4	4	5	6	4	4	2	2	4	3	0	2	4	2	4	0	1	1	2	2	3	4	0	2
Visual Analog Scale Score for Glass with 10	8	4	4	4	5	7	4	4	2	3	4	3	0	2	4	2	4	0	1	1	2	2	3	4	0	2

Case code	Group1-Shunti	age	gender	Irritation on Tongue (Tudativacha) @10 %	Irritation on Tongue (Tudativacha) @ 20% .	Irritation on Tongue (Tudativacha) @ 30.	Irritation on Tongue (Tudativacha) @ 40%	Irritation on Tongue (Tudativacha) @ 50%	Irritation on Tongue (Tudativacha) @60 %	Irritation on Tongue (Tudativacha) @ 70%	Irritation on Tongue (Tudativacha) @ 80%	Irritation on Tongue (Tudativacha) @ 90% .	Irritation on Tongue (Tudativacha) @100 %	Pricking sensation (Chimchimayana) (@ 10%	Pricking sensation (Chimchimayana) (@ 20%	Pricking sensation (Chimchimayana) (@ 230%	Pricking sensation (Chimchimayana) (@ 40%	Pricking sensation (Chimchimayana) (@ 50%	Pricking sensation (Chimchimayana) (@ 60%	Pricking sensation (Chimchimayana) (@ 70%	Pricking sensation (Chimchimayana) (@ 80%	Pricking sensation (Chimchimayana) (@ 90%	Pricking /sensation (Chimchimayana) (@ 100%	Burning sensation in Mouth /Chest (Daha) 10(@ % Conc	Burning sensation in Mouth /Chest (Daha) 20(@ % Conc	Burning sensation in Mouth /Chest (Daha) 30(@ % Conc	Burning sensation in Mouth /Chest (Daha) 40(@ % Conc	Burning sensation in Mouth /Chest (Daha) 50(@ % Conc	Burning sensation in Mouth /Chest (Daha) 60(@ % Conc	Burning sensation in Mouth /Chest (Daha) 70 (@ % Conc	Burning sensation in Mouth /Chest (Daha) 80(@ % Conc	Burning sensation in Mouth /Chest (Daha) 90(@ % Conc	Burning sensation in Mouth /Chest (Daha) 100(@ % Conc	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@10 %	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 20%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 30%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 40%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 50%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 60%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 70%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 80%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 90%	Secretions through mouth ,nose ad Eye (Chakshurvirechayati)(@ 100%	Burning sensation in chest and abdomen (Vidahati deham)(@ 10%	Burning sensation in chest and abdomen (Vidahati deham)(@ 20%
1	2	19	1	0	0	1	2	3	3	3	2	3	3	0	0	0	0	0	1	0	0	2	2	2	0	0	1	0	2	0	2	2	2	0	0	0	0	0	0	0	0	0
2	2	18	2	1	1	1	1	1	2	2	2	2	2	0	0	0	0	0	1	0	0	1	1	1	0	0	1	0	1	1	2	2	2	2	2	0	0	0	0	0	1	0	0
3	2	18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	2	18	2	0	0	0	1	0	1	1	0	2	1	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
5	2	19	2	0	1	1	1	1	2	1	2	2	2	0	0	0	0	1	1	1	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	2	18	1	0	0	0	1	2	2	2	2	2	3	0	0	0	0	0	2	2	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	2	19	1	0	0	0	0	1	2	2	3	3	3	0	1	2	2	2	3	3	2	2	3	0	0	0	1	1	1	2	0	3	2	0	0	0	0	0	0	0	0	0	0
8	2	18	1	0	0	0	0	0	0	0	2	2	2	0	0	0	0	0	0	0	1	1	1	0	1	1	1	1	2	2	2	3	3	3	0	0	0	0	0	0	0	0	0
9	2	19	2	1	1	1	2	2	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	2	19	1	0	0	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
11	2	18	2	0	0	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
12	2	19	1	0	0	1	0	0	0	1	1	0	1	0	0	0	0	1	0	0	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
13	2	18	1	0	0	0	2	2	2	1	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	2	19	1	0	0	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
15	2	18	1	0	0	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	2	18	1	0	0	1	2	2	3	2	2	3	3	0	0	1	2	2	3	2	2	3	3	0	0	0	0	0	0	2	1	1	2	0	0	0	0	0	0	0	0	0	0
17	2	18	1	0	0	1	1	2	3	3	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	2	0	0	0	0	0	0	0	0	0
18	2	20	1	0	2	3	0	3	3	3	3	3	2	1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0	0	0	0	0	0	1	1	0	0
19	2	18	1	0	0	0	0	2	3	3	3	3	3	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2	0	0	0	3	3	3	0	0	0	0	0	0	0	1	0	0
20	2	19	1	0	1	2	0	1	2	2	2	1	1	0	0	0	1	0	0	0	1	1	0	0	0	0	0	1	0	2	1	1	2	0	0	0	0	0	0	0	0	0	0
21	2	18	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	1	3	3	2	3	0	0	0	0	0	0	0	0	0
22	2	18	1	0	0	1	1	0	1	2	2	2	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	2	0	0	0	0	0	0	0	0	0
23	2	19	1	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
24	2	18	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	2	18	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	2	18	1	0	0	0	0	1	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
27	2	18	1	0	1	1	1	0	1	1	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0
28	2	19	1	1	1	1	0	0	0	1	2	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	0	0	0	0	0	0	0	0	0
29	2	18	2	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0
30	2	20	1	0	1	1	1	1	1	1	2	2	2	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
31	2	18	1	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
32	2	20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	2	18	1	0	1	1	1	2	2	3	3	2	3	0	0	1	1	2	2	2	2	2	2	0	0	1	1	2	2	2	2	2	3	0	0	0	0	0	0	0	0	0	0
34	2	18	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
35	2	21	1	1	2	2	2	2	2	3	3	3	3	1	1	2	2	2	2	2	3	3	3	1	1	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	3	0	0
36	2	20	1	0	0	0	0	0	0	0	2	3	3	0	0	0	0	0	0	0	3	3	3	3	0	0	1	2	3	3	3	3	3	3	0	0	0	0	0	0	1	1	2	3	0	0
37	2	20	1	0	0	0	0	0	0	1	2	2	3	0	0	0	0	0	0	2	2	2	3	0	0	1	2	3	3	3	3	3	3	3	0	0	0	0	0	0	0	0	0

Case code	Group1-Shunti	age	gender	Irritation on Tongue (Tudativacha) @10 %	Irritation on Tongue (Tudativacha) @ 20% .	Irritation on Tongue (Tudativacha) @ 30.	Irritation on Tongue (Tudativacha) @ 40%	Irritation on Tongue (Tudativacha) @ 50%	Irritation on Tongue (Tudativacha) @60 %	Irritation on Tongue (Tudativacha) @ 70%	Irritation on Tongue (Tudativacha) @ 80%	Irritation on Tongue (Tudativacha) @ 90% .	Irritation on Tongue (Tudativacha) @100 %	Pricking sensation (Chimchimayana) (@ 10%	Pricking sensation (Chimchimayana) (@ 20%	Pricking sensation (Chimchimayana) (@ 230%	Pricking sensation (Chimchimayana) (@ 40%	Pricking sensation (Chimchimayana) (@ 50%	Pricking sensation (Chimchimayana) (@ 60%	Pricking sensation (Chimchimayana) (@ 70%	Pricking sensation (Chimchimayana) (@ 80%	Pricking sensation (Chimchimayana) (@ 90%	Pricking /sensation (Chimchimayana) (@ 100%	Burning sensation in Mouth /Chest (Daha) 10(@ % Conc	Burning sensation in Mouth /Chest (Daha) 20(@ % Conc	Burning sensation in Mouth /Chest (Daha) 30(@ % Conc	Burning sensation in Mouth /Chest (Daha) 40(@ % Conc	Burning sensation in Mouth /Chest (Daha) 50(@ % Conc	Burning sensation in Mouth /Chest (Daha) 60(@ % Conc	Burning sensation in Mouth /Chest (Daha) 70 (@ % Conc	Burning sensation in Mouth /Chest (Daha) 80(@ % Conc	Burning sensation in Mouth /Chest (Daha) 90(@ % Conc	Burning sensation in Mouth /Chest (Daha) 100(@ % Conc	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@10 %	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 20%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 30%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 40%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 50%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 60%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 70%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 80%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 90%	Secretions through mouth ,nose ad Eye (Chakshurvirechayati)(@ 100%	Burning sensation in chest and abdomen (Vidahati deham)(@ 10%	Burning sensation in chest and abdomen (Vidahati deham)(@ 20%
38	2	25	1	0	1	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
39	2	21	1	0	0	1	1	1	2	2	3	3	3	0	0	1	1	1	2	2	3	3	3	0	1	1	2	2	2	2	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0
40	2	20	1	0	0	0	1	1	1	2	2	3	3	0	0	0	1	1	1	2	2	2	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
41	2	18	1	0	0	0	0	0	0	1	2	2	3	0	0	1	1	1	2	2	2	2	2	0	0	0	0	1	1	1	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
42	2	18	1	0	0	0	0	0	0	1	2	2	3	0	0	0	0	0	0	2	2	2	3	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3	3	3	3	3	0	0
43	2	18	1	0	0	0	0	0	0	1	2	2	3	0	0	0	0	0	0	2	2	2	3	0	0	1	2	3	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0
44	2	21	1	0	0	0	0	0	0	1	2	2	3	0	0	1	1	1	2	2	2	2	2	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
45	2	19	1	0	0	0	0	1	1	1	2	2	2	0	0	0	0	0	0	2	2	2	3	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	1	2	2	0	0
46	2	19	2	0	0	0	1	1	1	1	2	2	3	0	0	0	0	1	2	2	2	2	3	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	1	2	2	2	0	0
47	2	18	2	0	0	0	0	0	1	2	2	2	2	0	0	0	0	0	1	1	2	2	2	0	0	0	0	1	1	2	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0
48	2	20	2	0	0	0	0	0	1	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	2	18	2	0	0	0	1	1	1	2	2	2	2	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	2	19	2	1	1	1	1	1	1	1	2	2	2	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	2	20	1	1	1	1	2	2	2	2	2	2	3	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
52	2	21	1	0	1	1	1	1	1	2	2	2	3	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	2	21	1	0	1	1	2	2	3	3	3	3	3	0	1	1	2	2	2	2	2	2	3	0	0	0	1	2	2	2	2	2	2	0	0	0	0	1	1	1	1	2	2	0	0
54	2	20	1	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
55	2	21	2	0	0	1	1	1	2	2	2	2	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	2	19	2	0	0	0	0	0	1	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0
57	2	22	1	0	0	1	1	1	2	2	2	2	3	0	0	1	1	2	2	2	2	2	3	0	0	0	1	1	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
58	2	21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0
59	2	20	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
60	2	25	2	1	1	2	2	2	2	2	3	3	3	0	1	1	2	2	2	2	3	3	3	0	1	1	2	2	2	2	2	3	3	0	0	1	2	2	2	2	3	3	3	0	0
61	2	25	1	0	1	1	2	2	2	2	2	3	3	0	0	0	0	0	0	1	1	1	2	0	0	0	0	0	0	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0
62	2	20	2	1	1	2	2	2	2	3	3	3	3	0	0	1	2	2	2	2	2	3	3	0	0	1	1	1	2	2	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0
63	2	20	1	0	0	0	0	0	1	1	1	1	2	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0
64	2	25	1	1	1	2	2	2	2	2	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3	0	0	0	0	0	0	0	0	0	0	0	0
65	2	22	2	0	0	0	0	1	1	2	2	3	3	0	0	0	0	1	2	2	2	2	2	0	0	0	0	1	1	1	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
66	2	22	2	1	1	1	1	2	2	0	0	2	3	0	1	1	1	2	2	2	2	2	3	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	2	25	2	1	1	2	3	3	0	0	0	0	0	0	0	0	0	1	2	2	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	2	19	2	0	0	1	1	1	1	1	2	3	3	0	0	0	0	1	1	0	2	3	3	0	0	0	1	1	1	2	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0
69	2	25	1	0	0	0	1	1	0	1	1	1	2	0	1	0	1	0	1	0	0	1	2	0	1	2	1	1	1	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0
70	2	19	1	0	1	1	1	1	1	2	2	2	3	0	0	1	2	3	3	3	3	3	3	0	0	0	0	1	2	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0
71	2	25	1	0	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
72	2	18	1	0	0	0	0	1	2	1	2	1	2	0	0	0	0	1	2	2	2	1	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0
73	2	18	1	0	0	0	0	1	1	1	2	2	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
74	2	21	1	0	0	0	1	1	1	2	2	2	2	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0

Case code	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Group1-Shunti	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
age	21	19	19	21	18	18	18	25	25	25	20	20	20	21	22	19	19	25	19	25	19	19	19	19	19	19
gender	2	1	1	1	1	1	2	1	2	2	1	1	1	1	1	2	2	1	2	1	2	1	2	1	1	1
Irritation on Tongue (Tudativacha) @10 %	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	1	1	0	1	0	0	0	0	0	0
Irritation on Tongue (Tudativacha) @ 20% .	0	0	0	1	0	0	0	1	1	1	0	0	1	1	0	0	1	1	0	1	0	0	0	0	0	0
Irritation on Tongue (Tudativacha) @ 30.	0	0	1	1	0	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1
Irritation on Tongue (Tudativacha) @ 40%	0	0	2	2	0	1	1	2	2	1	1	1	1	1	1	1	2	2	1	1	0	1	1	0	0	1
Irritation on Tongue (Tudativacha) @ 50%	0	0	2	2	0	1	2	2	2	1	1	1	1	1	1	1	2	2	1	1	0	1	2	0	0	1
Irritation on Tongue (Tudativacha) @60 %	0	0	2	2	0	2	2	2	2	1	1	1	2	2	1	1	2	2	1	2	0	2	2	0	0	1
Irritation on Tongue (Tudativacha) @ 70%	0	0	2	2	0	2	2	2	2	1	1	1	2	2	2	2	2	2	1	2	1	2	2	0	1	2
Irritation on Tongue (Tudativacha) @ 80%	0	0	2	2	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	0	2	2
Irritation on Tongue (Tudativacha) @ 90% .	0	0	2	3	0	2	3	3	3	2	2	2	3	2	2	3	2	2	2	2	2	2	2	0	2	2
Irritation on Tongue (Tudativacha) @100 %	0	0	2	3	1	3	3	3	3	2	2	2	3	2	2	3	2	2	2	2	2	2	2	0	3	3
Pricking sensation (Chimchimayana) (@ 10%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pricking sensation (Chimchimayana) (@ 20%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pricking sensation (Chimchimayana) (@ 230%	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pricking sensation (Chimchimayana) (@ 40%	0	0	0	0	0	1	2	2	2	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	0	1
Pricking sensation (Chimchimayana) (@ 50%	0	0	0	0	0	1	2	2	2	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	0	1
Pricking sensation (Chimchimayana) (@ 60%	0	0	0	0	0	2	2	2	2	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	0	1
Pricking sensation (Chimchimayana) (@ 70%	0	0	0	1	0	2	2	2	2	1	1	1	2	2	1	1	2	2	1	2	1	2	2	1	1	2
Pricking sensation (Chimchimayana) (@ 80%	0	0	1	1	0	2	2	2	2	1	1	1	2	2	1	1	2	2	1	2	1	2	2	1	1	2
Pricking sensation (Chimchimayana) (@ 90%	0	1	1	1	0	2	2	2	2	1	1	1	2	2	2	2	2	2	1	2	1	2	2	1	1	2
Pricking /sensation (Chimchimayana) (@ 100%	0	2	2	2	0	3	3	3	3	2	3	2	3	2	3	3	2	2	2	2	2	2	2	1	2	2
Burning sensation in Mouth /Chest (Daha) 10(@ % Conc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burning sensation in Mouth /Chest (Daha) 20(@ % Conc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Burning sensation in Mouth /Chest (Daha) 30(@ % Conc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Burning sensation in Mouth /Chest (Daha) 40(@ % Conc	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0
Burning sensation in Mouth /Chest (Daha) 50(@ % Conc	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2	0	0	0
Burning sensation in Mouth /Chest (Daha) 60(@ % Conc	0	0	0	0	0	2	2	2	1	0	0	0	1	1	1	1	0	0	0	0	0	1	2	0	0	0
Burning sensation in Mouth /Chest (Daha) 70 (@ % Conc	0	0	0	1	0	2	2	2	1	0	0	0	1	1	1	1	0	0	0	0	0	2	2	0	0	0
Burning sensation in Mouth /Chest (Daha) 80(@ % Conc	0	0	0	1	0	2	2	2	1	0	0	0	1	1	1	2	0	0	0	0	0	2	2	0	0	1
Burning sensation in Mouth /Chest (Daha) 90(@ % Conc	0	0	0	2	0	2	2	2	2	1	1	1	1	1	0	2	0	0	0	0	0	2	2	0	0	1
Burning sensation in Mouth /Chest (Daha) 100(@ % Conc	0	0	0	2	1	2	2	3	2	1	1	2	1	1	1	2	0	0	0	0	0	2	2	0	0	1
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@10 %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 20%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 30%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 40%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 60%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 70%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 80%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 90%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Secretions through mouth ,nose ad Eye (Chakshurvirechayati)(@ 100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burning sensation in chest and abdomen (Vidahati deham)(@ 10%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burning sensation in chest and abdomen (Vidahati deham)(@ 20%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Case code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Burning sensation in chest and abdomen (Vidahati deham)(@ 30%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Burning sensation in chest and abdomen (Vidahati deham)(@ 40%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0
Burning sensation in chest and abdomen (Vidahati deham)(@ 50%	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0
Burning sensation in chest and abdomen (Vidahati deham)(@ 60%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	2	0	0
Burning sensation in chest and abdomen (Vidahati deham)(@ 70%	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	2	0	0
Burning sensation in chest and abdomen (Vidahati deham)(@ 80%	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	2	0	0	0	0	3	0	2	0	0
Burning sensation in chest and abdomen (Vidahati deham)(@ 90%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	2	1	1	0	0	3	0	2	0	0
Burning sensation in chest and abdomen (Vidahati deham)(@ 100%	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	2	1	1	0	0	3	0	2	0	0
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@10 %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 20%	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 30%	0	1	1	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 40%	0	2	2	0	1	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 50%	0	2	2	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@60 %	0	2	2	0	1	0	0	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 70%	0	2	2	0	1	0	0	0	0	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 80%	0	2	2	0	1	0	0	0	0	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 90%	0	2	2	0	1	0	0	1	0	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 100%	0	2	2	0	1	0	0	1	0	2	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Excessive salivation (Aasya Sravana)(@10 % Conc	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Excessive salivation (Aasya Sravana)(@20 % Conc	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Excessive salivation (Aasya Sravana)(@30 % Conc	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Excessive salivation (Aasya Sravana)(@40 % Conc	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Excessive salivation (Aasya Sravana)(@50 % Conc	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Excessive salivation (Aasya Sravana)(@60 % Conc	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Excessive salivation (Aasya Sravana)(@70 % Conc	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Excessive salivation (Aasya Sravana)(@80 % Conc	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Excessive salivation (Aasya Sravana)(@90 % Conc	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Excessive salivation (Aasya Sravana)(@100 % Conc	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taste of liquid glass no 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taste of liquid glass no 1	1	3	2	0	0	3	1	1	0	2	2	2	1	2	2	2	1	1	1	2	1	2	1	3	2	2	2	3	2	2	1	1	3	1	3	3	3
Taste of liquid glass no 2	1	3	3	1	0	3	2	2	1	2	2	2	2	2	3	3	2	1	1	2	2	3	2	3	2	2	2	3	2	2	2	1	3	2	3	2	3
Taste of liquid glass no 3	2	3	3	2	0	3	2	2	1	2	2	2	2	2	3	3	2	1	1	2	2	3	2	3	2	2	2	3	2	2	2	1	3	2	3	2	3
Taste of liquid glass no 4	2	3	3	2	0	3	2	2	1	2	2	2	2	2	3	3	2	1	1	2	2	3	2	3	2	2	2	3	2	2	2	1	3	2	3	2	3
Taste of liquid glass no 5	3	3	3	2	0	3	2	2	1	2	2	2	2	2	3	3	2	1	1	2	2	3	2	3	2	2	2	3	2	2	2	1	3	2	3	2	3
Taste of liquid glass no 6	3	3	3	2	0	3	2	2	1	2	2	2	2	2	3	3	2	1	1	2	2	3	2	3	2	2	2	3	2	2	2	1	3	2	3	2	3
Taste of liquid glass no 7	3	3	3	2	0	3	2	2	1	2	2	2	2	2	3	3	2	1	1	2	2	3	2	3	2	2	2	3	2	2	2	1	3	2	3	2	3
Taste of liquid glass no 8	3	3	3	2	0	3	2	2	1	2	2	2	2	2	3	3	2	1	1	2	2	3	2	3	2	2	2	3	2	2	2	1	3	2	3	2	3
Taste of liquid glass no 9	3	3	3	2	0	3	2	2	1	2	2	2	2	2	3	3	2	1	1	2	2	3	2	3	2	2	2	3	2	2	2	1	3	2	3	2	3
Taste of liquid glass no 10	3	3	3	2	0	3	2	2	1	2	2	2	2	2	3	3	2	1	1	2	2	3	2	3	2	2	2	3	2	2	2	1	3	2	3	2	3
a_veryfaint_taste_of1	0	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	0	0	0	4	0	0	0	0	1	0	2	1	0
a_veryfaint_taste_of2	4	4	0	0	0	5	0	6	4	0	0	0	0	4	0	0	0	6	1	0	0	0	0	4	0	0	0	4	0	0	0	0	1	0	0	0	0
a_veryfaint_taste_of3	4	4	0	0	0	4	0	6	4	0	0	0	0	4	0	0	0	6	1	0	0	0	0	4	0	0	0	4	0	0	0	0	1	0	0	0	0

74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	Case code
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 30%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 40%
0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	1	2	1	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 50%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2	2	1	2	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 60%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	0	0	1	0	0	0	0	0	0	0	0	2	2	0	2	2	2	2	2	Burning sensation in chest and abdomen (Vidahati deham)(@ 70%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	2	0	0	1	0	0	0	0	0	0	0	0	2	2	0	2	2	3	2	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 80%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	2	0	0	1	0	0	0	0	0	0	0	0	3	2	0	2	3	3	2	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 90%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	3	2	0	0	1	0	0	0	0	0	0	0	0	3	2	0	3	3	3	3	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 100%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@10 %
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 20%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 30%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 40%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 50%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@60 %
0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 70%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	2	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	3	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 80%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	1	2	0	0	0	0	0	1	1	1	1	2	0	2	0	0	2	0	0	0	3	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 90%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	1	2	0	0	0	0	0	1	1	1	1	2	0	2	0	0	3	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 100%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@10 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@20 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@30 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@40 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	Excessive salivation (Aasya Sravana)(@50 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	2	2	2	Excessive salivation (Aasya Sravana)(@60 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	2	2	0	Excessive salivation (Aasya Sravana)(@70 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	2	2	0	Excessive salivation (Aasya Sravana)(@80 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	2	2	0	Excessive salivation (Aasya Sravana)(@90 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	2	2	0	Excessive salivation (Aasya Sravana)(@100 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Taste of liquid glass no 0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	Taste of liquid glass no 1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	Taste of liquid glass no 2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	Taste of liquid glass no 3
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	Taste of liquid glass no 4
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	Taste of liquid glass no 5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	Taste of liquid glass no 6
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	Taste of liquid glass no 7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	Taste of liquid glass no 8
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	Taste of liquid glass no 9
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	Taste of liquid glass no 10
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	a_veryfaint_taste_of1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	6	0	0	1	0	0	0	1	a_veryfaint_taste_of2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	6	0	0	1	0	0	0	1	a_veryfaint_taste_of3

100	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	Case code
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 30%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 40%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 50%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 60%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 70%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 80%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 90%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 100%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@10 %
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 20%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 30%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 40%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 50%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@60 %
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 70%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 80%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 90%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 100%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@10 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@20 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@30 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@40 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@50 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@60 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@70 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@80 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@90 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@100 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Taste of liquid glass no 0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Taste of liquid glass no 1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Taste of liquid glass no 2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Taste of liquid glass no 3
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Taste of liquid glass no 4
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Taste of liquid glass no 5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Taste of liquid glass no 6
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Taste of liquid glass no 7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Taste of liquid glass no 8
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Taste of liquid glass no 9
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Taste of liquid glass no 10
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	a_veryfaint_taste_of1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	a_veryfaint_taste_of2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	a_veryfaint_taste_of3

Case code	a_veryfaint_taste_of4	a_veryfaint_taste_of5	a_veryfaint_taste_of6	a_veryfaint_taste_of7	a_veryfaint_taste_of8	a_veryfaint_taste_of9	a_veryfaint_taste_of10	a_faint_taste_of1	a_faint_taste_of2	a_faint_taste_of3	a_faint_taste_of4	a_faint_taste_of5	a_faint_taste_of6	a_faint_taste_of7	a_faint_taste_of8	a_faint_taste_of9	a_faint_taste_of10	a_weak_taste_of1	a_weak_taste_of2	a_weak_taste_of3	a_weak_taste_of4	a_weak_taste_of5	a_weak_taste_of6	a_weak_taste_of7	a_weak_taste_of8	a_weak_taste_of9	a_weak_taste_of10	a_clear_taste_of1	a_clear_taste_of2	a_clear_taste_of3	a_clear_taste_of4	a_clear_taste_of5	a_clear_taste_of6	a_clear_taste_of7	a_clear_taste_of8	a_clear_taste_of9	a_clear_taste_of10	Visual Analog Scale Score for Glass with 1	Visual Analog Scale Score for Glass with 2	Visual Analog Scale Score for Glass with 3	Visual Analog Scale Score for Glass with 4	Visual Analog Scale Score for Glass with 5	Visual Analog Scale Score for Glass with 6	Visual Analog Scale Score for Glass with 7	Visual Analog Scale Score for Glass with 8	Visual Analog Scale Score for Glass with 9	Visual Analog Scale Score for Glass with 10
1	4	4	4	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	1	1	1	2	2	4	4	4	4	4
2	4	4	4	4	4	4	5	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	0	0	1	2	3	4	5	5	3	4
3	0	0	0	1	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	4	4	4	4	0	0	4	0	0	0	0	0	0	0	4	4	0	0	0	0	1	1	1	2	2	2	2
4	4	0	0	0	0	0	0	0	0	0	0	4	6	5	5	4	6	0	0	0	0	0	4	4	6	5	5	0	0	0	0	0	0	0	4	6	4	0	1	1	2	3	3	4	4	3	4
5	0	0	0	0	0	0	0	0	0	6	6	5	4	4	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	3	3	3
6	4	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	3
7	0	0	0	4	4	4	4	0	0	0	4	4	4	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	3	4	5	6	8	8
8	0	0	0	0	0	0	0	0	0	5	4	4	4	4	0	5	5	0	0	0	0	0	0	0	4	4	6	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	2	3	5
9	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	2
10	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	2	3	4	6	6	7
11	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	1	3	2	3	4	6	6	7
12	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	0	0	1	3	2	4	5	6	7	8
13	0	0	0	0	0	0	0	0	0	4	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	0	0	1	2	3	3	4	5	6	9
14	0	0	0	4	0	4	4	0	0	0	4	4	4	0	0	0	0	1	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	2	3	3	3	4	4	5	5	5
15	5	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	5	0	4	0	0	0	0	0	0	0	4	6	6	6	6	6	0	1	1	1	2	2	2	3	3	4
16	0	0	0	0	0	0	0	0	0	6	6	0	0	5	5	0	0	1	0	0	0	5	5	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	2	3	4	4	5	4	5	4	4
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	5	5	5	5	5	0	0	0	0	0	4	4	4	4	4	0	1	2	2	4	5	6	7	7	9
18	0	2	2	2	0	2	2	0	2	0	0	0	0	0	0	0	0	2	0	6	0	6	6	0	0	0	0	0	0	0	4	0	4	4	0	0	0	0	2	3	0	5	6	7	0	9	10
19	0	0	0	0	0	0	5	1	1	6	0	5	5	0	5	4	5	0	0	1	0	0	6	6	6	6	4	0	0	0	4	0	0	5	5	5	5	0	0	2	4	2	6	6	8	8	8
20	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	4	0	0	0	4	4	4	4	4	4	0	0	0	2	2	2	4	4	4	4	2
21	4	0	5	4	4	5	4	0	1	1	1	4	4	0	0	5	0	5	0	5	5	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	4	0	0	0	0	2	2	4	4	4	4
22	0	4	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	6	4	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	6	4	0	0	0	0	1	2	2	2	2	4
23	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	0	0	0	0	0	1	7	1	2	3
24	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	4	4
25	4	4	4	4	0	0	0	0	0	0	0	0	0	0	4	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	5	0	0	5	5	5	0	0	0	4	4	4	4	4	4	4	0	0	1	2	3	3	0	1	1	1
27	6	5	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	6	0	0	0	0	0	0	0	0	0	4	4	0	0	0	1	1	1	1	2	3	3
28	0	0	0	0	0	0	0	0	0	0	5	4	0	0	0	5	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	4	4	4	4	4	0	0	0	1	2	3	4	5	5	5
29	4	4	0	0	0	0	0	0	0	0	0	0	4	0	5	0	0	0	0	0	0	0	0	4	4	5	0	0	0	0	0	0	0	0	0	4	4	0	0	0	1	1	2	2	3	4	5
30	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	0	0	1	1	2	3	4	4	4	5
31	0	0	0	0	0	0	0	0	0	0	4	0	5	0	0	0	0	0	0	0	0	5	5	5	0	0	0	0	0	0	0	0	0	0	4	4	4	0	1	1	2	2	3	3	4	5	5
32	4	0	0	0	0	0	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	0	5	4	0	0	0	0	0	0	0	0	0	0	6	6	0	0	0	0	2	2	2	3	3	3	3
33	4	0	5	0	0	0	0	0	0	6	0	4	0	0	0	5	0	0	0	0	0	0	0	4	5	0	5	0	0	0	0	0	0	0	0	0	0	1	2	3	3	4	5	6	7	9	10
34	5	6	1	4	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	3	4	8	4	10	8	6	10
35	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	0	1	3	4	4	4	5	6	7	8
36	5	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	3	4	4	5	6	7	8	8	10	10
37	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	3	2	4	4	5	6	6	7	7	8

Case code	a_veryfaint_taste_of4	a_veryfaint_taste_of5	a_veryfaint_taste_of6	a_veryfaint_taste_of7	a_veryfaint_taste_of8	a_veryfaint_taste_of9	a_veryfaint_taste_of10	a_faint_taste_of1	a_faint_taste_of2	a_faint_taste_of3	a_faint_taste_of4	a_faint_taste_of5	a_faint_taste_of6	a_faint_taste_of7	a_faint_taste_of8	a_faint_taste_of9	a_faint_taste_of10	a_weak_taste_of1	a_weak_taste_of2	a_weak_taste_of3	a_weak_taste_of4	a_weak_taste_of5	a_weak_taste_of6	a_weak_taste_of7	a_weak_taste_of8	a_weak_taste_of9	a_weak_taste_of10	a_clear_taste_of1	a_clear_taste_of2	a_clear_taste_of3	a_clear_taste_of4	a_clear_taste_of5	a_clear_taste_of6	a_clear_taste_of7	a_clear_taste_of8	a_clear_taste_of9	a_clear_taste_of10	Visual Analog Scale Score for Glass with 1	Visual Analog Scale Score for Glass with 2	Visual Analog Scale Score for Glass with 3	Visual Analog Scale Score for Glass with 4	Visual Analog Scale Score for Glass with 5	Visual Analog Scale Score for Glass with 6	Visual Analog Scale Score for Glass with 7	Visual Analog Scale Score for Glass with 8	Visual Analog Scale Score for Glass with 9	Visual Analog Scale Score for Glass with 10
38	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	4	4	4	6	6	6
39	1	0	0	0	0	0	0	5	5	1	0	6	4	4	4	0	4	0	4	4	4	4	6	0	0	0	0	0	0	0	5	5	5	5	6	5	5	5	0	1	3	4	6	7	8	10	10	10
40	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0	1	3	4	6	7	8	10	10	10
41	1	0	0	0	0	0	0	0	0	1	4	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	1	3	4	6	7	8	10
42	0	0	0	0	0	0	0	0	4	0	6	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	3	2	4	4	5	6	6	7	7	8
43	0	0	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	3	2	4	4	5	6	6	7	7	8
44	1	0	0	0	0	0	0	0	0	1	5	5	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	1	3	4	6	7	8	10
45	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	3	2	4	4	5	6	7	8	10	10
46	0	0	0	0	0	0	0	0	0	4	4	0	6	6	6	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	2	2	4	4	5	6	6	8	8	9
47	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	5	5	5	0	0	0	0	0	0	0	4	4	4	4	4	2	3	3	4	6	6	7	7	8	8
48	4	6	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	1	1	1	2	2	2	4	5	5	6
49	6	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0	1	1	2	3	4	4	6	6	6
50	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	2	2	3	3	3	3	4	5	5	6
51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	6	6	0	0	0	0	0	0	0	0	0	4	4	4	4	4	2	2	2	3	3	4	4	4	5	7
52	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	2	2	3	3	4	5	5	6	7	7
53	4	0	0	0	0	0	0	0	4	4	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	4	4	4	4	4	4	4	2	4	4	4	4	8	8	8	8	8
54	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	4	4	4	4	4
55	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	0	1	1	2	3	4	6	6	8	8
56	6	0	0	0	0	0	0	0	0	4	0	0	6	0	0	0	0	0	0	0	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	4	0	1	1	1	2	2	3	3	4	5
57	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	6	6	6	6	6	6	0	1	2	2	4	6	6	7	8	8
58	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	0	4	4	4	6	6	6	6	6	6
59	0	5	0	0	0	0	0	0	0	4	4	4	4	5	5	5	5	0	0	0	5	5	0	5	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	3	3	3	3	4	4
60	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	0	1	2	3	4	5	6	7	9	10
61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	2	2	2	4	4	4	4	4	6	6
62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	1	2	4	5	6	6	7	8	9	9
63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	0	0	0	0	1	2	2	3	4	5
64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	1	1	1	2	2	4	4
65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	6	0	0	0	0	0	0	4	4	4	4	4	4	1	2	2	4	4	5	6	7	7	7
66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	5	0	0	0	0	0	0	0	4	4	4	4	4	4	0	1	1	1	3	4	5	5	5	6
67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	0	2	2	3	4	6	7	7	9	9
68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4	5	6	8	8	8
69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5	4	4	5	0	0	5	5	6	0	5	6	6	6	1	2	4	4	6	6	7	8	8	8	8
70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	2	2	3	4	4	5	6	7	7	8	8
71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	0	1	2	4	6	6	6	6	8	8
72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0	1	2	3	4	5	6	8	8	9
73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0	1	2	2	4	5	5	7	8	8
74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	1	2	3	4	6	6	8	8

Case code	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
a_veryfaint_taste_of4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_veryfaint_taste_of5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_veryfaint_taste_of6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_veryfaint_taste_of7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_veryfaint_taste_of8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_veryfaint_taste_of9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_veryfaint_taste_of10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_faint_taste_of10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_weak_taste_of1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_weak_taste_of2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_weak_taste_of3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_weak_taste_of4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_weak_taste_of5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_weak_taste_of6	4	4	4	0	4	0	4	0	0	4	4	4	0	4	0	4	4	0	4	4	4	4	4	4	4	6
a_weak_taste_of7	4	4	4	0	0	0	4	4	4	0	4	4	0	6	0	6	6	0	4	6	0	4	4	6	6	6
a_weak_taste_of8	4	4	4	0	0	0	0	4	4	0	0	4	0	4	0	6	4	0	4	4	0	4	4	0	0	6
a_weak_taste_of9	4	4	4	0	4	0	0	0	4	4	0	6	0	4	0	4	4	0	4	4	0	4	4	0	0	0
a_weak_taste_of10	4	4	4	0	4	0	0	0	4	4	0	0	0	4	0	4	4	0	4	4	0	4	4	0	0	0
a_clear_taste_of1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_clear_taste_of2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_clear_taste_of3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_clear_taste_of4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_clear_taste_of5	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
a_clear_taste_of6	0	0	4	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
a_clear_taste_of7	0	0	4	4	4	4	4	4	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
a_clear_taste_of8	4	4	4	4	4	4	4	4	0	4	4	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4
a_clear_taste_of9	4	4	4	4	4	4	4	4	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
a_clear_taste_of10	4	4	4	4	4	4	4	4	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Visual Analog Scale Score for Glass with 1	1	0	1	2	0	1	2	0	0	1	2	2	0	2	0	1	0	0	1	1	1	0	1	1	3	0
Visual Analog Scale Score for Glass with 2	1	2	1	2	0	1	4	1	0	2	2	2	0	2	1	2	1	1	2	2	2	1	1	1	3	1
Visual Analog Scale Score for Glass with 3	2	3	1	2	2	2	4	2	1	2	2	2	1	2	2	2	2	1	2	2	4	2	2	2	4	3
Visual Analog Scale Score for Glass with 4	2	4	2	4	2	2	4	2	1	2	4	4	1	2	2	4	4	2	2	4	4	2	2	2	4	4
Visual Analog Scale Score for Glass with 5	4	4	4	4	4	2	4	2	1	4	4	4	2	2	3	4	4	2	2	4	5	2	2	3	4	5
Visual Analog Scale Score for Glass with 6	4	5	4	5	3	3	4	3	2	4	5	5	2	3	4	5	5	3	4	5	6	3	3	3	5	6
Visual Analog Scale Score for Glass with 7	5	6	5	6	4	4	5	4	3	5	6	6	3	4	5	6	6	4	5	6	6	4	4	4	6	7
Visual Analog Scale Score for Glass with 8	6	6	6	7	5	5	6	5	4	6	7	7	4	5	6	7	7	5	6	7	7	5	5	5	7	8
Visual Analog Scale Score for Glass with 9	6	6	7	7	6	6	7	6	4	7	8	8	5	6	7	8	8	6	7	8	8	6	6	6	8	8
Visual Analog Scale Score for Glass with 10	7	8	7	8	6	6	8	6	4	8	8	8	6	6	7	8	8	7	8	8	8	7	7	7	8	8

Case code	Group1-Capsicum	age	gender	Irritation on Tongue (Tudativacha) @10 %	Irritation on Tongue (Tudativacha) @ 20% .	Irritation on Tongue (Tudativacha) @ 30.	Irritation on Tongue (Tudativacha) @ 40%	Irritation on Tongue (Tudativacha) @ 50%	Irritation on Tongue (Tudativacha) @60 %	Irritation on Tongue (Tudativacha) @ 70%	Irritation on Tongue (Tudativacha) @ 80%	Irritation on Tongue (Tudativacha) @ 90% .	Irritation on Tongue (Tudativacha) @100 %	Pricking sensation (Chimchimayana) (@ 10%	Pricking sensation (Chimchimayana) (@ 20%	Pricking sensation (Chimchimayana) (@ 230%	Pricking sensation (Chimchimayana) (@ 40%	Pricking sensation (Chimchimayana) (@ 50%	Pricking sensation (Chimchimayana) (@ 60%	Pricking sensation (Chimchimayana) (@ 70%	Pricking sensation (Chimchimayana) (@ 80%	Pricking sensation (Chimchimayana) (@ 90%	Pricking /sensation (Chimchimayana) (@ 100%	Burning sensation in Mouth /Chest (Daha) 10(@ % Conc	Burning sensation in Mouth /Chest (Daha) 20(@ % Conc	Burning sensation in Mouth /Chest (Daha) 30(@ % Conc	Burning sensation in Mouth /Chest (Daha) 40(@ % Conc	Burning sensation in Mouth /Chest (Daha) 50(@ % Conc	Burning sensation in Mouth /Chest (Daha) 60(@ % Conc	Burning sensation in Mouth /Chest (Daha) 70 (@ % Conc	Burning sensation in Mouth /Chest (Daha) 80(@ % Conc	Burning sensation in Mouth /Chest (Daha) 90(@ % Conc	Burning sensation in Mouth /Chest (Daha) 100(@ % Conc	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@10 %	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 20%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 30%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 40%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 50%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 60%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 70%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 80%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 90%	Secretions through mouth ,nose ad Eye (Chakshurvirechayati)(@ 100%	Burning sensation in chest and abdomen (Vidahati deham)(@ 10%	Burning sensation in chest and abdomen (Vidahati deham)(@ 20%
1	3	19	1	0	0	0	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
2	3	18	2	0	0	1	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
3	3	18	1	0	0	1	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
4	3	18	2	0	0	1	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
5	3	19	2	0	0	1	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
6	3	18	1	0	0	1	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
7	3	19	1	0	0	1	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
8	3	18	1	0	0	1	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
9	3	19	2	0	0	1	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
10	3	19	1	0	0	0	1	1	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
11	3	18	2	0	0	1	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
12	3	19	1	0	0	1	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
13	3	18	1	0	0	1	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
14	3	19	1	0	0	0	1	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
15	3	18	1	0	0	0	1	2	2	2	3	3	3	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
16	3	18	1	0	0	1	2	2	2	2	3	3	3	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
17	3	18	1	0	0	1	2	2	2	2	3	3	3	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
18	3	20	1	0	0	0	1	2	2	2	3	3	3	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
19	3	18	1	0	0	1	1	1	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
20	3	19	1	0	0	0	1	1	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
21	3	18	1	0	0	0	1	1	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
22	3	18	1	0	0	0	1	1	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
23	3	19	1	0	0	0	1	1	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
24	3	18	1	0	0	1	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
25	3	18	1	0	0	0	1	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
26	3	18	1	0	0	0	2	2	2	2	3	3	3	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
27	3	18	1	1	0	0	2	2	2	2	3	3	3	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
28	3	19	1	0	0	0	1	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
29	3	18	2	1	1	2	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
30	3	20	1	0	0	0	1	1	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
31	3	18	1	0	0	0	1	1	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
32	3	20	1	1	1	1	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
33	3	18	1	0	1	1	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
34	3	18	1	1	1	1	2	2	2	3	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
35	3	21	1	0	0	1	2	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
36	3	20	1	1	0	0	1	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0
37	3	20	1	1	0	0	1	2	2	2	2	2	2	1	0	0	0	2	0	0	0	0	0	0	2	2	2	2	2	3	3	3	3	0	0	0	0	0	0	0	0	0

Case code	Group1-Capsicum	age	gender	Irritation on Tongue (Tudativacha) @10 %	Irritation on Tongue (Tudativacha) @ 20% .	Irritation on Tongue (Tudativacha) @ 30.	Irritation on Tongue (Tudativacha) @ 40%	Irritation on Tongue (Tudativacha) @ 50%	Irritation on Tongue (Tudativacha) @60 %	Irritation on Tongue (Tudativacha) @ 70%	Irritation on Tongue (Tudativacha) @ 80%	Irritation on Tongue (Tudativacha) @ 90% .	Irritation on Tongue (Tudativacha) @100 %	Pricking sensation (Chimchimayana) (@ 10%	Pricking sensation (Chimchimayana) (@ 20%	Pricking sensation (Chimchimayana) (@ 230%	Pricking sensation (Chimchimayana) (@ 40%	Pricking sensation (Chimchimayana) (@ 50%	Pricking sensation (Chimchimayana) (@ 60%	Pricking sensation (Chimchimayana) (@ 70%	Pricking sensation (Chimchimayana) (@ 80%	Pricking sensation (Chimchimayana) (@ 90%	Pricking /sensation (Chimchimayana) (@ 100%	Burning sensation in Mouth /Chest (Daha) 10(@ % Conc	Burning sensation in Mouth /Chest (Daha) 20(@ % Conc	Burning sensation in Mouth /Chest (Daha) 30(@ % Conc	Burning sensation in Mouth /Chest (Daha) 40(@ % Conc	Burning sensation in Mouth /Chest (Daha) 50(@ % Conc	Burning sensation in Mouth /Chest (Daha) 60(@ % Conc	Burning sensation in Mouth /Chest (Daha) 70 (@ % Conc	Burning sensation in Mouth /Chest (Daha) 80(@ % Conc	Burning sensation in Mouth /Chest (Daha) 90(@ % Conc	Burning sensation in Mouth /Chest (Daha) 100(@ % Conc	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@10 %	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 20%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 30%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 40%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 50%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 60%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 70%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 80%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 90%	Secretions through mouth ,nose ad Eye (Chakshurvirechayati)(@ 100%	Burning sensation in chest and abdomen (Vidahati deham)(@ 10%	Burning sensation in chest and abdomen (Vidahati deham)(@ 20%
38	3	25	1	0	1	1	2	2	2	2	2	2	3	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	3	21	1	1	1	1	2	2	2	2	2	2	2	0	0	1	1	2	2	2	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	3	20	1	1	2	2	2	2	2	2	2	2	3	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	3	18	1	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	3	18	1	0	0	1	1	2	2	2	2	2	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	3	18	1	0	0	1	2	2	2	2	2	2	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	3	21	1	0	0	0	2	2	2	2	2	2	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	3	19	1	0	0	1	2	2	2	2	2	2	3	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	3	19	2	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	3	18	2	0	0	0	1	2	2	2	2	2	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	3	20	2	1	1	1	2	2	2	2	2	2	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	3	18	2	1	1	1	2	2	2	2	2	2	2	0	0	1	1	2	2	2	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	3	19	2	0	0	1	2	2	2	2	2	2	2	0	0	0	0	1	1	1	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	3	20	1	0	1	1	2	2	2	2	2	2	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	3	21	1	1	1	1	2	2	2	2	2	2	3	0	0	1	1	1	1	1	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	3	21	1	1	0	2	2	2	2	2	2	2	2	0	0	1	1	1	1	1	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54	3	20	1	1	1	2	2	2	2	2	2	2	3	1	1	2	2	2	2	2	3	3	1	1	1	1	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	3	21	2	2	2	2	2	2	2	2	2	2	2	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	3	19	2	1	1	2	2	2	2	2	2	2	3	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	3	22	1	2	2	2	2	3	3	3	3	3	3	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	3	21	1	0	0	0	0	0	0	1	1	1	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
59	3	20	2	0	0	0	0	0	1	1	2	2	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
60	3	25	2	1	1	2	2	2	3	3	3	3	3	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
61	3	25	1	0	1	1	2	2	2	2	2	2	3	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
62	3	20	2	1	1	2	2	2	2	2	2	2	3	0	0	1	1	2	2	2	3	3	1	1	1	1	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1
63	3	20	1	0	1	1	1	1	1	1	1	1	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	3	25	1	2	2	2	3	3	3	3	3	3	3	1	1	2	2	2	2	2	3	3	1	1	1	1	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	3	22	2	0	2	2	3	3	3	3	3	3	3	1	1	2	2	2	2	2	3	3	1	1	1	1	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	3	22	2	0	1	1	1	1	2	2	2	2	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	3	25	2	1	1	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	3	19	2	1	1	1	2	2	2	2	2	2	3	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	3	25	1	1	1	1	2	2	3	3	3	3	3	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70	3	19	1	2	2	2	3	3	3	3	3	3	3	0	0	1	1	2	2	2	3	3	1	1	1	1	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71	3	25	1	1	1	2	2	2	3	3	3	3	3	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72	3	18	1	1	1	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
73	3	18	1	1	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74	3	21	1	2	2	0	1	1	2	2	2	2	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Case code	Group1-Capsicum	age	gender	Irritation on Tongue (Tudativacha) @10 %	Irritation on Tongue (Tudativacha) @ 20% .	Irritation on Tongue (Tudativacha) @ 30.	Irritation on Tongue (Tudativacha) @ 40%	Irritation on Tongue (Tudativacha) @ 50%	Irritation on Tongue (Tudativacha) @60 %	Irritation on Tongue (Tudativacha) @ 70%	Irritation on Tongue (Tudativacha) @ 80%	Irritation on Tongue (Tudativacha) @ 90% .	Irritation on Tongue (Tudativacha) @100 %	Pricking sensation (Chimchimayana) (@ 10%	Pricking sensation (Chimchimayana) (@ 20%	Pricking sensation (Chimchimayana) (@ 230%	Pricking sensation (Chimchimayana) (@ 40%	Pricking sensation (Chimchimayana) (@ 50%	Pricking sensation (Chimchimayana) (@ 60%	Pricking sensation (Chimchimayana) (@ 70%	Pricking sensation (Chimchimayana) (@ 80%	Pricking sensation (Chimchimayana) (@ 90%	Pricking /sensation (Chimchimayana) (@ 100%	Burning sensation in Mouth /Chest (Daha) 10(@ % Conc	Burning sensation in Mouth /Chest (Daha) 20(@ % Conc	Burning sensation in Mouth /Chest (Daha) 30(@ % Conc	Burning sensation in Mouth /Chest (Daha) 40(@ % Conc	Burning sensation in Mouth /Chest (Daha) 50(@ % Conc	Burning sensation in Mouth /Chest (Daha) 60(@ % Conc	Burning sensation in Mouth /Chest (Daha) 70 (@ % Conc	Burning sensation in Mouth /Chest (Daha) 80(@ % Conc	Burning sensation in Mouth /Chest (Daha) 90(@ % Conc	Burning sensation in Mouth /Chest (Daha) 100(@ % Conc	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@10 %	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 20%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 30%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 40%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 50%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 60%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 70%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 80%	Secretions through mouth ,nose and Eye (Chakshurvirechayati)(@ 90%	Secretions through mouth ,nose ad Eye (Chakshurvirechayati)(@ 100%	Burning sensation in chest and abdomen (Vidahati deham)(@ 10%	Burning sensation in chest and abdomen (Vidahati deham)(@ 20%
75	3	21	2	0	0	1	2	2	2	2	2	2	2	0	0	0	0	1	1	1	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
76	3	19	1	0	0	1	2	2	1	2	2	2	2	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
77	3	19	1	1	1	1	2	2	3	3	2	2	2	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
78	3	21	1	1	1	2	2	2	2	2	2	2	2	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
79	3	18	1	1	1	2	2	2	2	3	2	2	2	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
80	3	18	1	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
81	3	18	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
82	3	25	1	1	1	2	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
83	3	25	2	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
84	3	25	2	1	1	2	2	2	1	1	1	2	2	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
85	3	20	1	1	1	1	1	2	1	1	2	2	2	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
86	3	20	1	1	1	1	1	2	2	2	2	2	2	0	1	1	1	1	1	1	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
87	3	20	1	1	1	2	2	2	2	3	3	3	3	0	1	1	1	1	1	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
88	3	21	1	0	1	1	1	2	2	3	3	3	3	0	1	1	1	1	1	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
89	3	22	1	1	1	2	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
90	3	19	2	1	1	1	1	1	1	2	2	2	2	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
91	3	19	2	1	1	1	1	1	2	3	3	3	3	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
92	3	25	1	1	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
93	3	19	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
94	3	25	1	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
95	3	19	2	1	1	2	2	2	1	2	2	2	2	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
96	3	19	1	1	1	2	2	2	2	2	2	2	2	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
97	3	19	2	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
98	3	19	1	1	1	2	2	2	1	2	2	2	2	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
99	3	19	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
100	3	19	1	1	1	1	2	2	1	2	2	2	2	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0

Case code	Burning sensation in chest and abdomen (Vidahati deham)(@ 30%	Burning sensation in chest and abdomen (Vidahati deham)(@ 40%	Burning sensation in chest and abdomen (Vidahati deham)(@ 50%	Burning sensation in chest and abdomen (Vidahati deham)(@ 60%	Burning sensation in chest and abdomen (Vidahati deham)(@ 70%	Burning sensation in chest and abdomen (Vidahati deham)(@ 80%	Burning sensation in chest and abdomen (Vidahati deham)(@ 90%	Burning sensation in chest and abdomen (Vidahati deham)(@ 100%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@10 %	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 20%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 30%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 40%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 50%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@60 %	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 70%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 80%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 90%	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 100%	Excessive salivation (Aasya Sravana)(@10 % Conc	Excessive salivation (Aasya Sravana)(@20 % Conc	Excessive salivation (Aasya Sravana)(@30 % Conc	Excessive salivation (Aasya Sravana)(@40 % Conc	Excessive salivation (Aasya Sravana)(@50 % Conc	Excessive salivation (Aasya Sravana)(@60 % Conc	Excessive salivation (Aasya Sravana)(@70 % Conc	Excessive salivation (Aasya Sravana)(@80 % Conc	Excessive salivation (Aasya Sravana)(@90 % Conc	Excessive salivation (Aasya Sravana)(@100 % Conc	Taste of liquid glass no 0	Taste of liquid glass no 1	Taste of liquid glass no 2	Taste of liquid glass no 3	Taste of liquid glass no 4	Taste of liquid glass no 5	Taste of liquid glass no 6	Taste of liquid glass no 7	Taste of liquid glass no 8	Taste of liquid glass no 9	Taste of liquid glass no 10	a_veryfaint_taste_of1	a_veryfaint_taste_of2	a_veryfaint_taste_of3
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2	2	2	0	0	0	1	1	1	2	2	2	2	0	3	3	3	3	0	0	0	0	0	0	0	0	0
3	0	0	1	1	1	1	2	2	0	0	0	0	1	1	2	2	2	2	0	0	0	0	0	1	1	2	2	2	0	3	2	2	2	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2	2	2	0	0	1	1	1	2	2	2	2	2	0	3	3	3	2	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	1	1	0	2	3	3	2	2	2	2	2	2	2	0	0	0
6	0	0	0	2	2	2	2	2	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	2	2	2	2	2	0	2	2	3	3	2	2	2	2	2	2	2	4	0
7	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	1	1	0	2	3	3	3	2	2	2	2	2	2	1	2	0
8	0	0	0	1	1	2	2	2	0	0	0	0	1	2	2	2	2	2	0	0	0	0	2	2	2	2	2	2	0	3	3	2	2	2	2	2	2	2	2	2	2	0
9	0	0	1	1	1	2	2	2	0	0	0	0	1	1	1	1	2	2	0	0	0	0	1	1	1	2	2	2	0	3	3	3	2	2	2	2	2	2	2	1	0	0
10	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	1	1	0	2	2	2	2	2	2	2	2	2	2	1	2	0
11	0	0	1	1	1	1	2	2	0	0	0	0	1	2	2	2	2	2	0	0	0	0	0	1	1	2	2	2	0	3	3	3	2	2	2	2	2	2	2	1	2	0
12	0	0	0	1	1	2	2	2	0	0	0	0	0	0	0	1	1	2	0	1	1	2	2	2	3	3	3	3	0	2	2	2	2	2	2	2	2	2	2	2	4	4
13	0	0	1	2	2	2	2	2	0	0	0	0	1	2	2	2	2	2	0	0	0	1	1	1	2	2	2	2	0	3	3	2	2	2	2	2	2	2	2	1	0	0
14	0	0	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	0	2	3	3	2	2	2	2	2	2	2	2	0	0
15	0	0	0	1	1	2	2	2	0	0	0	0	1	1	2	2	2	2	0	0	0	0	2	2	2	2	2	2	0	3	3	2	2	2	2	2	2	2	2	2	2	0
16	0	0	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	0	3	3	3	3	3	3	3	3	3	3	1	0	0
17	0	0	1	2	2	2	2	2	0	0	0	0	0	1	1	1	2	2	0	0	0	0	1	1	1	2	2	2	0	3	3	2	3	3	2	2	2	2	2	1	5	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	2	2	2	2	2	2	2	2	1	2	4
19	0	0	1	1	1	1	1	1	0	0	0	0	1	1	2	2	2	2	0	0	0	1	1	2	2	2	2	2	0	3	3	3	2	2	2	2	2	2	2	1	4	0
20	0	0	1	1	1	1	1	1	0	0	0	0	1	1	2	2	2	2	0	0	0	1	1	2	2	2	2	2	0	3	3	2	2	2	2	2	2	2	2	2	0	0
21	0	0	0	1	1	1	1	1	0	0	0	0	0	2	2	2	2	2	0	0	0	0	2	2	2	2	2	2	0	2	3	3	2	3	2	2	2	2	2	1	2	0
22	0	0	0	0	1	1	1	1	0	0	0	0	0	2	2	2	2	2	0	0	0	0	0	2	2	2	2	2	0	2	3	2	2	2	2	2	2	2	2	1	2	0
23	0	0	0	2	2	2	2	2	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	2	2	2	2	2	0	2	2	2	2	2	2	2	2	2	2	0	2	0
24	0	0	0	1	2	2	2	2	0	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	1	2	2	2	0	2	3	2	2	2	2	2	2	2	2	0	0	0
25	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	2	2	0	0	0	1	1	1	2	2	3	2	0	3	3	3	2	2	2	2	2	2	2	0	4	6
26	0	0	1	1	2	2	2	2	0	0	0	1	1	1	2	2	2	2	0	0	0	0	2	2	2	2	2	2	0	3	3	2	2	2	2	2	2	2	2	2	0	0
27	0	0	1	1	2	2	2	2	0	0	0	0	0	0	0	1	1	0	0	0	1	1	2	2	3	3	3	3	0	2	3	3	2	2	2	2	2	2	2	0	0	0
28	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2	2	2	0	0	0	1	1	1	2	2	2	2	0	3	3	3	2	2	2	2	2	2	2	0	4	0
29	0	0	0	1	1	2	2	2	0	0	0	0	0	0	0	1	1	0	0	0	1	1	2	2	3	3	3	3	0	3	3	3	2	2	2	2	2	2	2	0	0	4
30	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	1	0	2	3	3	3	2	2	2	2	2	2	0	0	0
31	0	0	1	1	1	1	2	2	0	0	0	0	1	1	2	2	2	2	0	0	0	0	0	1	1	2	2	2	0	3	3	3	2	2	2	2	2	2	2	0	1	0
32	0	0	0	1	1	1	1	1	0	0	0	0	1	1	1	2	2	2	0	0	0	0	0	1	1	2	2	2	0	3	3	3	3	2	2	2	2	2	2	0	0	0
33	0	0	1	1	1	1	1	1	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	0	3	2	2	2	2	2	2	2	2	2	0	0	0
34	0	0	0	0	1	1	1	1	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	2	2	2	2	2	0	3	3	2	3	2	2	2	2	2	2	0	0	0
35	0	0	0	0	0	2	2	2	0	0	0	0	0	0	1	2	2	0	0	0	0	0	0	0	0	1	1	1	0	2	2	3	3	2	2	2	2	2	2	0	0	0
36	0	0	0	1	1	1	1	1	0	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	2	2	2	2	0	3	3	3	2	2	2	2	2	2	2	4	4	0
37	0	0	0	1	1	1	1	1	0	0	0	0	0	0	1	1	2	2	0	0	0	1	1	1	2	2	2	2	0	2	3	3	3	2	2	2	2	2	2	0	0	0

38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	Case code
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 30%
0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 40%
0	0	0	0	2	1	1	0	2	0	0	0	0	0	0	0	2	0	0	2	0	0	2	0	2	1	1	0	0	0	0	0	0	0	1	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 50%
0	0	0	0	2	1	1	0	2	0	0	1	1	0	0	0	2	0	0	2	0	0	2	0	2	1	1	0	0	0	0	0	0	0	1	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 60%
1	0	0	0	2	1	1	0	2	0	0	1	1	0	0	0	3	0	0	3	0	0	2	0	2	1	1	0	0	0	0	0	0	0	1	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 70%
1	0	2	1	2	2	1	0	2	1	0	1	1	1	1	0	3	0	0	3	0	0	2	1	2	1	1	0	0	0	0	0	0	0	1	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 80%
1	0	2	1	2	2	2	0	2	1	0	1	1	1	2	0	3	0	0	3	0	0	2	1	2	1	1	0	0	0	0	0	0	0	1	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 90%
1	0	2	1	2	2	2	0	2	1	0	1	1	1	2	0	3	0	0	3	0	0	2	1	2	1	1	0	0	0	0	0	0	0	1	0	0	Burning sensation in chest and abdomen (Vidahati deham)(@ 100%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@10 %
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 20%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 30%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 40%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 50%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@60 %
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 70%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 80%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 90%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 100%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@10 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@20 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@30 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@40 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@50 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@60 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@70 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@80 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@90 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Excessive salivation (Aasya Sravana)(@100 % Conc
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Taste of liquid glass no 0
3	2	2	2	3	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	1	Taste of liquid glass no 1
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	Taste of liquid glass no 2
2	2	2	2	3	3	2	2	3	3	2	2	3	3	2	3	3	2	3	3	3	2	2	2	3	3	3	3	2	2	2	2	3	3	3	2	2	Taste of liquid glass no 3
2	2	2	2	3	3	2	2	3	3	2	2	3	3	2	3	3	2	3	3	3	2	2	2	3	3	3	3	2	2	2	2	3	3	3	2	2	Taste of liquid glass no 4
2	2	2	2	3	3	2	2	3	3	2	2	3	3	2	3	3	2	3	3	3	2	2	2	3	3	3	3	2	2	2	2	3	3	3	2	2	Taste of liquid glass no 5
2	2	2	2	3	3	2	2	3	3	2	2	3	3	2	3	3	2	3	3	3	2	2	2	3	3	3	3	2	2	2	2	3	3	3	2	2	Taste of liquid glass no 6
2	2	2	2	3	3	2	2	3	3	2	2	3	3	2	3	3	2	3	3	3	2	2	2	3	3	3	3	2	2	2	2	3	3	3	2	2	Taste of liquid glass no 7
2	2	2	2	3	3	2	2	3	3	2	2	3	3	2	3	3	2	3	3	3	2	2	2	3	3	3	3	2	2	2	2	3	3	3	2	2	Taste of liquid glass no 8
2	2	2	2	3	3	2	2	3	3	2	2	3	3	2	3	3	2	3	3	3	2	2	2	3	3	3	3	2	2	2	2	3	3	3	2	2	Taste of liquid glass no 9
2	2	2	2	3	3	2	2	3	3	2	2	3	3	2	3	3	2	3	3	3	2	2	2	3	3	3	3	2	2	2	2	3	3	3	2	2	Taste of liquid glass no 10
0	0	0	0	2	2	0	0	4	0	0	0	0	1	0	0	4	0	0	4	0	0	4	0	4	0	0	0	0	4	4	4	0	0	1	0	0	a_veryfaint_taste_of1
0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	1	0	0	a_veryfaint_taste_of2
0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	4	4	0	0	1	0	0	a_veryfaint_taste_of3

Case code	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Burning sensation in chest and abdomen (Vidahati deham)(@ 30%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burning sensation in chest and abdomen (Vidahati deham)(@ 40%	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Burning sensation in chest and abdomen (Vidahati deham)(@ 50%	0	0	0	0	1	0	0	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0	0	1	0	1
Burning sensation in chest and abdomen (Vidahati deham)(@ 60%	0	0	0	0	1	0	0	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0	0	1	0	1
Burning sensation in chest and abdomen (Vidahati deham)(@ 70%	0	1	0	0	1	0	0	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0	0	1	2	1
Burning sensation in chest and abdomen (Vidahati deham)(@ 80%	1	1	0	2	1	0	3	1	0	1	1	1	2	1	1	2	1	1	1	0	0	0	0	2	2	1
Burning sensation in chest and abdomen (Vidahati deham)(@ 90%	1	1	0	2	1	0	3	1	0	1	2	2	2	1	1	2	1	1	1	0	0	0	0	2	2	1
Burning sensation in chest and abdomen (Vidahati deham)(@ 100%	2	1	0	2	2	0	0	0	0	1	2	2	2	2	1	2	1	1	1	0	0	0	0	2	2	2
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@10 %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 20%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 30%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 40%	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	2	0	0	0
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 50%	0	0	0	0	1	0	0	0	0	0	1	1	1	1	0	0	1	0	0	3	0	0	3	0	0	1
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@60 %	2	0	0	0	1	0	0	0	0	1	2	2	1	1	0	0	1	0	0	2	0	0	2	0	0	1
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 70%	2	1	0	0	2	0	0	0	0	1	2	2	2	1	0	0	2	0	0	2	0	0	2	0	0	2
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 80%	2	1	0	0	2	0	0	1	1	1	2	2	2	2	1	1	2	0	0	2	0	0	2	0	0	2
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 90%	2	1	0	0	2	0	0	1	1	2	2	2	2	2	1	1	2	0	0	2	0	0	2	0	0	2
Irritation in the nasopharangeal region (Kanta and Shiropradesha)(@ 100%	2	1	0	0	2	0	0	2	1	2	2	2	2	2	1	1	2	0	0	2	0	0	2	0	0	2
Excessive salivation (Aasya Sravana)(@10 % Conc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Excessive salivation (Aasya Sravana)(@20 % Conc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Excessive salivation (Aasya Sravana)(@30 % Conc	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Excessive salivation (Aasya Sravana)(@40 % Conc	0	0	0	2	1	0	0	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0	0	1	0	1
Excessive salivation (Aasya Sravana)(@50 % Conc	0	0	0	2	1	0	0	1	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0	2
Excessive salivation (Aasya Sravana)(@60 % Conc	1	0	0	3	2	0	0	1	1	1	2	2	2	1	1	2	1	0	0	0	0	0	0	2	0	2
Excessive salivation (Aasya Sravana)(@70 % Conc	1	1	0	2	2	0	0	1	1	1	2	2	2	1	1	2	1	0	0	0	0	0	0	2	0	2
Excessive salivation (Aasya Sravana)(@80 % Conc	2	1	0	2	2	0	1	1	1	1	2	2	2	1	1	2	1	1	1	0	0	0	0	2	0	3
Excessive salivation (Aasya Sravana)(@90 % Conc	2	1	0	2	2	0	1	1	2	2	2	2	2	2	1	2	1	1	1	0	0	0	0	2	0	3
Excessive salivation (Aasya Sravana)(@100 % Conc	2	1	0	2	3	0	1	2	1	2	2	2	2	2	2	2	1	1	1	0	0	0	0	2	0	3
Taste of liquid glass no 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taste of liquid glass no 1	2	3	2	2	2	2	2	2	3	2	2	2	2	3	3	3	3	2	1	3	3	3	3	3	3	3
Taste of liquid glass no 2	3	2	3	2	2	3	3	2	3	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3
Taste of liquid glass no 3	3	3	3	2	2	3	3	2	3	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3
Taste of liquid glass no 4	3	3	2	2	2	3	3	2	3	3	3	3	3	2	3	3	3	2	2	3	3	2	2	3	3	2
Taste of liquid glass no 5	3	2	2	2	2	3	3	2	3	2	2	2	3	3	2	3	3	2	2	2	2	2	2	2	2	2
Taste of liquid glass no 6	3	2	2	2	2	3	3	2	3	2	2	2	2	2	2	2	3	2	2	2	2	3	3	2	2	2
Taste of liquid glass no 7	3	2	2	2	2	3	3	2	2	2	2	2	2	2	2	2	3	2	2	2	2	3	3	2	2	2
Taste of liquid glass no 8	3	2	2	2	2	3	3	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	3	2	2	2
Taste of liquid glass no 9	3	2	2	2	2	3	3	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2
Taste of liquid glass no 10	3	2	2	2	2	3	3	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2
a_veryfaint_taste_of1	0	0	1	2	4	0	0	2	0	2	2	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0
a_veryfaint_taste_of2	0	0	0	0	4	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0
a_veryfaint_taste_of3	0	0	0	0	4	0	0	0	0	0	0	0	4	4	0	0	0	0	0	6	0	0	0	0	0	0

Case code	a_veryfaint_taste_of4	a_veryfaint_taste_of5	a_veryfaint_taste_of6	a_veryfaint_taste_of7	a_veryfaint_taste_of8	a_veryfaint_taste_of9	a_veryfaint_taste_of10	a_faint_taste_of1	a_faint_taste_of2	a_faint_taste_of3	a_faint_taste_of4	a_faint_taste_of5	a_faint_taste_of6	a_faint_taste_of7	a_faint_taste_of8	a_faint_taste_of9	a_faint_taste_of10	a_weak_taste_of1	a_weak_taste_of2	a_weak_taste_of3	a_weak_taste_of4	a_weak_taste_of5	a_weak_taste_of6	a_weak_taste_of7	a_weak_taste_of8	a_weak_taste_of9	a_weak_taste_of10	a_clear_taste_of1	a_clear_taste_of2	a_clear_taste_of3	a_clear_taste_of4	a_clear_taste_of5	a_clear_taste_of6	a_clear_taste_of7	a_clear_taste_of8	a_clear_taste_of9	a_clear_taste_of10	Visual Analog Scale Score for Glass with 1	Visual Analog Scale Score for Glass with 2	Visual Analog Scale Score for Glass with 3	Visual Analog Scale Score for Glass with 4	Visual Analog Scale Score for Glass with 5	Visual Analog Scale Score for Glass with 6	Visual Analog Scale Score for Glass with 7	Visual Analog Scale Score for Glass with 8	Visual Analog Scale Score for Glass with 9	Visual Analog Scale Score for Glass with 10
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	6	6	6	6	6	6	8	8	8
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	1	3	3	4	4	6	6	8	8	8
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	1	2	4	4	5	6	6	8	8	8
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	1	3	3	4	5	6	6	8	9	9
5	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	1	2	3	4	4	6	6	8	9	9
6	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	1	3	3	4	5	5	6	8	8	9
7	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	1	3	3	4	4	5	6	6	8	8
8	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	2	2	2	4	5	6	7	8	8	9
9	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	1	3	4	4	5	6	6	8	8	8
10	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	1	2	3	3	4	6	6	8	9	9
11	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	1	2	3	3	4	4	5	8	8	8
12	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	6	6	6	6	6	6	8	8	8
13	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	2	2	4	4	6	6	8	8	9	9
14	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	1	3	4	5	6	6	8	8	9	9
15	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	2	2	2	4	5	6	7	8	8	9
16	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	1	3	4	5	6	6	8	8	9	9
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	2	2	4	6	6	8	8	9	9	9
18	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	1	2	3	3	4	6	6	8	9	9
19	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	2	2	4	4	5	6	8	8	10	10
20	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	2	2	4	4	5	6	8	8	10	10
21	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	1	3	3	4	5	5	6	8	9	9
22	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	1	3	4	4	5	5	6	7	8	8
23	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	1	4	4	5	5	6	6	7	9	9
24	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	2	2	4	6	6	8	8	9	9	9
25	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	2	3	3	4	4	5	7	8	8	8
26	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	2	2	2	4	5	6	7	8	8	9
27	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	6	6	6	6	8	8	8	8	8
28	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	1	2	3	4	5	6	6	8	9	9
29	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	2	3	4	4	4	6	6	6	8	8
30	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	2	2	3	3	4	6	6	6	8	8
31	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	1	2	4	4	5	6	6	8	8	8
32	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	2	2	3	4	4	6	6	8	9	9
33	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	2	2	3	3	5	6	6	8	8	8
34	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	2	2	3	4	4	5	6	6	7	8
35	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	2	2	4	4	6	6	8	8	8	8
36	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	2	3	3	4	4	6	6	7	8	9
37	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	2	2	2	4	4	4	6	8	8	9

Case code	a_veryfaint_taste_of4	a_veryfaint_taste_of5	a_veryfaint_taste_of6	a_veryfaint_taste_of7	a_veryfaint_taste_of8	a_veryfaint_taste_of9	a_veryfaint_taste_of10	a_faint_taste_of1	a_faint_taste_of2	a_faint_taste_of3	a_faint_taste_of4	a_faint_taste_of5	a_faint_taste_of6	a_faint_taste_of7	a_faint_taste_of8	a_faint_taste_of9	a_faint_taste_of10	a_weak_taste_of1	a_weak_taste_of2	a_weak_taste_of3	a_weak_taste_of4	a_weak_taste_of5	a_weak_taste_of6	a_weak_taste_of7	a_weak_taste_of8	a_weak_taste_of9	a_weak_taste_of10	a_clear_taste_of1	a_clear_taste_of2	a_clear_taste_of3	a_clear_taste_of4	a_clear_taste_of5	a_clear_taste_of6	a_clear_taste_of7	a_clear_taste_of8	a_clear_taste_of9	a_clear_taste_of10	Visual Analog Scale Score for Glass with 1	Visual Analog Scale Score for Glass with 2	Visual Analog Scale Score for Glass with 3	Visual Analog Scale Score for Glass with 4	Visual Analog Scale Score for Glass with 5	Visual Analog Scale Score for Glass with 6	Visual Analog Scale Score for Glass with 7	Visual Analog Scale Score for Glass with 8	Visual Analog Scale Score for Glass with 9	Visual Analog Scale Score for Glass with 10
38	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	2	2	4	4	6	6	8	8	8
39	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	2	2	4	4	6	6	8	9	10
40	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	4	4	4	4	2	3	4	4	6	6	7	8	9
41	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	6	0	0	0	0	0	0	0	0	0	0	4	4	4	4	2	2	4	4	6	6	8	8	8
42	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	5	5	6	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	2	4	4	6	6	6	8	8	8
43	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	2	3	4	4	5	5	6	7	8	9
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	8	8	8	8
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	5	6	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	2	3	4	5	6	7	7	8	8	9
46	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	2	2	4	4	5	5	6	6	8	8
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	6	6	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	2	2	2	4	4	4	6	6	6	7
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	2	2	2	4	4	4	4	6	8	8
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	2	2	4	4	5	6	6	8	8	8
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	2	2	4	6	8	8	8	8	8	8
51	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	2	2	3	3	4	4	4	7	8	9
52	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	2	4	4	6	6	8	8	10	10	10
53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	2	2	4	4	6	6	6	8	8	9
54	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	6	6	8	8	10	10	10
55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	4	3	4	5	6	7	7	8	8	9	10
56	0	0	0	0	0	0	0	5	0	0	6	0	0	0	0	0	0	0	0	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	1	1	3	3	4	5	6	6	7	7
57	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	4	6	6	6	6	8	8	8
58	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	3	3	4	6	6	8	8	8	8	8
59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	1	1	1	1	1
60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	0	1	2	3	4	5	6	7	8	10
61	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	0	0	2	2	4	4	4	4	6	6
62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	1	1	3	4	5	6	7	7	8	9
63	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	0	0	1	1	1	2	3	3	3	3
64	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	5	5	6	6	6	6	7	7
65	0	0	0	0	0	0	0	0	0	4	0	6	0	0	0	0	0	0	0	0	4	4	0	0	5	0	0	0	0	0	0	0	0	4	4	4	4	4	0	0	0	1	1	1	1	1	1	1
66	6	0	4	0	0	6	0	0	0	0	0	6	6	4	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	0	4	0	1	1	2	2	3	4	4	4	5
67	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	4	0	1	3	4	6	6	7	7	8	9
68	4	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	5	5	5	5	5	0	0	0	0	0	4	4	4	4	4	4	0	1	3	4	4	5	7	7	7	8
69	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	6	6	0	0	0	0	0	0	0	4	4	4	4	4	4	4	0	0	1	4	4	4	5	5	6	6
70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	4	3	3	4	4	5	6	7	7	7	7
71	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	1	1	3	3	4	5	5	6	7	7
72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	3	3	4	4	6	6	6	8	8	8
73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	1	1	3	4	4	5	6	6	8	8
74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	2	2	3	3	4	4	6	6	8	9

Case code	a_veryfaint_taste_of4	a_veryfaint_taste_of5	a_veryfaint_taste_of6	a_veryfaint_taste_of7	a_veryfaint_taste_of8	a_veryfaint_taste_of9	a_veryfaint_taste_of10	a_faint_taste_of1	a_faint_taste_of2	a_faint_taste_of3	a_faint_taste_of4	a_faint_taste_of5	a_faint_taste_of6	a_faint_taste_of7	a_faint_taste_of8	a_faint_taste_of9	a_faint_taste_of10	a_weak_taste_of1	a_weak_taste_of2	a_weak_taste_of3	a_weak_taste_of4	a_weak_taste_of5	a_weak_taste_of6	a_weak_taste_of7	a_weak_taste_of8	a_weak_taste_of9	a_weak_taste_of10	a_clear_taste_of1	a_clear_taste_of2	a_clear_taste_of3	a_clear_taste_of4	a_clear_taste_of5	a_clear_taste_of6	a_clear_taste_of7	a_clear_taste_of8	a_clear_taste_of9	a_clear_taste_of10	Visual Analog Scale Score for Glass with 1	Visual Analog Scale Score for Glass with 2	Visual Analog Scale Score for Glass with 3	Visual Analog Scale Score for Glass with 4	Visual Analog Scale Score for Glass with 5	Visual Analog Scale Score for Glass with 6	Visual Analog Scale Score for Glass with 7	Visual Analog Scale Score for Glass with 8	Visual Analog Scale Score for Glass with 9	Visual Analog Scale Score for Glass with 10
75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	2	2	4	4	6	6	8	8	9	9
76	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	2	2	4	4	6	6	6	7	7	8
77	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	6	6	0	0	0	0	0	0	0	0	4	4	4	4	4	4	0	0	1	4	4	6	6	8	8
78	6	0	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	1	1	3	3	4	5	5	6	7	8
79	5	0	0	0	0	0	0	0	0	0	0	4	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	0	1	3	4	4	5	8	8	8	9
80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	4	4	2	2	3	3	4	4	5	5	6	6
81	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	1	3	4	4	6	6	8	8	8	8
82	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	2	2	4	4	5	5	6	8	8	9
83	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	0	0	1	1	1	2	3	4	6	6
84	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	2	2	4	4	5	5	6	8	8	9
85	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	2	3	4	5	5	6	6	8	8	9
86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	2	3	4	5	5	6	6	8	8	8
87	4	0	0	0	0	0	0	0	0	0	0	4	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	0	1	3	4	4	5	8	8	8	9
88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	4	5	4	4	4	4	1	3	4	6	6	8	8	8	8	9
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92	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	1	2	2	2	3	4	4	5
93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	0	1	1	1	3	3	3	4	4	4
94	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	6	4	0	0	6	6	0	0	0	0	0	0	0	4	4	4	4	1	4	4	5	6	6	7	6	7	7
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100	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	5	5	5	5	5	0	0	0	0	0	0	4	4	4	4	0	1	3	4	4	5	7	7	7	8