“THE WORKING OF EDIBLE OIL INDUSTRY IN SOLAPUR CITY IS NOT SATISFACTORY DURING 1991 TO 2008”

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DECLARATION

I hereby declare that the thesis entitled **"The Working of Edible Oil Industry in Solapur City is not Satisfactory during – 1991 to 2008"** completed and written by me has not previously formed the basis for the award of any Degree or Diploma or other similar title of this or any other University or examining body.

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CERTIFICATE

This is to certify that the thesis entitled ***"The Working of Edible Oil Industry in Solapur City is not Satisfactory during 1991 to 2008"*** *which is being submitted herewith for the award of the Degree of* ***Vidyavachaspati (Ph.D)*** *in* ***Doctor of Philosophy in Economics*** *of* ***Tilak Maharashtra Vidyapeeth, Pune*** *is the result of original research work completed by* ***Shri A. S. Halli*** *under my supervision and guidance. To the best of my knowledge and belief the work incorporated in this thesis has not formed the basis for the award of any Degree of Similar title of this or any other University or examining body.*

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CHAPTER - I

A CURSORY REVIEW OF OIL INDUSTRY IN INDIA AND MAHARASHTRA

1.1 INTRODUCTION:

Food is the basic necessity of human being. It is produced by cultivating the land. Agricultural crop is divided into three categories.

(a) Food grains – includes, cereals, millets, pulses, vegetables and fruits.

(b) Non-food grains – includes, oilseeds, sugar cane etc.

(c) Fiber crops – cotton, jute etc.

Oil is one of the important factors in balanced food. Oil provides fats necessary for human being. Edible oil is produced by crushing the oilseeds. Groundnut, sesame, linseed, sun-flower, safflower etc. are the sources of edible oil.

In India, there are many states and the people of the different states have different taste. There is difference in consumption food also. According to their customs and taste, they consume different quantity of edible oil. The persons of Kashmir consume more oil than ghee. According to them oil is more potential for the physical health and beneficial than ghee. At Bengal and Tamilnadu states, people are using coconut as edible oil. However, it is true that in all most all in the states of India, the people are consuming the oil in the large quantity.[3]

India has the second largest area under oilseeds, next only to USA. However, it falls behind to the fourth place in terms of production due to comparatively low yields.' Yields remain lower largely on account of dependence on dry-land farming. During the early seventies shortages of edible oils led to substantial increase in the prices. Severe intra-year and intra-seasonal fluctuations in the prices is a common feature of the oilseed economy. Edible oil prices had contributed significantly to the national inflation levels during the recent years. Price movement in edible oils and oilseeds was perceived as a consequence of demand-supply gaps. Addressing this issue several policy options have been adopted in the last one and a half decade, despite the production remained stagnant until 1987-88. Only since then resurgence has taken place.[1]

Human body requires 34-38 gm. of fats and oils per day of which a measure part is used through the invisible

fats in cereals and pulses consumed. However, production on per capita availability of cereals and pulses has not shown any encouraging trend in the past 3 decades in India. The other option i.e. flesh foods are not only costlier but directly restricts on religious grounds also limit its use. In this background, protein, rich oilseeds take a significant role in providing body its required energy besides providing unsaturated fatty acids.

Certain specific unsaturated fatty acids i.e. linoleic acid are not synthesized by body as is done otherwise from the sugar and starch intakes. These essential fatty acids are also supplied through diet. They are needed for growth re-production, healthy skin and for normal utilisation of fats by body.

Even though edible oils are an important consumer item next to food grain in Indian diet, its per capita consumption compares very unfavorably with the world average of around 14.5 kg. Despite the poor level of consumption of oils and fats, which is 7.13 kg. in India, the demand has been expanding at a much faster rate than indigenous availability can match.

India occupies a prominent position on the oilseeds map of the world in terms of both acreage and production. The Indian vegetable oil economy is the world's fourth largest after the United States, China, and Brazil. Currently India accounts for about 8.4% of world oilseeds output, 6.6% of global production of oil mills, 6.4% of world oil mill exports, 8.9% of world vegetable oil production, 5.7% of vegetable oil imports, and 9.9% of the world edible oil consumption. However, growth in oilseeds production in the country has been slow due to non-availability of suitable high yielding varieties, low productivity and adverse climatic conditions. Even the slow growth of edible oil was unavoidable. The demand for edible oils since mid seventies had to be met by imports constituting about 30-35% to total supply. The rising imports of edible oil concerned the policy makers and then a decision was taken to achieve self sufficiency in edible oilseeds. The government launched various schemes including the technology "Mission on oilseeds" to augment production of oilseeds in mid eighties. These concentrate efforts of the government gave a big boost to oilseed sector which is evident from an impressive increase in production of oilseeds. All these happened under closed economic environment and regulated public policy dictated by food security and self sufficiency objectives.[4]

Until 1994 the Indian Edible Oil Industry was highly regulated through stringent licensing provisions and protected from world markets through non-tariff barriers like restrictions on exports and imports. However, the edible oil sector was opened up in the mid nineties which got reinforced with India signing Uruguay Round Agreement of the General Agreement on Tariffs and Trade (GATT) which seeks greater market to assess its members and reduction in the support to the agricultural sector. This increasingly exposed the Indian Edible Oil Sector to the world markets, which have been distorted by policies of high tariffs, domestic support and export subsidies in the developed countries.

A wide range of oilseed crops is grown in different agro-climatic regions of the country. Three oilseeds groundnut, soybean and rapeseed/mustard–together account for over 80 percent of oilseeds output. Groundnut is the most important crop with an estimated production of 8.2 million tonnes in 2003-04 grown mainly in Gujrat, Andhra Pradesh, Tamil Nadu, Karnataka and Maharashtra. The second most important oilseed crop is soybean (7.9 million tonnes), which is grown in Madhya Pradesh, Maharashtra, and Rajasthan accounting for more than 90 percent of production. Rapeseed and mustard is the third important crop in terms of acreage and production and is mainly grown in Rajasthan, Uttar Pradesh, Gujrat, Madhya Pradesh, West Bengal, Punjab and Haryana. Other important oilseeds are sunflower, safflower, sesame, nigerseed, linseed and caster seed. Apart from West Bengal and Rajasthan, Gujrat has also become a major sesame producing state. Coconut is the most important plantation crop.[2]

Between 1985-86 and 2003-04 production of oilseeds increased from 10.83 million tonnes to 25.14 million tonnes, largely through improvement in yields (GOI, 2005-06). Average yield increased from 570 kg./hectare in 1985-86 to 1072 kg./hectare in 2003-04. However, the productivity levels of oilseeds in the country are very low compared to world average and other country (GOI, 2005)'. Increase in area also contributed to higher production of oilseeds in the country. Area planted with all oilseeds increased from 19.02 million hectares in 1985-86 to 23.44 million hectares in 2003-04. The area under irrigation increased from about 17 percent to 23 percent in 2000-01. However, production witnessed a declining trend in the subsequent years and was a low as 15 million tonnes in 2007-08. Industry experts believe that the actual crop output may be even lower because of decline in area and yield levels mainly from drought conditions prevailing in the major production regions and fall in the domestic prices of edible oils because of large-scale imports in the recent years. Imports of edible oils have gone up from nearly 1 lakh tonnes in the early nineties to 17.50 lakh tonnes in 1996-97 to 51.1 lakh tonnes in 2002-03 and 40 lakh tonnes in 2007-08 (SEA, 2008-09).[5]

1.2 Indian Consumer Expenditure:

Changes in average diets may arise from economical growth and structural transformation. Monthly per capita consumption expenditure of edible oils increased in Rural and Urban areas. In 1993-94 it was 4.40 percent and it was 4.50 percent in 2007-08 in rural areas. In urban areas it was 4.40 percent in 1993-94 and it was 3.40 percent in 2007-08.

Table 1.1

Per Capita Consumption Expenditure on Edible Oils, Food Articles and Total

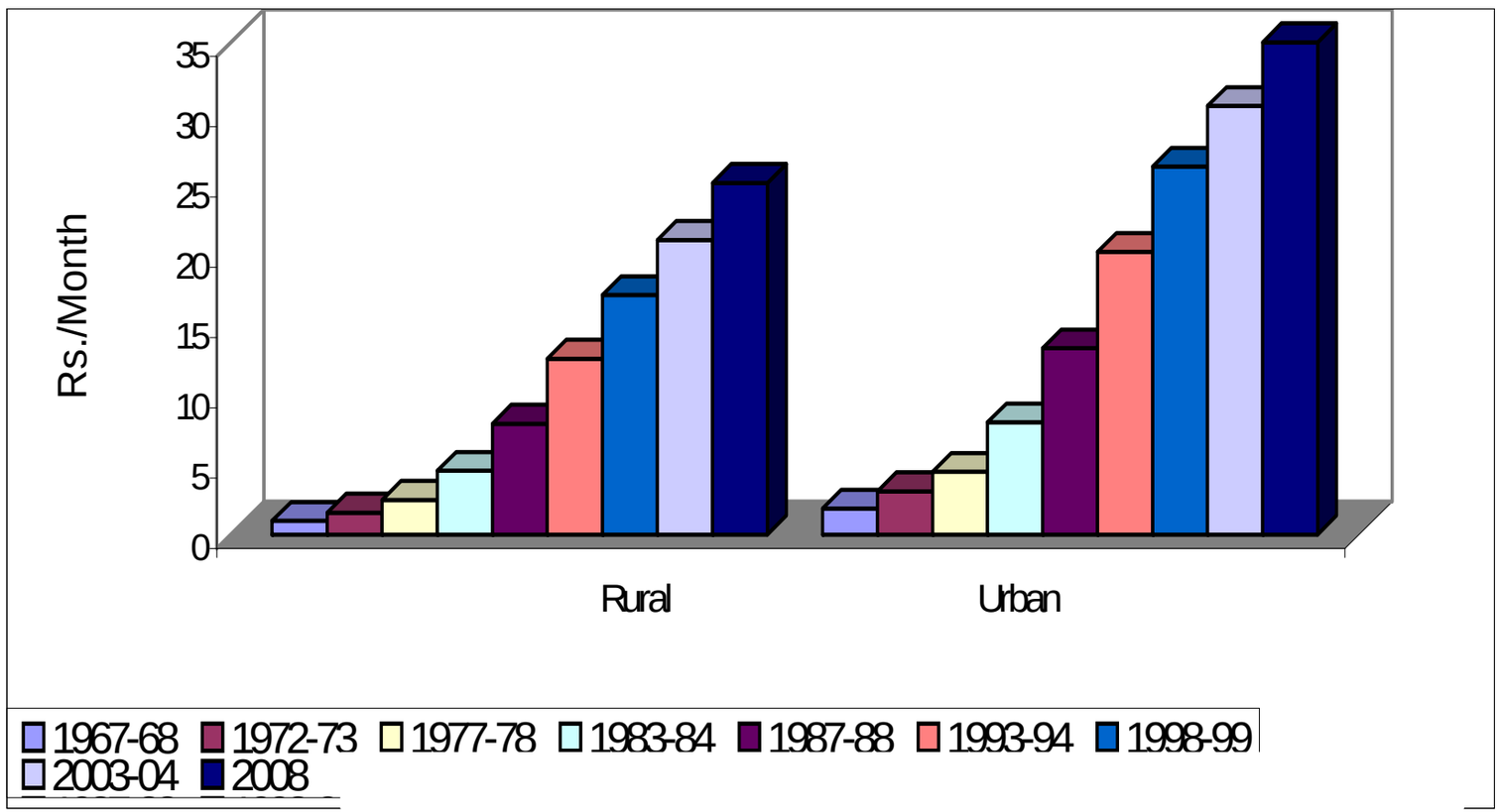
Items	1967-68	1972-73	1977-78	1983-84	1987-88	1993-94	1998-99	2003-04	2008
Rural									
Edible Oil	0.97 (2.9)	1.55 (3.51)	2.46 (3.57)	4.53 (4.0)	7.88 (5.0)	12.50 (4.4)	17.03 (4.47)	20.95 (4.58)	25 (4.5)
Total Food	25.85 (77.3)	32.16 (72.9)	44.33 (64.3)	73.63 (65.6)	100.82 (64.0)	177.80 (63.2)	241.34 (63.28)	262.47 (57.36)	299 (54)
Total	33.40 (100.0)	44.17 (100.0)	68.89 (100.0)	112.31 (100.0)	158.10 (100.0)	281.40 (100.0)	381.37 (100.0)	457.59 (100.0)	554 (100.0)
Urban									
Edible Oil	1.83 (4.1)	3.07 (4.8)	4.46 (4.6)	7.98 (4.8)	13.23 (5.3)	20.10 (4.4)	26.15 (3.97)	30.47 (3.73)	35 (3.4)
Total Food	29.82 (66.5)	40.84 (64.5)	57.67 (60.0)	97.31 (59.1)	139.73 (56.4)	250.30 (54.7)	325.51 (49.44)	379.14 (46.38)	429 (42.0)
Total	44.82 (100.0)	63.33 (100.0)	96.15 (100.0)	165.8 (100.0)	249.92 (100.0)	458.00 (100.0)	658.39 (100.0)	817.46 (100.0)	1022 (100.0)

SOURCE: NSSO, various issues.

Note : Figures in parentheses
show share to total consumption expenditure.

Graph 1.1

Per Capita Monthly Consumption Expenditure On Edible Oils in Rural and Urban Areas in India: 1967-68 to 2008



1.3 Present Position of Oil Mills in India and Maharashtra:

In India there are 9026 oil mills in 2007-08 producing 6.6 million tonnes oil per year. The requirement of oil per year is 10 million tonnes. So to meet the increased demand, since last 10 years the number of oil mills increased in some states particularly in Gujrat, Karnataka, Andhra Pradesh and Maharashtra. To meet the increased demand for edible oil in India, the oil mill owners established a modern heavy machinery and modern processing technology. Out of the total 6.6 million tonnes edible oil production in India, Gujrat state contributes 30%, Maharashtra 20%, Karnataka 10% and the contribution of other states is 40%. The total production of edible oil in Maharashtra is 1.32 million tonnes in 2007-08.

The state wise classification of oil mills and oil production is as below:

Table 1.2

Number of Oil Mills and Production in 2007-2008

Sr. No.	States	Number of Oil Mills	Production in Million Tonnes
1	Gujrat	2709	1.98
2	Maharashtra	1806	1.32
3	Karnataka	903	0.66
4	Other States	3608	2.64
	Total:	**9026**	**6.60**

SOURCE: Edible Oils and Oilseeds Economy of Indian Oxford And IBH Publishing Co. Pvt. Ltd., New Delhi.

There are about 1806 oil mills in 2007-2008 in Maharashtra providing 1.32 million tonnes edible oil. Apart from this there are many oil mills engaged in production of rapeseed oil and cotton seed oil also. The large number of farmers and agriculture labors depend upon oilseed farming. Thousands of people are engaged in oilseed production and trading. Many workers depend directly upon the oil mills and solvent extraction industry and equally large number of people are engaged in middle agencies and services and trading of the oil business. Thus, it is the most important industry of the Maharashtra state from employment point of view.

Each segment of Maharashtra's oilseed processing industry has small capacities and low technical efficiency compared with the Gujrat state. The structure of the industry has been heavily influenced by the government policies that have regulated plant scale, capital intensity and oil marketing, provided incentives for building new capacity and prevented imports of oilseeds for processing.

The consumption of edible oil is increasing not only in India but also in Maharashtra from 6 kg. to 8 kg. per capita per annum along with increasing population. It is true that almost all in the states of India the people are consuming oil in large quantity. The oil is not used only for consumption purpose but it is also used for as a raw material for the production of other products like vegetable oil, vanaspati ghee, the production of medicines, varnish, soaps, paints, lubricants oil etc. Therefore, there is a shortage of required edible oil as compared to the total production of Maharashtra.

1.4 Production of Oilseeds in Maharashtra State:

The production of oilseeds and the yield per hectare in Maharashtra state is also material aspect for considering the production of edible oils. Among all states the Maharashtra state has ranked second in the list of production of oilseeds and edible oil. Safflower is the most important rubi oilseed crop in the Maharashtra state and occupying a pride of place in oilseeds production. In Maharashtra it is grown in 5.89 lakh hectares with production of 3.30 lakh tonnes in 2007-08. The average yield of safflower in the state is 560 kg./hectare (2007-08).

The current status and growth behavior of major edible oilseeds, crops in terms of area, production and yield across different states of India during the last 3 decades and sub-periods are analyzed.[6]

Table 1.3

Share of Major States in Oilseeds Acreage and Production in India: 2007-08

Oilseeds	*Major States*			
	Area	***%***	***Production***	***%***
Groundnut	Gujrat	32.6	Gujrat	42.5
	Andhra Pradesh	25.6	Andhra Pradesh	15.8
	Karnataka	13.9	Tamil Nadu	14.9
	Tamil Nadu	9.7	Karnataka	8.3
rapeseed –	Rajasthan	36.7	Rajasthan	39.5
Mustard	Uttar Pradesh	16.5	Uttar Pradesh	15.8
	Madhya Pradesh	9.0	Haryana	16.1
	Haryana	11.7	Madhya Pradesh	7.8
Sesame	Gujrat	23.0	Gujrat	30.4
	Rajasthan	16.7	West Bengal	16.6
	Uttar Pradesh	10.2	Tamil Nadu	7.0
	Andhra Pradesh	8.4	Madhya Pradesh	5.8
	Maharashtra	7.3	Maharashtra	5.7
	Tamil Nadu	5.5	Andhra Pradesh	4.5
	West Bengal	6.7	Rajasthan	13.2
	Madhya Pradesh	8.0		
Soybean	Madhya Pradesh	67.6	Madhya Pradesh	60.2
	Maharashtra	20.8	Maharashtra	28.0
	Rajasthan	8.6	Rajasthan	8.9
Sunflower	Karnataka	53.7	Karnataka	41.6
	Andhra Pradesh	24.4	Andhra Pradesh	32.5
	Maharashtra	17.7	Maharashtra	15.3
Safflower	Maharashtra	69.8	Maharashtra	63.7
	Karnataka	24.2	Karnataka	32.0
	Andhra Pradesh	5.0	Andhra Pradesh	3.3

Table 1.3 Contd.....

Share of Major States in Oilseeds Acreage and Production in India: 2007-08

Oilseeds	*Major States*			
	Area	***%***	***Production***	***%***
Niger	Orissa	29.5	Orissa	27.3
	Madhya Pradesh	24.5	Madhya Pradesh	20.9
	Maharashtra	12.3	Maharashtra	13.9
	Karnataka	7.0	Karnataka	5.5
	Bihar	2.8	Bihar	2.1
Castorseed	Gujrat	41.2	Gujrat	68.5
	Andhra Pradesh	39.7	Andhra Pradesh	16.0
	Rajasthan	6.7	Rajasthan	9.5
	Tamil Nadu	3.1	Tamil Nadu	2.4
	Karnataka	2.7	Karnataka	1.1
Linseed	Madhya Pradesh	30.6	Madhya Pradesh	30.8
	Uttar Pradesh	16.7	Uttar Pradesh	19.3
	Maharashtra	13.9	Bihar	14.4
	Bihar	8.8	Maharashtra	9.2
	Orissa	4.3	Orissa	3.5
	Karnataka	3.3		
Total Oil	**Madhya Pradesh**	**23.6**	**Madhya Pradesh**	**22.0**
Seeds	**Rajasthan**	**12.9**	**Gujrat**	**18.1**
	Gujrat	**12.7**	**Rajasthan**	**14.6**
	Maharashtra	**11.3**	**Maharashtra**	**12.4**
	Andhra Pradesh	**10.8**	**Andhra Pradesh**	**7.4**
	Karnataka	**8.8**	**Karnataka**	**5.2**
	Uttar Pradesh	**5.2**	**Tamil Nadu**	**5.1**
	Tamil Nadu	**3.1**	**Uttar Pradesh**	**4.7**
			West Bengal	**2.7**

SOURCE: GOI, 2008.

Note: Figures in parentheses show the state's percentage share in all-India area and production.

The Table 1.3 shows the share of major states in oilseeds acreage and production in India during 2007-08. In Groundnut oilseed the Gujrat state's share, in acreage 32.6% and in production 42.5%, is higher whereas the Tamil Nadu state's share, in acreage 9.7% and in production 8.3%, is lower than the other states in India.

In rapeseed-mustard oilseed the Rajasthan state's share, in acreage 36.7% and in production 39.5%, is higher whereas the Madhya Pradesh state's share, in acreage 9.0% and the Madhya Pradesh state's share in production 7.8%, is lower than the other states in India.

In sesame oilseed the Gujrat state's share, in acreage 23.0% and in production 30.4%, is higher whereas the Tamil Nadu state's share, in acreage 5.5% and the Andhra Pradesh state's share in production 4.5%, is lower than the other states in India.

In soybean oilseed the Madhya Pradesh state's share, in acreage 67.6% and in production 60.2%, is higher whereas the Rajasthan state's share, in acreage 8.6% and in production 8.9%, is lower than the other states in India.

In sunflower oilseed the Karnataka state's share, in acreage 53.7% and in production 41.6%, is higher whereas the Maharashtra state's share, in acreage 17.7% and in production 15.3%, is lower than the other states in India.

In safflower oilseed the Maharashtra state's share, in acreage 69.8% and in production 63.7%, is higher whereas the Andhra Pradesh state's share, in acreage 5.0% and in production 3.3%, is lower than the other states in India.

In niger oilseed the Orissa state's share, in acreage 29.5% and in production 27.3%, is higher whereas the Bihar state's share, in acreage 2.8% and in production 2.1%, is lower than the other states in India.

In castorseed oilseed the Gujrat state's share, in acreage 41.2% and in production 68.5%, is higher whereas the Karnataka state's share, in acreage 2.7% and in production 1.1%, is lower than the other states in India.

In linseed oilseed the Madhya Pradesh state's share, in acreage 30.6% and in production 30.8%, is higher whereas the Karnataka state's share, in acreage 3.3% and the Orissa state's share in production 3.5%, is lower than the other states in India.

The above table also provides the information that in total oilseeds the share of Madhya Pradesh in acreage is 23.6% which is highest and whereas the share of Tamilnadu is lowest which is 3.1%. And also Madhya Pradesh is top in the share of production i.e. 22.0% and West Bengal is lowest i.e. 2.7%.[7]

1.5 Oilseeds Profile of Maharashtra:

Though India has the largest area and production of oilseed crops in the world, India is not in a position to meet its entire requirement of edible oils indigenously.[9]

It is necessary to launch an ambitious programme for increasing the production of oilseed crops in India. Major constraints for low production of edible oils are –

1) Maximum area under oilseeds is rain fed depending badly upon Monsoon.

2) Poor adoption of improved production technology.

3) Lack of high yielding varieties suited to specific conditions, namely different seasons, farming systems.

4) Non-availability of adequate quality seed.

5) Poor post-harvest technology.

6) Uncertain market prices.

7) Inadequate credit facilities.

The area and production of oilseed crops in India and Maharashtra in 2001 are as given in Table 1.4.

Table 1.4

Area and Production of Major Oilseed Crops (2007-08)

In India and Maharashtra.

	Crop	Maharashtra Yield			India Yield		
		000' hectare	000' tonnes	kg./ hectare	000' hectare	000' tonnes	kg. /hectare
1	Groundnut	1708.32	1057.68	1444.60	16571.04	12047.04	1744.80
	(kharif)Summer	275.28	344.16	3000.00	--	--	--
2	Sesame	459.36	88.80	463.20	5862.00	1049.04	429.60
3	Safflower	1247.76	589.44	1137.60	1742.40	816.24	1123.20
4	Sunflower	151.92	98.16	1550.40	--	--	--
5	Linseed	596.40	125.28	504.00	4104.96	1026.00	600.00
6	Niger	244.80	42.96	420.00	1435.68	350.88	585.60
7	Rapeseed and Mustard	10.32	3.12	722.40	9751.20	5393.28	1327.20
8	Sunflower	11.28	3.36	715.20	1202.64	504.96	1008.00
	Total:	**4705.44**	**2352.96**	**9957.60**	**40669.92**	**21187.44**	**6818.40**

SOURCE: GOI, Various Sources.

Ground nut, safflower, sesame, linseed, niger and sun flower are the important oilseed crops grow in Maharashtra over an area of 47.05 lakh hectare with annual production of 23.53 lakh tonnes (2007/08).

Considering domestic direct use of oilseeds as a seed for sowing, in diet and in industries, the production of edible oil is estimated to be 3.30 lakh tonnes which supplies 24 gm. oil/day/capita for 24 crores population. As per the international standards, the minimum requirement of oil is 60 gm./day/capita. It is necessary to double our edible oil production.

1.6 Constraints in Low Oilseed Production in Maharashtra:

(1) Lack of Adequate Irrigation Facilities for Oilseed Crops:

About 90 percent groundnut and almost 100 percent of other oilseed crops are rain fed in the state and their production is at the mercy of the unpredictable monsoon.

(2) Poor Adoption of Improved Technology of Oilseed Production:

Majority of the farmers do not adopt improved production technology of oilseed crops, which has drastically reduced the productivity of these crops.

(3) Lack of Improved Varieties suited to Specific Conditions:

High yielding varieties of oilseeds suitable for rain fed conditions are available. But no improved varieties are available for summer cultivation of groundnut under irrigation and for cultivation of safflower in rubi under limited irrigations, because in the past no research work was carried with these objectives. It has been

experimentally proved that yields of groundnut during summer and that of safflower under limited irrigations is almost doubled.

(4) Lack of Suitable Varieties for Mixed Cropping:

Mixed cropping of groundnut with other crops is quite a common practice. Mixed cropping of groundnut with sorghum, sunflower, sesame with bajra or cotton and safflower with gram are paying, maintain stability of production and cover risk of failure of one of the crops due to adverse climatic conditions. Present varieties of oilseeds are suitable only for sole cropping. Varieties particularly suitable for mixed cropping system are required to be developed.

(5) Non-availability of Quality Seed of Improved Varieties to Farmers:

Progressive farmers do take advantage of quality seed of improved varieties of oilseeds. However, majority of the farmers, cannot take advantage of quality seed of oilseed crops. Often available quality seed is meager and does not fulfill the requirements of farmers. The present system of seed production and distribution is, therefore, required to be strengthened.[8]

(6) Low Plant Population on Farmer's Fields:

Low plant population in groundnut and other oilseed crops is the main cause of low average yield per hector in Maharashtra.

1.7 Strategy for Increasing Production and Productivity of Oilseeds:

The following will be the major thrusts in increasing oilseed production and productivity.

1) Summer Groundnut:

The yield of groundnut in summer season under irrigation is one and a half to two times more than the yield obtained in *kharif* season, because of absence of major pests (aphids, jassids, etc.) and diseases, timely irrigation and availability of ample sunlight. Leaf miner, however, is a serious pest of summer groundnut. It can, however, be effectively controlled by insecticides. Three years ago, the area under summer groundnut was less than 20 thousand hactares in Maharashtra state. Due to the facilities of subsidies on seed cost and assured adequate irrigation given by state Government, the area under this crop is increased to 1.22 lakh hectares during 1981 (summer season). In recent years, due to completion of small, medium and major irrigation projects in the state, area under irrigation is increasing. Area under summer groundnut, therefore, can be increased to over 2 lakh hectares in near future.

2) Adoption of Mixed/Inter/Sequential Cropping of Oilseeds with Other Crops:

Inter-cropping of groundnut in *bajra* and cotton, summer groundnut in sugarcane, soybean and sesame in cotton, sunflower in groundnut and safflower in gram and linseeds, can be taken up without adversely affecting the productivity of the main crops. In assured rainfall zone, sequential cropping of safflower *(in rubi)* after *moong, urad,* sesame or early maturing groundnut (Phule Pragati) in *kharif* can also be effectively taken up. Area under these cropping systems should be increased so as to increase the overall oilseed production.

3) Increase in Area under sunflower:

It was introduced in the country as well as in the state of Maharashtra. Due to its suitability as a mid-season correction crop, photo-insensitiveness, drought resistance, earliness in maturity and availability of quality seed (due to operation of seed production project at Akola) this crop is again gaining importance particularly in drought prone areas in Osmanabad district and parts of Solapur and Ahmadnagar districts. There is considerable scope for increasing area under this crop in transitional and scarcity zones of the state. Its area can also be increased in assured rainfall zone by growing it as a mixed/inter-crop with other *kharif* crops. In these zones, supply of quality seed and assured market rates are essential for increasing its area and production.

1.8 General Recommendations for Increasing Oilseed Production:

General recommendations regarding varieties, suitable package of cultural practices, plant protection measures, cropping system, etc., for different oilseed crops are given below.[11]

1) Groundnut:

a) Use of improved high yielding varieties, viz. Phule Pragati, M-13 and TMV-10 in different parts of Maharashtra are given below:

i) Phule Pragati:

Whole of Maharashtra for *kharif* season (June-September).

ii) M-13:

Marathwada and Ratnagiri for kharif and summer season and the districts of Solapur, Pune and Ahmadnagar for summer season (March – August).

iii) TMV-10:

Sangli and Kolhapur districts for *kharif*.

b) Spacing of 30 cm between rows and 10 cm between plants with 110 to 120 kg. seed/hectare for bunch and 45 x 10 cm spacing with 80-90 kg. seed/hectare for spreading varieties is recommended.

c) A fertiliser dose of 20 kg. N+40 Kg P_2O_5/hectare is recommended both for bunch and spreading types.

d) To avoid the risk of groundnut cultivation due to unpredicted dry spells at pegging and pod development and to distribute the risk partly below ground and partly above ground, sunflower mixture in groundnut crop in the proportion of 4 to 6 rows of groundnut to 2 rows of sunflower is recommended in drought prone area of Maharashtra. Sun-flower being more droughts tolerant gives some yield in the event of failure of groundnut crop due to drought. Groundnut-sesame mixture (4:2) is also recommended in Vidharbh.

e) A boron spray of 0.1 ppm in the form of boric acid (0.3 gm in 500 litre of water) at the rate of 500 litres/hectare at 30 to 35 and 50 to 55 days of crop for lighter type of soils help enhancing pod yield.

f) Cereal-oilseeds or pulse-oilseeds or oilseeds-oilseeds inter-cropping to minimise risk and increase production.

g) Seed treatment with agroson GN 2.5 gm/kg. or thorium 5 gm/kg. of seed is recommended as a seed dresser for the control of seed borne diseases.

h) Application of proper *Rhizobium* culture to seeds helps to increase the yield by about 5 percent.

i) For the control of *tikka* disease, dusting of sulphur dust 300 mesh 15 kg./hectare 5 to 6 weeks after germination and second dusting 15 days after first are recommended. Spraying 2 kg. wettable sulphur 80 W.P. or spraying of dithane M0-45 (0.25 percent) will also take care of both *tikka* and rust. Bavistin 0.05 percent + calixin 0.05 percent were also found effective for the control of *Cercospora* leaf spots and rust.

j) Spraying of dimethoate (0.03 percent), malathion (0.05 percent) methyl demeton (0.2 percent) and formothion (0.03 percent) is recommended for the control of groundnut aphids.

k) For the control of leaf miner 50 percent wettable carbary1 2 kg. in 500 litres of water or carbary1 10 percent dust 10 kg. + BHC 10 percent dust 10/Kg. hectare is recommended. It can also be mitigated by collecting the moths by using light-trap. For the control of white grubs, drilling of 5 percent dust at the rate of 65 kg./hectare in soil before sowing is recommended.

2) Safflower:

a) In sowing date trial carried out at Jalgaon, sowing on 1st October, gave the highest yield (1,924 kg./hectare) while delayed sowing on 1st November reduced the yield (1,057 kg./hectare) significantly. Hence, the sowing from 25th September to 7th October is recommended for Khandesh tract. Early sowing in early September results in incidence of *Alternaria.*

b) In the spacing experiment carried at Jalgaon, spacing of 45 x 20 cm has given the highest yield for both Tara and Bhima varieties.

c) On the basis of results of trial carried out at Jalgaon, a dose of 50 kg. N/hectare has been recommended for rain fed safflower in assured rainfall zone. Based on the results of trials at Solapur, a dose of 25 kg. N/hectare recommended for the scarcity zone depending upon soil fertility status.

d) In an experiment on method of application of fertiliser at Jalgaon, it was observed that the application of fertilisers at the time of sowing 10 cm below the soil surface and preferably 5 cm below seed level was the most effective (1,824 kg./hectare).

e) A rotation, safflower followed by *kharif jawar,* is recommended for general cultivation in the Khandesh tract.

f) Thinning of safflower, 10 days after germination or 20 days after sowing, gave significantly higher yield and the same has been recommended for general practice.

g) It is observed that the safflower crop does not require any irrigation after sowing provided sufficient moisture is available at sowing in medium.

h) In seed rate-cum-sowing date experiment, when the data were pooled over 3 seasons, differences in yield due to seed rate only were found to be significant. The seed rates, viz. 7.5, 10 and 12.5 kg./hectare yielded on par and were significantly superior to 5 kg. seed rate. Considering the risk of less moisture or high moisture conditions, 10 kg. seed rate/hectare is recommended as against 20 kg. seed rate recommended in the past.

i) Spraying of dithane M-45 (0.25 percent) or bavistin (0.1 percent) twice, controls *Alternaria* leaf spot disease of safflower.

j) Application of *Azotobacter* strains SF-2 and SF-15 to the seed before sowing may be recommended.

k) Early sowing (i.e. in the first week of October) is recommended for the control of aphids. Early sowing helps the crop to escape the attack of aphids.

l) BHC 10 percent at the rate of 20 kg./hectare, carbarry 1.5 percent dust at the rate of 20 kg./hectare, endosulfan 4 percent dust at the rate of 20 kg./hectare, quinalphos dust 1.5 percent at the rate of 20 kg./hectare, spraying of endosulphan 35 E.C. 715 ml or dimethoate (0.03 percent), i.e. 500 ml is recommended as these insecticides controlled aphid population significantly over control.

3) Sesame:

a) Phule Til Number 1 variety is recommended for general cultivation in the state of Maharashtra.

b) Application of 50 kg. N/hectare through split, i.e. 25 kg. N/hectare 3 weeks after sowing plus 25 kg. N/hectare 6 weeks after sowing is recommended for general cultivation of sesame crop.

c) Spacing of 30 x 15 cm was found to give the best economical returns.

d) Dusting of BHC 10 percent at the rate of 20 kg./hectare as and when the leaf roller is noticed is recommended for the control of leaf rollers.

4) Niger:

a) IGP-76 is recommended for general cultivation in Maharashtra state in place of N-12-3 and also recommended at all-India level. It gives 25 to 30 percent higher yield over N-12-3.

b) Line sowing at 20 cm row distance is significantly superior over broadcasting method and increases the yield by 128 percent.

c) Mid-August sowing is significantly better than July sowing and increases the yield by 20 percent.

5) Sunflower:

a) E.C. 68414, Morden and Surya have been recommended in Maharashtra state. The early variety Morden can be fitted well in multiple cropping system

under rain fed conditions in assured rainfall zone and under irrigated conditions in all regions of the state.

b) Groundnut cannot be sown due to late onset of monsoon in scarcity zone.

c) Spacing of 60 x 30 cm in heavy soils and 45 x 20 cm for medium to lighter soils is recommended.

d) Fertiliser application of 40 kg. N/hectare in western Maharashtra, Marathwada and Vidarbha is recommended. Half is to be dose of N is to be applied at sowing while the remaining half is to be applied at bud initiation.

e) Hand pollination of sunflower every alternate day during flowering period overcomes seed filling problem and is, therefore, recommended. It increased yield by 25 to 30 percent over natural pollination.

f) Protective irrigation at seed filling stage increases yield substantially.

g) Spraying of carbary1 0.2 percent followed by DDT 5 percent dust at the rate of 20 kg./hectare effectively control *Halitosis* and result in increased yield.

1.9 Proposed Crush Programme for Increasing Oilseeds Production in Maharashtra State:

1) To encourage summer groundnut cultivation in command areas by giving top priority over other cash crops and food crops. If all out efforts are made by different agencies it will be possible to bring area of about 3-4 lakh hectare under summer

groundnut. For this, it is necessary to give subsidised supply of

(a) Irrigation water and

(b) Seeds of high yielding varieties.

2) To encourage sunflower cultivation in drought prone areas.

3) To encourage safflower cultivation under limited irrigation wherever irrigation facilities exist.

4) To organise pilot project in oilseeds growing areas as done for wheat and sugarcane and to encourage cultivators to adopt improved production technology of oilseed crops.

5) To include oilseed crops under National Seeds Project so that breeder, foundation, certified seed production of high yielding varieties hybrids sufficient to cover at least 20 percent of area under oilseeds can be achieved every year.

6) To motivate oilseed cultivators to adopt improved technology of oilseeds production, viz. use of improved seed, optimum seed rate, spacing, application of fertilisers, timely adoption of plant protection measures through extension agencies like T and V.

7) To strengthen research on oilseeds particularly in

(a) storage,

(b) processing, and

(c) developing cheap implements for sowing, harvesting etc.

8) To fix remunerative support price well in advance.

9) To arrange for timely and assured supply of quality seed, fertilisers, pesticides and credit.

10) To organise plant protection campaigns on mass scale.

1.10 Edible Oil Industry in Solapur City:

Solapur, Latur, Amravati and Jalana these are the 4 major districts in Maharashtra producing 0.7 million Tonnes edible oil in Maharashtra. The oil mill owners are using modern heavy expellers for the extraction of oilseeds. These oil mills are facing the problem of changing crop pattern. Out of the total 1806 oil mills in Maharashtra 40% oil mills are in the above 4 districts. Out of the total existing edible oil in the state market 50% edible oil is being supplied by the oil mills of Solapur, Latur, Amravati and Jalana districts. Since last 10 years Solapur edible oil market is developing.

Vegetable oil is an essential commodity of daily consumption and extensively used as raw material for vegetable ghee and soap. Many factors are essentially responsible for the location of this industry in Solapur. The surrounding areas are suitable for the cultivation of groundnut, sunflower and safflower. Secondly, cheap labour is available in plenty. Thirdly, Solapur is a railway junction and well connected with the rest of the country. Fourthly, as it is a big city, banking and other commercial facilities are easily available and a ready market for consumption of oil exist automatically.[10]

Before the establishment of oil production by the expeller, the oil pressers were only in the form of small industries for the production of oil. It is true; production capacity of mill depends upon the number of expellers, and the size of the expellers. There are 2 types of expellers in use. One is known as a big expeller and other as a baby expeller.

During all, the previous years and especially during the preceding 10 years, oil mills have supplied edible oil for Solapur city. There is a special location M.I.D.C. for industries. However, there is

also an agricultural produce market committee and a large part of the area has been specially kept and maintained for the establishment of oil industries from the last 10 years. At present, there are 98 oil mills as productive units including 170 expellers, the big expellers are 152 and small expellers are 18 in Solapur city. There is 1 double chamber oil expeller and 80 tel-ghanis in Solapur city.

In 2006, the total population of Solapur city was 9,16,101. The city of Solapur is surrounded by many villages in the district. There are 11 talukas and 1089 villages in Solapur district. All these villages have been easily connected with respective talukas and city Solapur. Many citizens of Solapur, mainly the traders have deep outlook on the oil industries. Therefore, the oil Industries are functioning at present. Mainly these oil mills are under the private sector. These oil mills are established by sole trader who has no sound financial ability and also oil mills are established mainly under the form of organisation of a partnership by contributing the required capital and functioning on the basis of division of labour such as purchase, sales and marketing etc. These oil industries are under the head of small cottage and tinny industries. It is, however, true that these oil mills are not styled as heavy and big industries.

In city of Solapur, all these oil industries have not the same production capacity and also they do not have the same production machinery. Some oil mills are having expellers of 4 bolts and other 6 to 9 bolts and some other which are large by size of 12 bolts. Oil mills are not producing the same kind of oil from the same kind of oil-seeds. They produce different kinds of edible oil such as groundnut oil, karadi oil, sun-flower oil etc.

The population has been increased. This made to increase 0.0018 M.T. demand of oil in Solapur city. To meet the increasing

demand the oil mills are established in good deal of number and oil mill owners have undertaken this productive activity as one of the economic activities. Thus how, it has resulted to enlist the more oil mills at present. The oil industry has played an important role in the development of Solapur as an industrial place.

1.11 Oil and Oilseeds Economy:

Oilseeds occupy an important position in the Indian economy as they provide much needed proteins and energy to the human and livestock population and also earn precious foreign exchange to the country. They form raw material base for edible oil producing industries that possess a large employment potential.

The vegetable edible oil, a processed product of oilseeds, is one of the important protein and energy containing ingredients in the Indian food. Generally, all vegetable oils have the highest available energy value and they are the richest source of Vitamin E.

The oil meal or oil cake – a joint product – meets the major energy and protein needs of the large livestock population of the country.

oilseeds are annually cultivated over an area of 17 million hectares in India; constituting 9 oilseed crops, namely groundnut, rapeseed/mustard, sesame, linseed, castor, safflower, niger, soybean and sunflower.

Thus they claim the largest share (about 15 percent) of agricultural land next only to food grains and contribute about 10 percent of the gross national product.

Among the non-food crops, their share in the total average is more than 60 percent.

Linseed and castor come under non-edible use, while the rest are utilised for edible purpose. Besides oilseeds cotton seed is also being used for edible oil extraction purposes. However, the bulk of the country's edible oil production is derived from 2 major oilseeds, namely groundnut and rapeseed/mustard which together constitute about 85 percent of the total production of oilseeds in the country.

India produces a fairly good quantity of oilseeds in the total world production (Table 1.5). The oilseeds are also considered an important source of foreign exchange earnings for the country.

Table 1.5

India's Percentage Share in World Oilseeds, Area and Production (2007-08)

Sr. No.	Oilseed	Area %	Production %
1	Groundnut	38.25	33.02
2	Rapeseed/mustard	29.70	15.65
3	Sesame	36.23	24.68
4	Linseed	33.90	16.68
5	Cotton Seed	23.57	9.89
6	Castorseed	30.20	26.39
7	Safflower	49.8	19.94

SOURCE: FAO Production Year Book 2007-2008.

The production of 5 major oilseeds has increased from 54.53 lakh tonnes (average of 5 years) in the first plan to 89.65 lakh tonnes in fifth plan, showing an increase of 64.40 percent. This increased production is due to bringing additional area under oilseeds production and not through increased yield rates.

Table 1.6

Agricultural Pattern Seasonwise Crops of Solapur District in 2007-08

	Crop	Hectare
(a)	Jawar	669800
(b)	Wheat	54200
(c)	sunflower	70400
(d)	Pulses (Tur)	27800
(e)	oilseeds	61600
(f)	Bajra	34100
(g)	Others (Sugar cane)	14500

SOURCE: ABSTRACT Solapur District Statistical Dept. 2007-08.

Table 1.7

Production of Agriculture Crop of Solapur District in 2007-08

	Crop	Average Yield in Tonnes Qty./hectare
(a)	Jawar	4.00
(b)	Wheat	6.00
(c)	Sugarcane	160
(d)	Gram	3.50
(e)	Maize	3.20
(f)	Pulses (Tur)	4.00
(g)	oilseeds (Groundnut)	4.80

SOURCE: ABSTRACT Solapur District Statistical Dept. 2007-08.

The above table1.6 shows the area of agricultural land under the different crop. 61,600 hectare area of agricultural land is under the oilseeds crops. The table 1.7 shows the average per hectare production of different crops in Solapur district.

The above tables (1.6 & 1.7) show that the cultivators cultivating their land under the oilseeds crops. Therefore there is a

supply of oil seeds in local market in Solapur city. This is one of the reasons to establish edible oil production in Solapur.

But in the recent days the working of edible oil industry in Solapur city is facing some problems, therefore, the research work on the working of edible oil industry in Solapur city has given more importance.

1.12 Conclusion:

India is one of the important largest agricultural countries in the world. In the year 2007-08 the Indian population reached to 110 crore appx. An increasing population needs more edible oil in balanced food. The average required edible oil is 11 kg. per year but the Indian people are consuming average 9 kg. per year. There is a shortage of edible oil for consumption in India. India imports 5 to 6 million tonnes edible oil every year. The govt. of India is trying to avoid import of edible oil by boosting the oil mill production sector, and production of edible oilseeds through the different plans and programmes. Therefore the study of this research work is important.

In India, there are many states and the people of the different states have different taste. There is difference in consumption food also. According to their customs and taste, they consume different quantity of edible oil. The persons of Kashmir consume more oil than ghee. According to them oil is more potential for the physical health and beneficial than ghee. At Bengal and Tamilnadu states, people are using coconut as edible oil. However, it is true that in all most all in the states of India, the people are consuming the oil in the large quantity.

In India presently there are 9026 oil mills producing 6.6 million tonnes oil per year. Maharashtra is one of the important states in India producing oilseeds and edible oil. Out of total oil mills in India

14% i.e. 1150 oil mills are in Maharashtra. Out of 1150 oil mills in Maharashtra 40% oil mills are located in the 4 major districts namely Solapur, Latur, Amravati and Jalna. It shows Solapur is one of the important cities in the production of edible oil in India and in Maharashtra.

Since last 10 years the role of edible oil industry in Indian oil industry is developing and using new techniques and modern machineries for the extraction of oilseeds. The development of edible oil industry in Solapur city creates employment opportunities and motivates the cultivators to produce oilseeds.

At present, there are 98 oil mills as productive units including 170 expellers in Solapur city.

Maharashtra state is fourth in the production of oilseeds and acreage in India, whereas Madhya Pradesh is first in India. Though India has the largest area and production of oilseed crops in the world, India is not in a position to meet its entire requirement of edible oils indigenously.

Lack of adequate irrigation facilities for oilseed crops, poor adoption of improved technology of oilseeds production, Lack of improved varieties suited to specific conditions, Lack of suitable varieties for mixed cropping, Non-availability of quality seeds of improved varieties to farmers etc. are the reasons of low production of oilseeds in Maharashtra. Therefore the govt. of India and govt. of Maharashtra implementing different programmes to expand the area under oilseeds in agriculture sector in Maharashtra.

Solapur is one of the biggest cities in Maharashtra having an increasing trend of edible oil business. Since 10 years the edible oil industry in Solapur city is developing but at the same time facing different problems. Therefore the study of the working of this industry has given more importance.

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CHAPTER - II

REVIEW OF LITERATURE AND RESEARCH METHODOLOGY

2.1 INTRODUCTION:

In this chapter, we present the review of the studies made related to a critical study of the working of edible oil industry. These studies had made in various small scale and village edible oil industries and also in the field of agricultural sector particularly in the production of oilseeds. Various academicians, industrialists and organisations had made studies on the working of edible oil industry in Maharashtra and India.

2.2 REVIEW OF LITERATURE:

A brief review of these important studies in chronological way enabled us to understand the working of edible oil industry in India and Cities in Maharashtra.

REVIEW OF BOOKS, PH.D. THESIS, M.PHIL DISSERTATION, ARTICLES AND NEWS PAPERS:

2.2.1 REVIEW OF BOOKS:

1) Vijay Paul Sharma, Saradendu Patnaik, Hiren Tilak (2007)[1]:

Vijay Paul Sharma, Saradendu Patnaik, Hiren Tilak wrote a book named “Edible Oils and Oilseeds Economy of India” published by Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi in 2007, p.1-7. In this book they explained various aspects of oilseeds farming and economy of edible oils in India. In this book they analysed cropping pattern changes in selected states and factors underlying changes in cropping pattern. Further, they emphasize the current status and

growth behaviour of oilseeds in India such as groundnut, rapeseed, sesame, sunflower, safflower, soybean etc. In this study they observed one of the most important changes in the cropping pattern over the last 3 decades. In relative terms the share of cereals in the GCA has declined from about 61% in 1970-72 to about 51% in 2001 to 2003 indicating that increasing area under rice, and wheat fell short of decline in area under course cereals. The share of oilseeds in GCA increased from around 10% in 1970-72 to 13.6% in 1990-92 and then declined to 11.7% in 2001-03.

They analysed consumption expenditure of edible oils in India. Per capita expenditure on edible oil has increased at a faster rate than per capita consumption expenditure on food items and total consumption expenditure. As a result the share of edible oil in total consumption expenditure has shown a consistent increase in the 70's and 80's, this increase was more pronounced in rural than urban areas. In the 90s, this share witnessed a decline. Per capita consumption expenditure on edible oil in urban areas was about 1 and half times of rural areas, however, the ratio of per capita consumption in urban and rural areas showed a declining trend in the case of edible oils. In 1999-2000 the per capita total consumption expenditure of edible oil increased.

In this book they presented the effect of changing prices of oilseeds on the production of edible oils. Nominal prices of major edible oilseeds and oils experienced deceleration in the 90s compared to the 80s, whereas real prices of edible oilseeds and oils declined significantly in the 90s. The results of variability in edible oilseed prices reveal that inter-year fluctuations in nominal prices have marginally, increased in the 90s. In the case of oils, inter year fluctuations in prices have declined significantly over time which is

reflected in the low coefficients of variations ground the trend line in the 90s. The extent of fluctuating in monthly prices in the 90s for major oilseeds are oils in major markets varied crops and markets. Prices were generally higher in the festival months and harvesting months which shows that market intervention mechanism through procurement prices has not been able to stabilize edible oilseed prices. The National Agricultural Co-operative Marketing Federation of India (NAFED), the national level nodal agency for procuring oilseeds from farmers has not played its role.

This book raised the problems of an increasing consumption of edible oils with the low production. Demand for edible oils in India is expected to grow at 5-6% over the next 5-10 years because of income growth, population increase and changes in consumption pattern, while domestic output has been stagnant. The obvious questions that arise are –

- Will India achieve the goal of self-reliance in edible oils or will it continue to be the largest importer of edible oils?
- What various policy options are available to policy makers to protect the interests of both oilseed producers and consumers?

The study focused the need of technological change to make India self-reliant on edible oils. New location, specific – high yielding varieties, more coverage of oilseeds acreage under irrigation, appropriate pricing incentives and institutional reforms would be the components of this strategy. Investment in agricultural research and development is a key element and should be stepped up. The National Agricultural Research System should meet this challenge. Dissemination of technology is equally important and needs to be

strengthened through effective agricultural extension system. Extending oilseed cultivation to non-traditional edible oils, like rice bran oil, corn oil, cottonseed oil etc. needs to be exploited to boost India's oil output.

2) Gadgil D. R. (1965)[2]:

Gadgil D. R. in his study on "Solapur City Socio Economic Studies" published by Ghokhale Institute of Politics on Economics, Pune in 1965, emphasised on the factors which are essentially responsible for the location of edible oil industry in Solapur. The surrounding areas are suitable for the cultivation of groundnut, sunflower and safflower. Secondly, chief labour is available in plenty. Thirdly, Solapur is a railway junction and well connected with the rest of the country. Fourthly, as it is a big city banking and other commercial facilities are easily available and a ready market for consumption of oil exists automatically.

This study highlighted the genesis of edible oil industry in Solapur city, also showed the suitable socio economic conditions for the development of edible oil industry in Solapur city.

This study analysed the changing edible oil process and production.

i) Village ghani

ii) Hand Pressed or Hand Screw

iii) Rotary Mill

iv) Expellers

This study emphasised on the detailed process of edible oil extraction by village ghani in the beginning period in Solapur. This study also emphasised on the development of oil extraction in detail

in further period from village ghani to expellers. Village ghani is simple in design, locally made and entails small initial investment. It is easy to work and is thus able to hold its own in the villages in spite of the keen competition that it faces from the power mills. It is for excellence and important cottage industry providing employment to a large sector of the agricultural production.

The writings of the Gadgil D. R. also emphasises on the details about the oil extraction through rotary mills and expellers showing the minimisation of cost of production and to curtail unemployment in local areas.

This study also emphasised on increasing consumption of edible oil, opportunity of higher production of edible oil and suitable condition for cultivators to increase the production and productivity of oilseeds.

3) Nannapanavaru S. R. (1994)[3]:

Nannapanavaru S. R. in his study book on "The Oil and Oilseeds Economy of India" published by Himalaya Publication House in 1994, highlighted on the various aspects related to Oil and Oilseeds Economy of India. This study analysed the various sectors related to the subjects such as production, consumption of edible oilseeds and the comparative analysis of domestic supply of oils with imported oils. The study also presented the current situation of oilseed production in India in different states and the behaviour of oilseed production particularly groundnut, mustard, sesame and linseed etc. This study showed the government efforts and the plan performance to boost oilseed production and the strategy implemented to boost oilseed production in India.

This study analysed the trends in per capita consumption of

edible oil and estimated the elacities of demand with respect to own price, prices of substitutes and income. This study analysed the details about linseed oil which is mainly used for industrial purposes. It is also used for cooking purposes in India and U.S.S.R., Poland, Hangeri and a few other countries. It is used extensively as a drying agent in a manufacture of paints and varnishes. It is also used in the manufacture of soft soaps, furniture polish, lubricants, plastics, printing and for other purposes where a drying agent is required. The study showed harvesting and peak marketing seasons of linseed oil in the states like Uttar Pradesh, Bihar and Maharashtra where the crop is cultivated as a mixed crop with wheat, grass, barlin and rubi jawar.

4) Persaud Suresh and Landes Maurice R. (2005)[4]:

Persaud Suresh and Landes Maurice R. in their study on "The Role of Policy and Industry Structure in India's oilseed Markets" published in Economic Research Service/USDA in 2005, tried to analyse and compare oilseed production in India with production countries in the world. They also analysed consumption and import of edible oil in India. This study highlighted on increasing edible oil consumption in India by more than 6% annually. The present consumption of edible oil i.e. per capita consumption (9.6 kg.) of India remains below the world average of 11.1 kg. This study showed that edible oil used for the different purposes rather than the food preparation, therefore, India has to import edible oil every year.

This study analysed edible oil trade policy from 1970 to 1994. In this period most edible oil imports were conducted by the government's state trading corporation with annual import, quantity determined by an inter-ministerial committee based on domestic supply, demand and balance of payment conditions. Imports were

particularly restricted during 1989-94 a period corresponding with the Technology Mission on Oilseeds a government initiative to boost self-sufficiency in edible oils. Since 1994 when India began conforming to WTO rules and replacing quantitative trade restrictions with tariffs, oil imports have been placed under Open General License allowing unlimited imports by private traders.

The study analysed the trends of oilseed production in area and yields. Area planted to oilseeds has generally responded to changes in domestic prices associated with changes in trade policy and in price policy for competing crops. Growth in oilseed area accelerated and grave faster than the world average during 1980's, when stricter controls on imports of oilseeds and products strengthened oilseeds prices related to competing crops. However during 1990 to 2002 a period that includes the liberalisation of oil imports domestic prices of oilseeds and oil declined related to other crops and oilseed area growth slowed significantly. However government minimum support prices (MSPS) for wheat and rice, important competing crops for oilseeds in some regions also slowed the growth in oilseed area during the late 1990. Further the study showed the measures implemented by the government to boost the oilseed production in India.

5) Pavaskar Madhoo (1979)[5]:

Pavaskar Madhoo, in his study on "Demand for Oils and Oilseeds", Bombay: Popular Prakashan Pvt. Ltd., 1979 attempted to estimate demand for oils and oilseeds for the years 1980 and 1985. His estimates of demand for major oils and oilseeds in India are essentially in the nature of projections based on time series data covering the period 1960-61 to 1974-75. The study aims at projecting the demand for domestic consumption, vanaspati

production and industrial purposes under various assumption relating to changes in population, income and prices.

6) George P.S., Shrivastava U.K., and Desai B.M. (1978)[6]:

George P.S., Shrivastava U.K., and Desai B.M. in their study book on “The Oilseeds Economy of India”, Delhi: published by The Macmillan Company of India in 1978 have analysed the supply projections of major as well as minor oilseeds for 1980-1985 based on post performance covering the period 1954-55 to 1973-74. The supply of oilseeds in 1980 and 1985 were determined by the area under oilseeds and the yield levels achieved. In projecting the area under the crop and the yield levels, 3 broad approaches were used:

i) trend method;

ii) analytical models; and

iii) judgments based on the current developments.

To estimate the trends, linear, semi log, log inverse and double log functional forms were used.

In analytical models, it was assumed that the area under oilseeds was determined on the basis of the relative profitability of oilseeds and the total cultivable area at the farmer’s disposal. In the absence of expected relative profitability, past experience through lagged variables was used. The general models used for estimating acreage responses were explained by gross return of the oilseed gross return of the major competing crops, net cultivable land, irrigated area under the crop, rainfall and trend variable yield responses were project by taking into account the availability of improved technology and the use of intensive cropping practices.

In the case of newly introduced crops such as sunflower, soybean and minor oilseeds of free origin, the projections were made on the basis of an assessment of factors like current development activities the chance of success in these activities etc.

Since there have been violent fluctuations in prices as well as yield levels of oilseeds, price risk and yield risk could have been included in explaining the acreage response relations. Market clearance and price variation aspects are also not covered in the study.

7) George P.S., Shrivastava U.K., and Desai B.M. (1978)[7]:

George P.S., Shrivastava U.K., and Desai B.M. in their study book on "The Oilseeds Economy of India", New Delhi: published by The Macmillan Company in 1978, p-54 have pointed out that the slow change in the use of improved seeds in the cultivation of groundnut is largely due to –

i) Marginal difference between yields obtained from local/traditional seeds and improved seeds;

ii) high cash cost of groundnut seeds on account of high seed rate;

iii) low multiplication ratio in groundnut seed production; and

iv) inadequate resources for seed multiplication.

8) Aneja R. P. (1991)[8]:

Aneja R. P. in his study "Oilseed and Vegetable Oil Economy of India" tried to examine the impact of government policies and programmes on the production of oilseeds in India. The study highlights area, production and yield of edible oilseeds in India from 1970 to 1991. The study also highlighted the production of oilseeds

in India in kharif and rubi season particularly groundnut, sunflower, safflower, mustard, linseed, sesame, soybean etc. Further the study analysed an increasing trend of cultivation of oilseeds in the different states in India particularly Andhra Pradesh, Karnataka, Maharashtra and Gujrat.

This study analysed the fluctuations of oilseeds prices in Indian Market and further showed the impact on edible oil production in India.

This study also observed that differential tax structure across states/Union Territories has laid to massive evasion of taxes on edible oil trade through interstate transpassing. Oils are sent to consignments to the states where taxes on the sale of edible oils are lower than the organising areas. The practice of transporting more quantity on permit for single load would have to be gains. This study enlightened hedging and futures trading by producers and processors facilitating better source allocation and planning of production sales, processing and storage patterns. However, for the effective functioning of futures market prevalence of 2 conditions is necessary. First, the differences in the prices across commodity spot market should reflect only the differences in the costs accruing on account of space time and form utilities viz. equal minimum transporting storage and processing costs respectively. Second, all information on prices, demand and supply should be transparent, accessible and uniform in terms of quantity, quality, taxation, processing etc. Instead of addressing these requirements the government has banned futures trading in edible oilseeds which have resulted in formation of illegal forward market in many important trade centres like Rajkot, Jamnagar, Adoni etc. In the absence of near perfect spot markets and near perfect information

futures trade would only lead to inefficient gamble on the prices of the commodity. Further, the failure to have an authorised moderator would potentially lead to the losses of weaker players. Similarly, the failure to form an integrated forward market for the commodity would lead to region based concentration of power in the commodity.

2.2.2 REVIEW OF PH.D. THESIS:

1) Nannapanavaru S. R. (1994)[9]:

Nannapanavaru S. R. in his unpublished Ph.D. thesis entitled "The Status and Prospects of Oilseeds in India", (pp. 5-6, 54,110) in 1994, exposed that India's agricultural performance has been quite impressive in the case of food grains as a result of which India has attained self-sufficiency. But the story in case of oilseeds is different. The domestic production during 1971-72 to 1982-83 increased at an annual growth rate of 1.5 percent only which is much lower as compared to 2.5 per cent growth rate of food grains as well as 2.2 per cent growth rate of population. Oil consumption also increased over time owing to higher growth rate of demand mainly due to development of socio-economic status of weaker sections of society as a result of various poverty alleviation programmes. In this context, an overview of the performance of oilseed economy acquires significance in India's aim to achieve self-reliance in production of oilseeds by 2000 A.D.

It is observed from various studies that, it is necessary to enhance production of non-cultivated oilseeds also along with cultivated oilseeds in order to make the proposition more feasible. Besides, an in-depth study is needed to understand the potential of other sources from where edible oil can be tapped and what role the private and public industrial units can take in the process of tapping oil from non-conventional sources in the background of the present

industrial liberalization policies. Considering the progressive increase in demand of non-edible oil, owing to industrial development in the country, demand of vegetable oil is also increasing exorbitantly and as such, if proper planning for non-edible vegetable oil is not done simultaneously, a sizable amount of edible oil may be diverted to meet the industrial requirements thereby causing further shortage in edible oil supply. Therefore, it is also felt that while improving the production of edible oil there should not be any slackness towards production of non-edible oil so that it is adequate to meet the requirements of non-edible oil for industrial purposes.

2) Jhala M. L (1978)[10]:

Jhala M. L. in his unpublished Ph.D. thesis on “Supply and Demand Aspects of Edible Oilseeds and Oils in India 1951-71”, Ahmedabad submitted to Gujrat University in 1978, has attempted to explore quantitatively the supply and demand relations pertaining to edible oilseeds and oils economy of India in a classical supply demand framework. The analysis was done for groundnut, rape/mustard, sesame, coconut oils and vanaspati on the basis of time series data covering the period 1951 to 1971. The study examined both single equation approach and simultaneous recursive type model at a specific edible oil level. It was assumed that acreage response was the same as the output response and Nerlovian partial adjustment model was used to explain the supply response of acreages for oilseeds. This was explained by farm harvest price, lagged yield, rainfall during sowing period and lagged acreage under the crop. In the case of groundnut for many states the negative price response was found despite groundnut being a

commercial crop. The agro-climatic factors especially yield and rainfall, were found influencing the groundnut acreage in the country.

The static demand relation linear in logarithm has been used to explain the *per capita* consumption of individual oil. This was explained by the real wholesale price index *per capita* real income and trend variable. The time series data on *per capita* consumption were derived on the basis of the production approach.

Thus, it is not the equality of supply and demand that explains fully the pricing mechanism of oils and oilseeds in the market. This requires a separate price equation which is behavioral relation incorporating oil millers/traders role thinking that they have 2-fold economic function, viz. to bring the supply and demand into contact and to use their market influence to regulate price of oils and oilseeds.

3) Modi C. P. (1987)[11]:

Modi C. P. unpublished Ph.D. thesis on "Problems and prospects of Edible Oil Industries in Gujrat" submitted to Sardar Vallabhabhai Patel University, Gujrat in 1987. Modi C. P. in his research work analysed that though the Gujrat state is top in India in the production of oilseeds particularly groundnut but then also the edible oil industries in the state are facing number of problems they are –

i) Problem of export of edible oils, oils cakes and by-product;

ii) Problem of competition with oil extraction solvent plants;

iii) Industries in Gujrat are facing the problem of restrictions laid by the state govt.

iv) Problem of changing cropping pattern in the state.

v) The empirical study of market structure of edible oil industry with reference to groundnut oil market in Gujrat confirms that characteristics of mixture of different market systems are found in this market. In the opinion of different sample groups, producers and middle businessmen, wholesale and retail dealers and different groups of consumers, market system in edible oil market is a mixture of different markets. All the 4 market systems; perfect competition, imperfect competition, monopolistic competition and oligopoly have their own place in the entire edible oil market.

vi) Groundnut telia oil market is very close to perfect competition. There is only vegetable price difference in wholesale level and a little more price differential at retail level. There differential - indicate there is also an element of imperfect market in edible oil industry. The market of branded double filtered groundnut oil which is sold at higher prices (with certain premia over telia) can be regard as situation of monopolistic competition. Advertising and selling costs also are used to influence the markets of branded varieties of oil.

2.2.3 REVIEW OF M.PHIL. DISSERTATIONS:

1) Patel R. P. (1992)[12]:

Patel R. P. submitted his unpublished M. Phil thesis on "Problems of Edible Oil Industry in Saurashtra" to Sardar Vallabhbhai Patel University, Gujrat in 1992. Patel R. P. selected 45 oil millers as a sample oil mills for the study. This study consist the information and statistical data collected by traders, co-operatives, commission agents and brokers related to the oil mill business. This study focused the basic and general problems of edible oil industry in Saurashtra such as –

i) Idle capacity and scarcity of raw materials.

ii) Price fluctuations

iii) Losses and closing of firms

iv) Adulteration in oil

v) Government controls

vi) Uncertain and unstable government policy

vii) Heavy tax burden

viii) Modernization of Mills

2) Bhave Priyadarshini Uday (1998)[13]:

Bhave Priyadarshini Uday submitted her M.Phil. thesis on “A Study of Groundnut Oil Industry in Sangli to Shivaji University, Kolhapur in 1998. This study analysed the present situation of edible oil industry in Sangli. The aspect of the study was to present processing, production, sale, market situation and problems of this industry. This study analysed an increasing cost of production and competition with big size oil extraction plants. For this study the traders, businessmen, wholesale and retailers were interviewed and pointed out the difficulties before the oil mill owners.

3) Hallur S. C. (1992)[14]:

Hallur S. C. unpublished M.Phil. thesis on “The Problems and Prospects of Edible Oil Industry in Bijapur” submitted to Karnataka University, Bijapur in 1992. This research work highlighted the socio-economic reasons are fast developed the edible oil industry in Bijapur. The study emphasised the present situation of the edible oil industry through the 32 sample oil mills. In the present situation this industry is facing number of problems were mentioned and the suggestions were made for the further sound development of this industry.

The findings of this study were related to the finance, purchase of oilseeds, sale of oilseeds, process and production, employment of skilled labour, location and the government policies. To overcome the difficulties some general suggestions were made to develop production and marketing system of edible oil business for strengthening this business in Bijapur.

2.2.4 REVIEW OF ARTICLES:

1) Singh R. B. (2002)[15]:

Singh R. B. in his study on "Situation and Outlook for World Supply and Demand of Oils, Fats and Oil Meals" in the Article – IARDC, Research and Technology Development Division, FAO Hqrs, 00100, Rome, Italy, enlightened on assessment of the situation and outlook for 1992 for all edible oil, soap fats/oils and oil meals, to provide the general framework for supply/demand prospects for different oil/meal sources and necessary production and distribution adjustments in India.

This study showed in contrast to fats and oils, oil meal prices, already low in 1990 after having declined for 2 years, edged even lower in 1991. With the weakness of U.S.S.R. demand a major influence resultant downward pressure of prices of oil meals of vegetables origin was largely offset by the demand. Shift from fishmeal which was in short in supply and the price of which averaged 15%, 15% higher in January-September, 1991 than in 1990. Overall international market prices in 1991 compared with 1990 as measured by the FAO Dollar price, indices averaged 5% higher for fats and oils but 1% lower for oil meal. Because of this stronger U.S. Dollar, the FAO indices in terms of imports, currencies were 9% higher for fats and oils and 2% higher for oil meals.

Singh R. B. tried to analyse the import prices of selected oilseeds, oils and meals in his study. And also analysed world supply/demand balances of edible/soap fats and oils. Overall this study analysed the situation and outlook for world supply and demand of oil fats and oil meals which help to study comparison with Indian oilseed and oil production position.

2) Narwade S.S. and Bhise B.B. (Oct-Dec, 2008)[16]:

Narwade S.S.and Bhise B.B. wrote an article on "Growth and Instability of Oilseeds in Maharashtra" published in Arthsamvad in October-December, 2008, pp-225-229. They presented the adverse effect on Indian economy by an increasing trend of importing edible oils. In 1992-93 the share of India in the production of oilseeds was 10% of world's oilseed production. But then also to overcome the difficulty of consumption of edible oil India is importing edible oils from 1997. Further, they explained the policies implemented by the Government of India to boost the production and productivity of oil-seeds. In 1968 a special Oilseeds Technology Commission was established. This Commission recommended the plan to expand the acreage under the oilseeds crops, irrigation schemes, crop protection projects in 180 districts. This article analysed the state of the production of oilseeds in the different districts in Maharashtra during 1981 to 2000-2001. This showed the production of oilseeds in Maharashtra decreased except coconut and castorseeds.

This article concludes the provisions should be made by the Government of Maharashtra to expand the area under oilseed crops. For this purpose the government has to implement some schemes to motivate to the farmers to increase the production and productivity of oilseeds.

3) Nawab Ali[17]:

Nawab Ali in his article namely “Oilseeds in Asia Pacific About Diversification of oilseeds and their By-products towards Food uses in India” published by Central Institute of Agricultural Engineering, Nabibag, Berasai Road, Bhopal (pp-140-147), showed food potential, pulses and oilseed growth in India, average protein contents in various oilseed meals, production and productivity of major oilseeds in India and percentage of oil recovery from various oilseeds. The study analysed percentage of direct human consumption of oilseeds and percentage of oil extraction of oilseeds in 1992. This showed the availability of oilseeds for oil extraction. This article entitled the present status of utilisation of oilseeds in India.

On an average 7%, 8% and 8.5% of the total production of 7 edible oilseeds in India are used for seed direct human consumption and oil extraction. Oilseed cake/meal is also used for human consumption in the form of flour protein concentrates texturised vegetable protein.

Oilseeds are processed to separate oil from the protein rich residual cake/meal. The technology employed particularly in relation to hygienic control determines whether the extracted oil meal is to be used as food, animal feed or fertilizer, whether the oil is to be extracted by pressing solvent extraction or by a combination of the both, the seed is usually first cleaned, cracked, flecked and cooked to rupture the cell walls, reduce oil viscosity and increase the rate of diffusion. In screw press extraction, pressure is kept as low as possible to avoid high frictional temperature with resultant damage to both oil and residual cake. A good press cake will be dry, with moisture content below 6% and relatively free from heat damage.

Normal hexane is the solvent universally used for vegetable oil extraction. The solvent percolates through the bed of flaked oilseed and the dissolved oil is eventually recovered by evaporating the hexane in several stages by direct and indirect steam heating, the second stage after under vacuum. The critical features of oilseed extraction are –

- Efficiency of oil recovery both quantitatively and qualitatively expensive, tonic and flammable substance and
- The quality particularly the hygienic and nutritional quality of residual cake meal.

4) Vandenbore R. J. (1966)[18]:

Vandenbore R. J. in his study on ”Demand Analysis of the Markets for Soybean Oil and Soybean Meal”; “Journal of Farm Economics”, Vol. 48(4), Part-I, 1966, pp. 920-34 developed a simultaneous equation model of the soybean economy for the United States for the period 1948-1964. This study was mainly concerned with an analysis of the soybean sector through an econometric study of prices, quantities demanded and exported. The estimates of the structural parameters of the model were obtained by the 2-stage least squares method. Supplies of meal and oil for all uses were assumed to be fixed at harvest time. Stock relationships for meal and oil were introduced to remove this assumption with respect to the availabilities for domestic consumption and exports. The estimated domestic demand for oil and meal was observed to be inelastic, the estimates of elasticities being -0.45 and -0.28 respectively. However, the price elasticities of demand for meal were less reliable than those of demand for oil. The author concluded that annual increase of more than 30 million bushels is

necessary to cover the needs of the United States, Western Europe, Japan and Canada if prices are to remain relatively constant. The supply behaviour and supply responses of producers to various factors which could have given a more realistic picture of the soybean economy were not analysed in the study.

5) Sharma V. V. (1969)[19]:

Sharma V. V., in his writings on "An Analysis of the Markets for Vegetable Oils in India, 1947-1961", "The Indian Journal of Economics", Vol. 50 (1997), 1969, pp.145-60, has formulated a simultaneous equation model containing 11 relations for Indian vegetable oils economy on the basis of time series data covering the period 1947-64. Three relations were constructed for each component of demand of peanut oil, namely, demand for direct liquid consumption, demand for vanaspati and export demand. The demand for peanut oil for food was hypothesized as negatively related to the prices of peanut oil and positively related to the prices of mustard oil, sesame oil price and disposable income. The demand for peanut oil in vanaspati production was postulated to be inversely related to the prices of peanut oil and positively related to the prices of competing oils like sesame and cotton seed oils and to the price of vanaspati. The export demand function of peanut oil was hypothesized as negatively related to Indian peanut oil price and positively related to oil prices in foreign countries.

In the supply relationship, the quantity of peanut oil was postulated as a function of the prices of joint products – oil and oil meal and the level of technology characterised by the industry. Similar equations were described for sesame, mustard and cottonseed oils.

The relations were estimated by OLS, 2 SLS, unrestricted least squares reduced form and 2 SLS reduced form methods in log linear forms. The price elasticity of demand for peanut, sesame and mustard oil was -0.45, -0.53 and -0.39 respectively and income elasticity was 1.42, -0.03 and 1.40 respectively. The results of supply analysis revealed that mustard oil had the highest price elasticity of supply (0.65), followed by peanut oil (0.60), cottonseed oil (0.39) and sesame oil (0.18). The results of demand and supply analysis indicated that both demand and supply were price inelastic, liquid consumption of vegetable oils was more responsive to changes in income than to changes in prices. On the basis of these results, it was concluded that in times of short supply of oils, the sufferer will be the low-income householder.

6) Swaminathan M. S.(1981)[20]:

Swaminathan M.S., Member, Planning Commission, in his writings "Boost to Oilseeds Production Programme – Planning Commission Recommendations"; "Agricultural Situation in India", Vol. 36(6), September, 1981, p. 499, has pointed out that yields per hectare of most of the annual oilseed crops can be increased by 25 per cent with the current available varieties and levels of technology. This is largely because of current negligence and improper handling of the oilseeds sector.

2.2.5 REVIEW OF NEWS PAPERS:

1) Krishnan (2000)[21]:

Krishnan in his article published in Hindu Business Line on 26.11.2000 emphasized his views about the edible oil in India particularly expansion in demand, healthy volume, growth, import, the domestic oil and oilseed production. In his writing he pointed out that after globalisation the agro-based industries are developing and

the numbers of edible oil companies are increasing in the industrial zone in India. This writing highlights an increasing need of edible oil in India and also an increasing import of edible oils. Further, it states changing government policies about the importing edible oils.

In this writing it is stated about straddlings price points. The mushrooming of regional breeds has also forced the national players to launch specific products targeted at the lower price points. Both Agro Tech Foods and Godrej Foods now have a portfolio of brands straddling different price points. While Godrej Foods has Godrej Cooklite, Godrej, Sunflower oil and Godrej Shakti targeted at the premium, middle and mass market respectively, Agro Tech Foods has Sundrop, Crystal and Real Gold in the corresponding categories. The national players have entered into sub-contract manufacturing arrangements with regional refiners for that purpose and prices on lower end products are revised frequently in tune with local market conditions.

2) Bipul Chatterji, Parashar Kulkarni (2004)[22]:

Bipul Chatterji, Parashar Kulkarni in their article published in Hindu Business Line on 17.08.2004 expressed their views about the consumption, import of edible oils. This article reveals that India is the World's largest consumer of edible oils, importing approximately 50 per cent of its requirement. Until 2003, higher import duties in refined edible oils hiked the prices of imported products to a higher level than the domestic product. While the subsequent scaled-down import duties on palm oil saw a surge in imports in June 2003, the duty on crude palm oil remained unchanged. This and the difference in excise duties on edible oils are anomalies to be rectified if consumer's and industry's interests are to be protected.

3) Utpal Sengupta President, Agro Tech Food (2003)[23]:

Utpal Sengupta, President, Agro Tech Food in his writing published on 22.10.2003 in Hindu Business Line emphasised on the fluctuating prices of edible oilseeds, import of edible oils and about the production of branded edible oils and the changing oilseeds cropping pattern in India.

This expressed that the farmers are not getting remunerative prices for sunflower seeds, which is pushing him to produce other crops such as pulses and minor millets. At the same time, imported oils are cheaper and worsening an already complex issue. For the medium-to long-term, the govt. will have to join hands with corporate and play a major role in enthusing farmers to grow sunflower seed. The solution is higher productivity and guaranteed income to the farmer and simultaneously making the project viable for corporate competing against the low prices of importing oil.

Conclusion:

In this chapter review of literature has been completed. Ph.D. thesis, M.Phil. dissertations, government reports, research articles and papers are reviewed. On the basis of this review, the researcher studied the variables in relation to working of edible oil industry in Solapur city.

2.3 RESEARCH METHODOLOGY:

The objective of this chapter is to describe the methodology adopted for the present investigation including selection of the problems and objectives of the study together with source of data, sample selections, period of study, scope and significance of the study and statistical tools used for data analysis.

Food is the basic necessity of human being. It is produced by cultivating the land. Agricultural crop is divided into 3 categories.

(a) Food grains - it includes cereals, millets, pulses, vegetables and fruits.

(b) Non-food grains – includes, oilseeds, sugar cane etc.

(c) Fibre crops – cotton, jute etc.

Oil is one of the important factors in balanced food. Oil provides facts necessary for human being. Edible oil is produced by crushing the oilseeds. Groundnut, sesame, linseed, sun-flower, safflower etc. are the sources of edible oil.

In India, there are many states and the people of the different states have different taste. There is difference in consumption food also. According to their customs and taste, they consume different quantity of edible oil. The persons of Kashmir consume more oil than ghee. According to them oil is more potential for the physical health and beneficial than ghee. At Bengal and Tamilnadu states, people are using coconut as edible oil. However, it is true that in all most all in the states of India, the people are consuming the oil in the large quantity.

2.3.1 Present Position of Oil Mills in India and Maharashtra:

In India there are 9026 oil mills producing 6.6 million Tonnes oil per year. The requirement of oil per year is 10 million Tonnes. So to meet the increased demand, since last 10 years the number of oil mills increased in some states particularly in Gujrat, Karnataka, Andhra Pradesh and Maharashtra. To meet the increased demand for edible oil in India, the oil mill owners established a modern heavy machinery and modern processing technology. Out of the total 6.6 million Tonnes edible oil production in India, Gujrat state contributes

30%, Maharashtra 20%, Karnataka 10% and the contribution of other states is 40%. The total production of edible oil in Maharashtra is 1.3 million Tonnes.

Each segment of India's oilseed processing industry has small capacities and low technical efficiency compared with other major processing countries. The structure of the industry has been heavily influenced by the government policies that have, regulated plant scale, capital intensity and oil marketing, provided incentives for building new capacity and prevented imports of oilseeds for processing.

The Indian oil mills include 2 major processing technologies.

(1) Traditional mechanical crushing or expelling, used for oilseeds with relatively high oil content.

(2) Solvent extraction for processing oilseeds and expeller cake.

The traditional crushing industry has 2 segments -

(A) The very small-scale "ghanis" and small scale expellers.

(B) The processing industry also includes an oil refining sector, which primarily refines domestic solvent-extracted oils.

Solapur, Latur, Amravati, and Jalana these are the 4 major districts in Maharashtra producing 0.9 M.T. edible oil. In recent days to meet the increased demand of 0.3 M.T. oil in Maharashtra oil mill owners are using modern, heavy expellers for the extraction of oilseeds. These oil mills are facing the problem of changing crop-pattern. Out of the total 1150 oil mills in Maharashtra 40% oil mills are in the above 4 districts. Out of the total existing edible oil in the state market 50% edible oil is being supplied by the oil mills of Solapur, Latur, Amravati and Jalana districts. Since last 10 years

Solapur edible oil market is developing but at the same time Solapur edible oil production sector is facing the following problems –

The supply of electricity to city Solapur is mainly from the “Koyana Project”. Often it has been noticed that, there is a need of continuous electric supply. The supply of power is with many breaks during the period of the working of the oil mills.

There is also a problem of a shortage of raw materials. During the season the oilseeds are supplied in the market but they are also below standard. But in out-season; there is a shortage of oilseeds.

A superior expeller is in use in Mumbai, which keeps only 5.5% oil in oil cake instead of 7% to 8% which is common with expellers in Solapur.

The buildings of oil mills are not well built because of lack of capital. Small oil mill owners did not use borrowed capital, and their own capital was also limited, so they did not stock the required oilseeds.

Except the boiler-attendant and the fitter, other workers who are unskilled, are employed on daily wages.

The oil mills in Solapur are also facing the problem of sound market of oilseeds, oil and oil cake.

Since 5 years oil mills in Solapur are facing the problem of competition with solvent extraction plant located near city Solapur.

At present oil mills in city of Solapur are under the form of small scale Industries. What is the demand for oil and how much is the supply? How many producers are there? What are their problems? What are the methods of extraction of oil from oilseeds? How oil and oil cakes are sold? What is the financial position? What is the margin of profit?

All the above problems are pinching the industry.

2.3.2 Title and Scope of the Study:

The title of the study is “The Working of Edible Oil Industry in Solapur City is not Satisfactory during 1991 to 2008”.

Figure 2.1

Map of India

Edible oil market is composed of different types of edible oils such as refined and non-refined. The non-refined oils are produced by the private oil mill owners and the refined edible oils are produced by the edible oil companies. Out of different types of edible oils mainly groundnut, safflower and sunflower are produced by the private oil mill owners. The Solapur edible oil market consist the maximum edible oil produced by the private oil mill owners. So the research work is mainly related to the private oil mill owners.

The study is an effort in the next context of the edible oil business. After 90s the business faces more serious problems. It is necessary to evaluate the working of the traditional edible oil business. For this purpose the economy of the edible oil industry and trade needs to be deeply analysed. The working of edible oil production in Solapur and related problems are the main focus of the study. The title of the study speaks items to trace importance of oil industry in the economy of Solapur, to study the production of edible oil, its production, consumption and inflow – outflow of the edible oil in the city. It aims to analyze the problems and reasons responsible for the cris in the market. Some remedies are suggested at the end of the study. The present study attempts to examine indices the working and problems of the edible oil industry in Solapur. It seeks to examine these problems to the point of view of oil millers and middlemen. Different varieties of edible oil like groundnut oil, safflower oil, sunflower oil, soybean oil etc. are produced and consumed in the city. However, groundnut oil, safflower oil, sunflower oils are the major variety at the centre of Solapur edible oil market. Therefore, study concentrates on the working of these edible oils industry in the city.

The issues dealt with in this study is summarised as under.

(a) To examine whether there is adequate supply to meet present increasing demand of edible oil?

(b) To examine the effect of prices on demand of oil which affects the oil mill owners and what are their efforts to meet this juncture?

(c) To study the working performance of selected oil mills i.e. production and marketing of the oil and oilcakes.

(d) How to meet the supply of raw material i.e. oilseeds?

(e) To find out the problems and to suggest remedies.

2.3.3 The Need and Importance of the Present Study:

Edible oil processing industry is the third largest agro-industry in the country. Approximately 12% of agricultural land is under the cultivation of oilseeds crop and 10% agricultural income comes from oilseeds production. So the analysis of oilseeds production with edible oil processing industry is necessary.

The consumption of edible oil in India is increasing from 6 kg. to 8 kg. per capita per annum along with increasing population. It is true that in all most all in the states of India, the people are consuming the oil in large quantity. The oil is not used only for consumption purpose, but it is also used for as a raw material for the production of other products like vegetable oil, vanaspati ghee, the production of medicines, varnish, soaps, paints, lubricants oil etc This research study existed the consumption ratio of edible oil.

The role of edible oil industry in Indian oil industry is developing. Since last 10 years oil industry is using new techniques

and modern machinery for the extraction of oilseeds. This study enlightens the changing process of edible oil and oil cake production.

The development of edible oil industry in Solapur city creates employment opportunities and motivates the cultivators to produce oilseeds. So this study is also important to find out the state of employment and the growth of agriculture in district Solapur.

This study helps to know the effects of prices on demand of oil, production of oil and on edible oil market.

2.3.4 Edible Oil industry in Solapur City

Vegetable oil is an essential commodity of daily consumption and extensively used as raw material for vegetable ghee and soap. Many factors are essentially responsible for the location of this industry in Solapur. The surrounding areas are suitable for the cultivation of groundnut, sunflower and safflower. Secondly, cheap labour is available in plenty. Thirdly, Solapur is a railway junction and well connected with the rest of the country. Fourthly, as it is a big city, banking and other commercial facilities are easily available and a ready market for consumption of oil exists automatically.

Before the establishment of oil production by the expeller, the oil pressers were only in the form of small industries for the production of oil. It is true; production capacity of mill depends upon the number of expellers, and the size of the expellers. There are 2 types of expellers in use. One is known as a big expeller and other as a baby expeller.

During all the previous years and especially during the preceding 10 years, oil mills have supplied edible oil for Solapur city. There is a special location M.I.D.C. for industries. However, there is

also an Agricultural Produce Market Committee and a large part of the area has been specially kept and maintained for the establishment of oil industries from the last 10 years. At present, there are 98 oil mills as productive units including 170 expellers, the big expellers are 140 and small expellers are 30 in Solapur city. There is 1 double chamber oil expeller and 80 tel-ghanis in Solapur city.

According to the Census 2006, the total population of Solapur city was 9,16,101. The city of Solapur surrounded by many villages in the district. There are 11 talukas and 1089 villages in Solapur district. All these villages have been easily connected with respective talukas and city Solapur. Many citizens of Solapur, mainly the traders have deep outlook on the oil industries. Therefore, the oil Industries are functioning at present. Mainly these oil mills are under the private sector. These oil mills are established by sole trader who has no sound financial ability and also oil mills are established mainly under the form of organisation of a partnership by contributing the required capital and functioning on the basis of division of labour such as purchase, sales and marketing etc. These oil industries are under the head of small cottage and tinny industries. It is, however, true that these oil mills are not styled as heavy and big industries.

In city of Solapur, all these oil industries have not the same production capacity and also they do not have the same production machinery. Some oil mills are having expellers of 4 bolts and other 6 to 9 bolts and some other which are large by size of 12 bolts. Oil mills are not producing the same kind of oil from the same kind of oil-seeds. They produce different kinds of edible oil such as groundnut oil, karadi oil, sun-flower oil etc.

The population has been increased. This made to increase 0.0018 million Tonnes demand of oil in Solapur city. To meet the increasing demand the oil mills are established in good deal of number and oil mill owners have undertaken this productive activity as one of the economic activities. Thus how, it has resulted to enlist the more oil mills at present. The oil industry has played an important role in the development of Solapur as an industrial place.

2.3.5 Objectives:

(1) To take cursory review of oil mills in India and Maharashtra.

(2) To review briefly the Literature.

(3) To study socio-economic profile of Solapur city.

(4) To examine the govt. policies towards edible oil industries.

(5) To study the growth and development of edible oil industry in Solapur city.

(6) To study the organisation and management of edible oil industries in Solapur.

(7) To study the business operations of oil mills in Solapur.

(8) To study the working performance of selected oil mills in Solapur.

(9) To study the opinions and problems of oil mill owners

(10) To suggest remedies.

In short, all the above are the objectives of working of oil industries, in reference to the production, consumption, the financial aspects, the structural organization and the achievement of the maximum efficiency at the optimum point.

2.3.6 Hypothesis:

The hypothesis of the present study is as follows -

(1) Oil mill business motivates to increase the crop under oilseed cultivation in Solapur district.

(2) Edible oil industry can give further employment potential to the workers.

(3) The business performance of oil mills in Solapur city is satisfactory enough.

(4) Oil mills are facing number of problems, since globalisation.

(5) Industrial development is a must for economic development of the economy in general and a region or locality in particular.

2.3.7 Research Design:

A) Area under Study:

Solapur the fourth largest industrial city in Maharashtra is in the habit of adjustments. It rose as a temple town. Later the history saw it evolving as a market, commercial and as industrial city. The study of its industrial activity, therefore, is an important aspect of its changing economic geography. Solapur has now reached the first stage of industrialisation. Its survival and development depend upon the relationship, with its "Impact Zone" calls forth the need of 'Regional Plan' to harmonise its land use in terms of its requirements and aspirations.

Textile mills, oil mills, bidi factories, foot-wear manufactures, tin-smiths, bakeries etc. are established in Solapur city. There are 98 oil mills and 80 tel-ghanis in Solapur city during the year 2007. Solapur's large population constitutes a sizeable market. Moreover, the population is increasing. All these years, the local market has

also played an important role in supporting manufacturers. Edible oil is the item of export. Groundnut oil and sunflower oil goes to Mumbai.

Like other districts of Maharashtra state, Solapur district is also an agricultural one and rural life in this district is mainly depending on agriculture. Jawar, wheat, pulses, groundnut, and sunflower are grown on large scale in the district. The main crop, however, is jawar and oil-seed, which is mostly harvested in rubi season. About 70% of area under cultivation is under rubi crops.

At present there are 98 oil mills including 170 expellers, as a productive units as in the following table.

Number of Oil Mills	Size of Expellers	Number of Expellers
80	33” x 6”	152
18	27” x 5”	18
Total 98		**170**

Number of Tel-Ghani Units	Tel-Ghani
80	**160**

B) i) Selection of Sample Oil Mills and Tel-Ghani Units:

At present there are 98 oil mills and 80 tel-ghani units in Solapur city. Out of total oil mills 69 i.e. 70 percent and 20 tel-ghani units i.e. 25 percent is selected for the present study. This selection is done with the help of random sampling technique.

ii) Selection of Oil Mill Owners:

In order to assess the problems of oil industry, all sampled oil mill owners are interviewed through structured schedule–cum-questionnaire. In all 98 oil mill owners are constituted the sample for the present study.

Besides the actual survey, personal discussions with the oil mill owners, officers of agricultural development office of Solapur district, workers and traders are made in this research work.

2.3.8 Methodology and Data Collection:

The research work is depended, mainly on primary data collected through survey, personal interviews and questionnaire. The use of secondary data to a limited extent is made wherever necessary.

A) Primary Data:

Primary data is collected through questionnaire, observation and discussions.

i) Questionnaire:

Two structured questionnaires-cum-schedules are designed. One for oil mills and ghanis another for oil mill owners.

ii) Observations and Discussions:

Formal and informal discussions are held with selected oil mill owners, traders, farmers and workers.

For the discussion of production of edible oils, market conditions, prices of oilseeds 69 oil mill owners are selected for this research work.

The formal and informal discussions are held with traders about the supply and prices of oilseeds.

In present research work farmers are also interviewed to know the cultivation of oil seeds. The workers of 69 sample oil mills are interviewed to know the wage rate and other facilities provided by the oil mill owners.

The inferences of these discussions are correlated in the present study.

B) Secondary Data:

The secondary data related to the research is collected from the various sources such as books, articles, periodicals and institutions etc. The following information were visited and consulted.

1. Indian Institute of Management, Ahmedabad
2. Sardar Vallabhbhai Patel University, Gujrat.
3. The Barr, Balasaheb Khardekar, Library Shivaji University, Kolhapur
4. The Gokhale Institute of Politics and Economics, Pune
5. The Vaikunth Mehta National Institute of Co-Operative Management, Pune.
6. The Agriculture College, Kolhapur.
7. Mahatma Phule Krushi Vidyapeeth, Rahuri.
8. D.A.V. Velankar College of Commerce, Solapur.
9. National Institute for Rural Development, (NIRD), Hydrabad.
10. Karnataka University, Dharwad.
11. Socio-Economic Review and District Statistical Abstract of Solapur from 2000 to 2007.
12. “Solapur City Socio-Economic Studies” (Gokhale Institute of Politics and Economics Poona-1965).
13. Epitome of Agriculture in Maharashtra 2005-06.
14. World Agricultural Association Publications and Bulletins.
15. The Oil and Oilseeds Journal – 2000 and 2005.
16. Solapur District Khadi Gramodyog Mandal.
17. Solapur Oil Mill Owners Association.

2.3.9 Data Processing and Techniques of Analysis:

A) Statistical Tools:

The collected data is tabulated in the light of objectives, chapter scheme to be used. The data is processed and analysed with the help of statistical tools i.e. Ratio Analysis.

B) Graphs and Diagrams:

On the basis of collected and processed data, the effective tools like graphs, diagrams, charts (bar, pie etc.) are used in the study.

C) Excel and MS-Word Softwares:

For the data processing and preparing graphs, diagrams and charts the statistical tools, involving Computer Softwares like Excel and MS-Word Softwares are used.

2.3.10 Reference Period:

The new economic policy started from 1991 in India. This research study is covered a period of 18 years i.e. from 1991 to 2008. The financial year commences from 1st April and ends with 31st March of every year.

2.3.11 Outline of Study:

Chapter Scheme:

The present research work is divided into main 10 chapters in all, which has the following chapter scheme.

1) Chapter I-A Cursory Review of Oil Industry in India & Maharashtra:

In this chapter the present position of edible oil industry in India and Maharashtra isreviewed. This chapter also provides the present position of edible oil industry in Solapur city. It introduced the current position of agricultural sector i.e. area under oilseed crops in India, Maharashtra and in the Solapur district.

2) Chapter II-Review of Literature & Research Methodology:

In this chapter I have presented the review of the literatures of various authors, experts and the researchers related to the subject "The Working of Edible Oil Industry in Solapur City is not Satisfactory during 1991 to 2008". This chapter also introduced the subject selected for the present study as a research problem and described the importance of the study as well as the research proposal. It comprises of the important aspects like objectives of the study, hypothesis, importance of the study, scope of the study, geographical areas of the study, period of the study, research design, limitations and chapter scheme of the study etc.

3) Chapter III- Socio-Economic Profile of Solapur City:

This chapter consist the profile of Solapur city such as introduction, historical, geographical, socio-cultural and economic features. This chapter provides the information about the base of industrial development particularly agro based industry.

4) Chapter IV- Govt. Policies towards Oil Industry:

In this chapter an attempt is made to review the changes of the Government policies implemented on edible oil industry in India. It also provides the programmes on edible oil industry and oilseeds implemented by the Government of India during plan era.

5) Chapter V-Growth and Development of Oil Mills in Solapur City:

I have presented exactly the growth of edible oil industry in Solapur city. This chapter provides the development of oil industries and oilseeds in agricultural sector.

6) Chapter VI-Organisation and Management of Sample Oil Mills:

This chapter introduced the organisation and management of 69 sample oil mills in Solapur city. It gives the details about the establishment, working, finance, marketing, purchase, sale by the oil mill owners and tel-ghani units.

7) Chapter VII- Business Operations of Sample Oil Mills:

This chapter consist exactly the working of sample oil mills, functions of oil mill owners, market situation, investment, transportation etc. This chapter also provides the present position of the sample oil mill owners and tel-ghani units in Solapur city.

8) Chapter VIII-Performance Evaluation Based on Ratio Analysis:

In this chapter the performance of all 69 sample oil mills are evaluated to the various ratios such as current ratio, gross profit ratio, net profit ratio, working capital turnover ratio, fixed

assets turnover ratio, operating ratio, operating profit ratio, current assets turnover ratio, total assets turnover ratio etc.

9) Chapter IX - Oil Mill Owners Problems and Reactions:

In this chapter I have presented the problems and reactions reaised by the oil mill owners and tel-ghani units in Solapur city in detail. The reactions of the oil mill owners to overcome the problems related to processing, transportation, employment, finance etc. are presented in this chapter.

10) Chapter X - Conclusions and Suggestions:

This is the last chapter of the research work which highlights the major conclusions and suggestions.

2.3.12 Limitations of the Study:

This research work is completed by evaluating the operations of the oil mill owners related to processing, marketing, finance etc. In present research work, I have stated an increasing need and scope of the working of oil industries. However there are some limitations of this study bearing the objectives.

It has been mainly carried out through Questionnaire technique for the local limits of Solapur city.

The agro-market is fluctuating market, limits to collect the worth data of oilseed prices.

1. The present study is confined to oil mills in Solapur city only. The generalisation of findings would be mostly limited to this district.
2. The study is limited to 98 oil mills and 80 tel-ghani units of Solapur city only.
3. The study is limited to 18 years i.e. from 1991 to 2008.

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CHAPTER - III

SOCIO – ECONOMIC PROFILE OF SOLAPUR CITY

3.1 INTRODUCTION:

Solapur is one of the largest industrial Cities in Maharashtra and in the habit of adjustments. It rose as a Temple Town. Later the history saw it evolving as a market, commercial and an industrial city. The study of its industrial activity is an important aspect of its changing economic geography. The life of the city revolves round the cotton textile industry – in mills polarised in the western part around the Railway Station, and power looms, handlooms and oil industry in the eastern part on the Akkalkot and Hyderabad Roads. This was mainly due to its strategic location and central position in the Bhima basin, extension of Railway-line from Mumbai in the mid nineties and in-migration of cheap traditional labour from famine-stricken Telangana Region.[7]

Solapur has now reached the first stage of industrialisation. Its survival and development depending upon the relationship, with its "impact zone" calls forth the need of 'Regional Plan' to harmonise its land use in terms of its requirements and aspirations.

The process of industrialisation has no beginning and no end, but some places are nearer the beginning than the others. Industrial development is a key to the progress and stability of the country. Industrial activity is vast, complex and dynamic. It constitutes a dominant portion of the economic base of many cities. This activity provides both at the policy and at the action levels, ample scope in developing economies.

3.2 GEOGRAPHICAL SETTING AND ECONOMIC FEATURE OF THE SOLAPUR CITY:

(a) Location:

Solapur city is the head quarter of Solapur district. It is situated on the south-east fringe of Maharashtra state and lies between 17°.10' and 18°.32' north-latitude and 74°.42' and 76°.15' east longitude. Solapur is of general importance, an isolated phenomena, a predominantly industrial town. It might be described as a milling community super-imposed on an old Indian town. It is situated in the Bhima Basin, on the watershed of the Adila, a feeder of River Sina. Its strategic importance as the gateway of the Bhima and Krishna valleys was recognised by the Marathas in their wars with Nizams and other southern rivals. The rock on which the city is built is hard murum, almost approaching trap.[1]

(b) Boundaries:

The district is surrounded by Ahmednagar and Osmanabad districts in the north, Osmanabad and Andhra Pradesh in the east, Sangli district and the Karnataka state to the South and Satara and Pune districts towards the west.

(c) Hill Ranges:

There is no important hill system in the district. Only in the north of Barshi Tahsil, several spurs of Balaghat range pass towards south for a few miles. Of these, the chief is the Barshi Ghat about twenty 2 kilometers east of Barshi Tahsil.

There are also scattered hills in Karmala, Madha and Malshiras Tahsils. In Karmala, Baghoba hill about 210 feet high and Bodki hill about 190 feet high lie about 26 kilometers south of Karmala. The top of these hills is flat. In Madha Tahsil, Chinchgaon hill is about 300 feet high, lie about 6 kilometers north of Madha Tahsil. The Gurnad hill is in the Malshiras Tahsil. The low table land and small separate hills in Karmala and Madha Tahsils act as the water shed between Bhima River and Sina River.

(d) River:

The chief rivers are the Bhima, Man and left bank feeders the Sina and Bhogawati in the district. The drainage area of the Bhima with the district includes on the left bank western half of Karmala, Madha, Pandharpur and South Solapur Tahsils and on the right bank the southern part of Pandharpur and Mangalwedha Tahsils. The length of Bhima within the limits of the district is 289 kilometers.

The River Man on entering Sangola Tahsil from the western border flows eastwards draining Sangola Tahsil and parts of Pandharpur and Mangalwedha Tahsils. It meets Bhima near Pandharpur. The Sina, which flows from north to south-east parallel to Bhima, drains the Tahsils of Barshi, North Solapur on the left and part of Karmala, Madha, and South Solapur on the right. Solapur is situated in the centre of a large plain on the water-shed of 'Adila' a feeder of the Sina River.[11]

(e) Climate and Seasons:

The climate of Solapur is described as healthy and dry except the months of March, April and May. It is agreeable and free from

extremes of heat or of cold. It is considerably during the months of April and May.

The year may roughly be divided into 3 nearly equal seasons:

1. The cold season : From November to February
2. The hot season : From March to Mid-June;
3. The Rain season : From Mid-June to end of October

During the cold season the air is generally bright and clear and bracing, the nights and mornings being especially cool and freshening. The hot season from March to June, especially during March and April, is marked by dry scorching heat. The mean temperature during this period is 43° Celsius and climate is oppressing with strong hot winds and occasional dust storm. The mean temperature during the rains is 30° Celsius and from November to February about 25° Celsius. Bitter cold is almost unknown.

(f) Rain Fall:

All over the district, the rain-fall is scanty. The average annual rain-fall in the district is about 25 inches. Solapur normally has a rain-fall of about 30 inches. However, in certain places, the rain-fall exceeds this figure. There are about 42 rainy days in a year. Even this scanty rain-fall is most unevenly distributed and uncertain leading to famine conditions now and then.[12]

(g) Soils:

The soils in the district can be classified into 4 main categories on the basis of depth and structure viz.

(a) Very shallow soils with depth 7.5 cms.

(b) Shallow soils between 7.5 to 22.5 cms.

(c) Medium deep soils from 22.5 to 90 cms.

(d) Deep soils with depth more than 90 cms.

It is broadly estimated that out of the total cultivated area very shallow soils occupy about 10 percent of area, shallow soils 20 percent, medium deep soils 45 percent area and deep soils 25 percent area. In Karmala Tahsil about 50% soil is black and the remaining is red and light.[12]

(h) Minerals:

There are no minerals of economic importance in this district. However, minerals like building stones are found in sufficient quantity all over the district.

(i) Forests:

The total area under forest is 403.23 square kilometers. All these forests are scrub forests growing thorny bushes. The forest area is much scattered. It may be classified roughly into 2 tracts, i.e. hill between Barshi and Osmanabad on the extreme north and east and hills to the south of Malshiras and Sangola in the extreme south-west. The forest products of Solapur district are grasses, tendu, gum, seedlings and agave.

(j) Area:

Solapur district comprises of an area of 15021 square kilometers, which is 4.88% of the total area of the state. Of this, urban areas about for 414 square kilometers and rural areas for

14607 square kilometers. In terms of area, Barshi is the largest Tahsil within an area of 1,626 Square Kilometers, and the smallest Tahsil is North Solapur with an area of 736 square kilometers.[5]

(k) Important Crops:

Both kharif and rubi crops are grown in the Solapur district. But area under rubi crops is predominant.

(l) Industries:

Solapur is a city of important industries such as textile mills, oil mills, bidi factories, foot-wear manufacturers, tin-smiths, printing presses, pulse makers, sugar factories, bakeries, furniture makers etc. There are about 8000 power looms situated in Solapur city. There are about 15000 hand looms in the city.

The following table provides information about the different industries in Solapur city such as Bidi Industry, Power Looms, Hand Looms etc.[2]

Table 3.1

Number of Industries in Solapur City In 2007-08

Sr. No.	Name of the Industry	Number	Number of Workers
1.	Power Loom Industry	8000	30000
2.	Hand Loom Industry	15000	20000
3.	Bidi Industry	29	71725
4.	Oil Mill Industry	98	645
5.	Tel-ghani	80 units (160 Tel-Ghani)	460

SOURCE: Solapur District Socio Economic Survey, 2005-2006.

Solapur city in famous for edible oil industry, power loom and hand loom Industries. At present there are 98 oil mills having 170 expellers, as a productive units and 80 tel-ghani units having 160 tel-ghanis. Out of 71725 workers in Bidi Industries 70000 female workers are engaged in this industry.

At present there are 98 oil mills including 170 expellers, as a productive units as in the following table 3.2.

Table 3.2

Number of Oil Mills and Tel-Ghani in Solapur City in 2008

Number of Oil Mills	Size of Expellers	Number of Expellers
80	33” x 6”	152
18	27” x 5”	18
Total 98		**170**

Number of Tel-Ghani Units	Tel-Ghani
80	**160**

SOURCE: Solapur Oil Mill Association, Solapur.

(m) Places of Religious Interest:

Solapur city has a number of minor places of religious importance, chief among them in Solapur city is a temple of 'Siddheshwar' standing in the lake known as 'Siddheshwar Lake'. In honor of Shri Siddheshwar, yearly Fair is held on the south-east bank of the lake where about 400 Booths are set up. This Fair is held in the month of January. A Samadhi of Jatayu is built at this place. Also the district is noted for Pandharpur which is an ancient place of Hindu Pilgrimage. It is known as "Dakshin Kashi". The statue of Vithoba Pandurang is there. The culture of the people leans entirely on Hinduism.

The legend goes that the word Solapur denotes sixteen (16) villages hence it is being famous as Solapur. Solapur pur-grew as a religious centre under the Late Chalukyas and the Yadavas in 11th and 12th Centuries. The persons responsible for making Solapur, a religious centre were 'Revansiddha' and 'Siddharam'. Siddheshwar Temple became the urban nucleus. It may be mentioned that there are 108 Lingas in Solapur and about 63 temples of different communities. There are also a Parsi Agyari, a Roman Catholic Church, a Protestant Church, an American Mission Church, 6 Jain Temples and 45 Mosques.

The regular weekly market on Tuesday and the great Annual Gadda Fair at the time of Sankrant, when Siddheshwar gets married to 'Sacred Kathi' acted as powerful stimuli to its function as a commercial mart of Deccan. Its evolution as a modern town, in fact, started after the Battle of Ashti on 9th February, 1818 when Bajirao retreated to Solapur, and surrendered the Fort with its garrisons to

General Munrao on the 14th May, 1818 after a seize of 4 days. Solapur then was merged in Poona Collectorate.

Solapur was now' a town having well established peths encircled by a well built wall and gates. It became Collectorate in 1838. Municipality was established in 1862. The first announcement regarding the boundaries of the town was made in the Gazette of 1866. Thereafter, the city expanded by swallowing its immediate upland to its present size. The sanctioned 'Development Plan' being enforced by Solapur Municipal Corporation (established on 1st May, 1964) aims to improve the open areas by various 'developments' and Town Planning Schemes. The city now wears a concentric circle pattern with 'Innermost Ring Road', Inner Ring Road, Middle Ring Road and Outer Ring Road, forming important arteries of intercity communication.

But what is required for the poly-nuclear city is a 'Regional Plan' – a plan for orderly development of the region and its finer articulation with other regions.

3.3 Population of Solapur City:

Mr. L. J. Sedgwick remarked in 1921 "The City (Of Solapur) has gone through some vicissitudes in the way of ups and downs at population. The population of the city in 1921 stood at the figure of 2,77,087. This was the first Census year when the population crossed the number of 1 lakh and the population crossed the number of 5 lakhs in the 1981 Census. Final figures of total population in each district in the state as per 1981 Census have been published by the Census Department. According to that publication, total population of Solapur district was 26.10 Lakhs. The population was

22.54 Lakhs and 18.60 Lakhs as per the population Census of 1971 and 1961, respectively.

Out of the total population of 26.10 Lakhs in 1981, 18.43 Lakhs (about 71 percent) lived in Rural areas and the remaining 7.67 Lakhs (29 percent) lived in Urban areas. It was observed that the percentage of Urban population increased from 27% to 29% during a period of 10 years from 1971 to 1981. As per 1961 Census, about 28% population of the district was in Urban areas.[3]

The final figures of total population of Solapur city as per 1991 Census have been published by the Census Department. According to that publication, the total population of Solapur city was 6,20,499 including males and females 3,19,128 and 3,03,371 respectively. In the year 2001, the total population of Solapur city was 8,05,250.

In order to have an idea about growth of population during the last 6 decades a table indicating total population of Solapur city and variation in population is given below:

Table 3.3

Movement of Population in Solapur City

During 1951-2001 Census

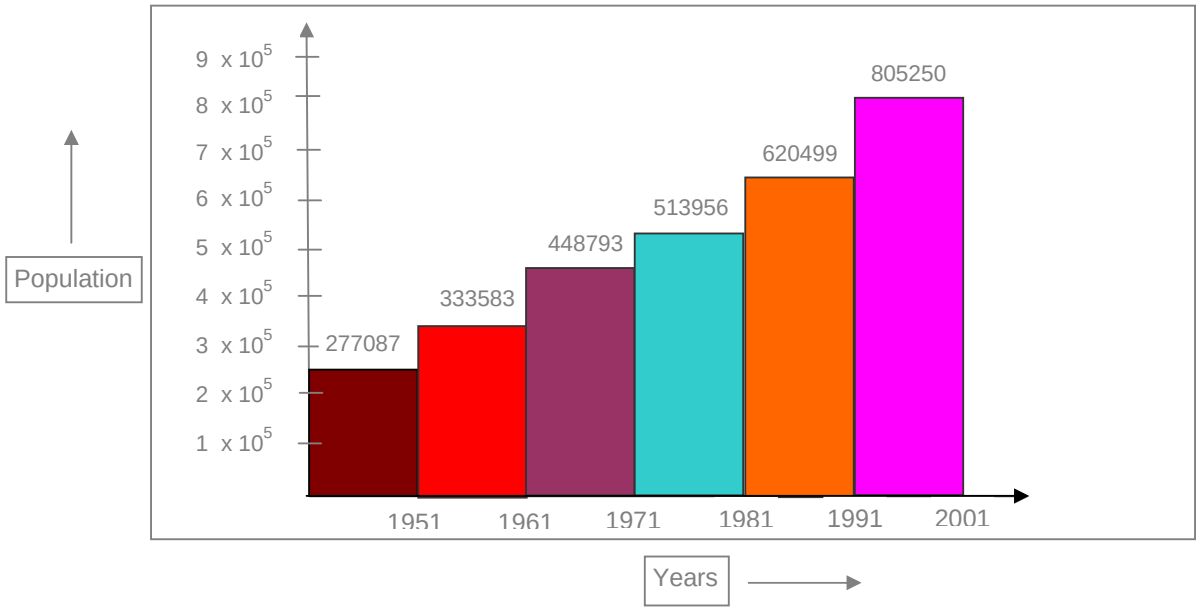
Census Year	Males	Females	Total
1951	1,44,545	1,32,542	2,77,087
1961	1,72,475	1,61,108	3,33,583
1971	1,32,044	2,16,749	4,48,793
1981	2,65,736	2,48,220	5,13,956
1991	3,19,128	3,03,371	6,20,499
2001	4,15,252	3,89,998	8,05,250

SOURCE: "Solapur Municipal Corporation".

Graph 3.1

Movement of Population in Solapur City

During 1951-2001 Census



The above table and graph show the continuous increase in the population. This naturally effected to increase the demand of all commodities. To meet the increased demand, there must be a suitable supply. To provide the supply of commodities there must be an establishment of industries and growth in all the economic fields.

This is how, we find that the number of industries are establishing and developing.

3.4 Total Number of Villages:

The Solapur is the district in which, there are many different talukas. In the district, there are 11 talukas, and there are 1089 villages in the district.[4]

The following table shows the names of the talukas and the number of villages in each taluka:

Table 3.4

Number of Villages in Each Taluka

Sr. No.	Name of the Taluka	Number of Villages
1	Solapur North	49
2	Barshi	142
3	Akkalkot	126
4	Solapur South	87
5	Mohol	103
6	Mangalwedha	79
7	Pandharpur	93
8	Sangola	87
9	Malshiras	104
10	Malshiras	103
11	Madha	116
	TOTAL:	**1089**

SOURCE: "Socio Economic Review and District Statistical ABSTRACT of Solapur District" 2007-08.

The Solapur city is in the area of North Solapur Tahsil. It has its local boundaries and even these boundaries extended by the town plannings. In the North Solapur, there are 49 villages and in South Solapur, there are 87 villages. There is 1 Agricultural Produce Market Committee for the both South and North Solapur Tahsils including the city area. The large population villages are effected in agricultural activities and on the field works. The oilseeds coming to Solapur market i.e. to Agricultural Produce Market, is mainly from North Solapur and South Solapur.

3.5 Industrial Activity in Solapur:

Localisation:

Industrial localisation depends upon the interplay of various factors, chief among which are the following:

(a) Administrative Structure of Solapur District:

Table 3.5

Administrative Structure of Solapur District

Sr. No.	Administrative Structure	Solapur Nos.	Maharashtra Nos.
1.	Taluka	11	353
2.	Cities	10	378
3.	Villages	1089	43711
4.	Barron Villages	8	2616
5.	Municipal Corporation	1	22
6.	Corporation	9	222
7.	Panchayat Samitis	11	350
8.	Gram Panchayat	1028	27920

SOURCE: Solapur District Socio Economic Survey, 2005-06.

There are 11 talukas in Solapur district consist 1089 villages out of 8 villages are baron. In Solapur district there are 9 Corporations, 11 Panchayat Samitis and 1028 Gram Panchayats. Solapur district consists of 10 towns and 1 Municipal Corporation.

(b) British Raj:

Soon after 1818, the machine like character of British rule bestowed peace and order, the rule of law stable political and economic conditions enabling it to become a resort of traders and artisans.

(c) Nodality:

Towns are nodes of route systems. Solapur was situated on the great commercial routes of the middle ages connecting Maharashtra, Karnataka and Hyderabad. The establishment of Railway Station on the main line in 1859 emphasized and confirmed its convenient location, 263 kms. SSE of POONA 455 Kms. SE of Mumbai and about 360 kms. NW of the twin cities of Hyderabad – Secunderabad are growing as commercial and industrial centre. Thereafter, it became a termus of the eastern branch of M.S.M. Railway from Bijapur. The extension and improvement of motor transport is now a serious rival of the railways as a means of transport.

(d) Cheap Labour:

Cheap and skilled labour is the foundation upon which rests the industrial activity of the Solapur city. Padmashali's maintain that they come to Solapur at the invitation of the Peshwas. They were followed by some Togati families. The Jyandra and Kurhinshetty castes and migrated from Kanerese speaking parts of the Nizam's dominions like Raichur, Gulbarga and a part of Mahibubnagar district, and other districts in the Mumbai and Chennai states adjoining them. The agglomerative factors were the similarity of physical environment and the opportunity of employment throughout the year at comparatively higher wages.

(e) Raw Materials:

Solapur has been an important centre of exchange with urban areas of Maharashtra, Karnataka and Hyderabad viz. Gulbarga, Bijapur, Bagalkot, Barshi, Latur, Nanded, Mudkhed, Jalna and Humanabad etc. Raw cotton came to Solapur market in 1840 and sooner became the staple trade of the town. Salt, Kirana, oil-seeds, fire-wood, shahabad stones, cotton-piece goods, bidi leaves, mineral

Figure 3.1

Map of Solapur City

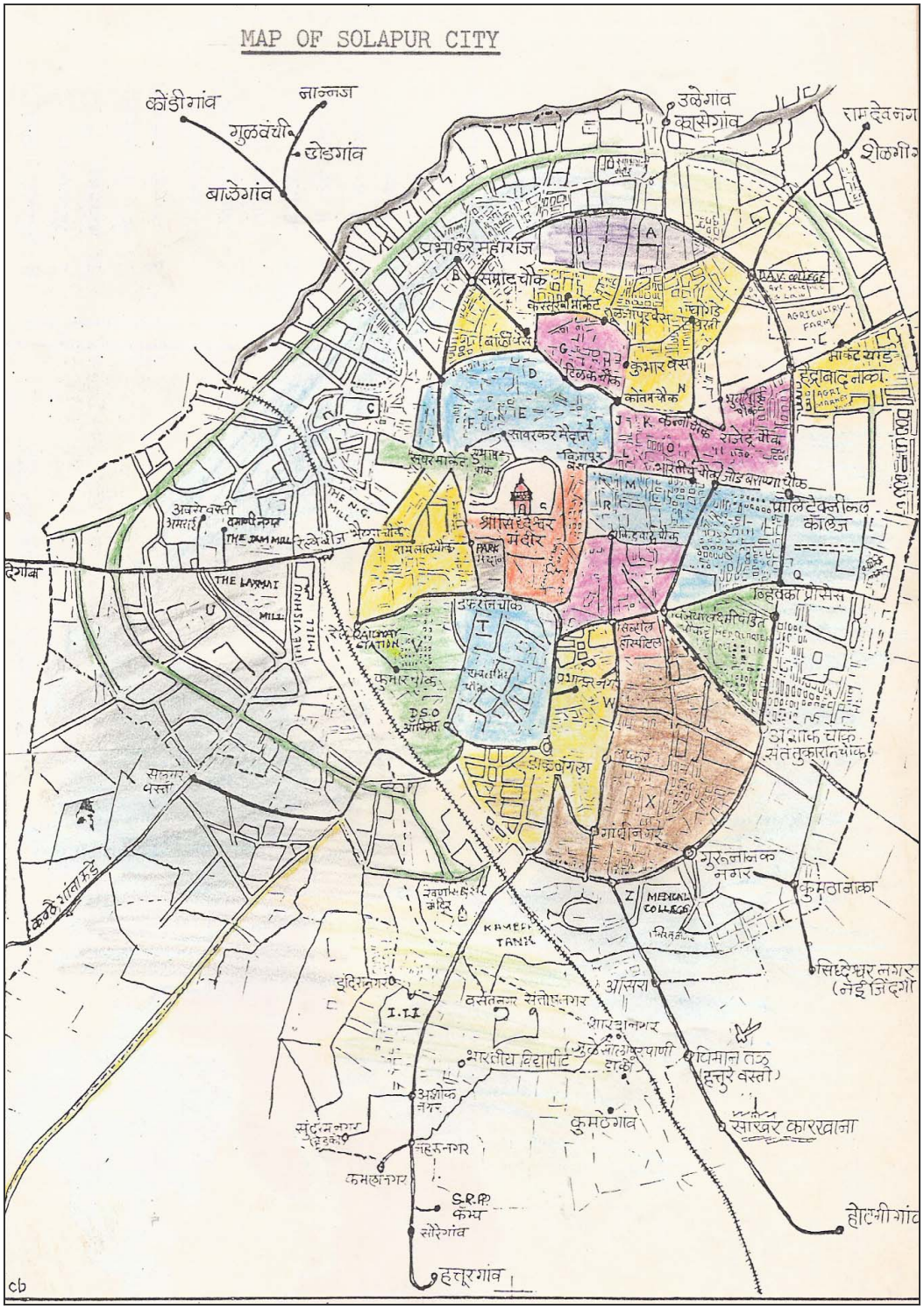
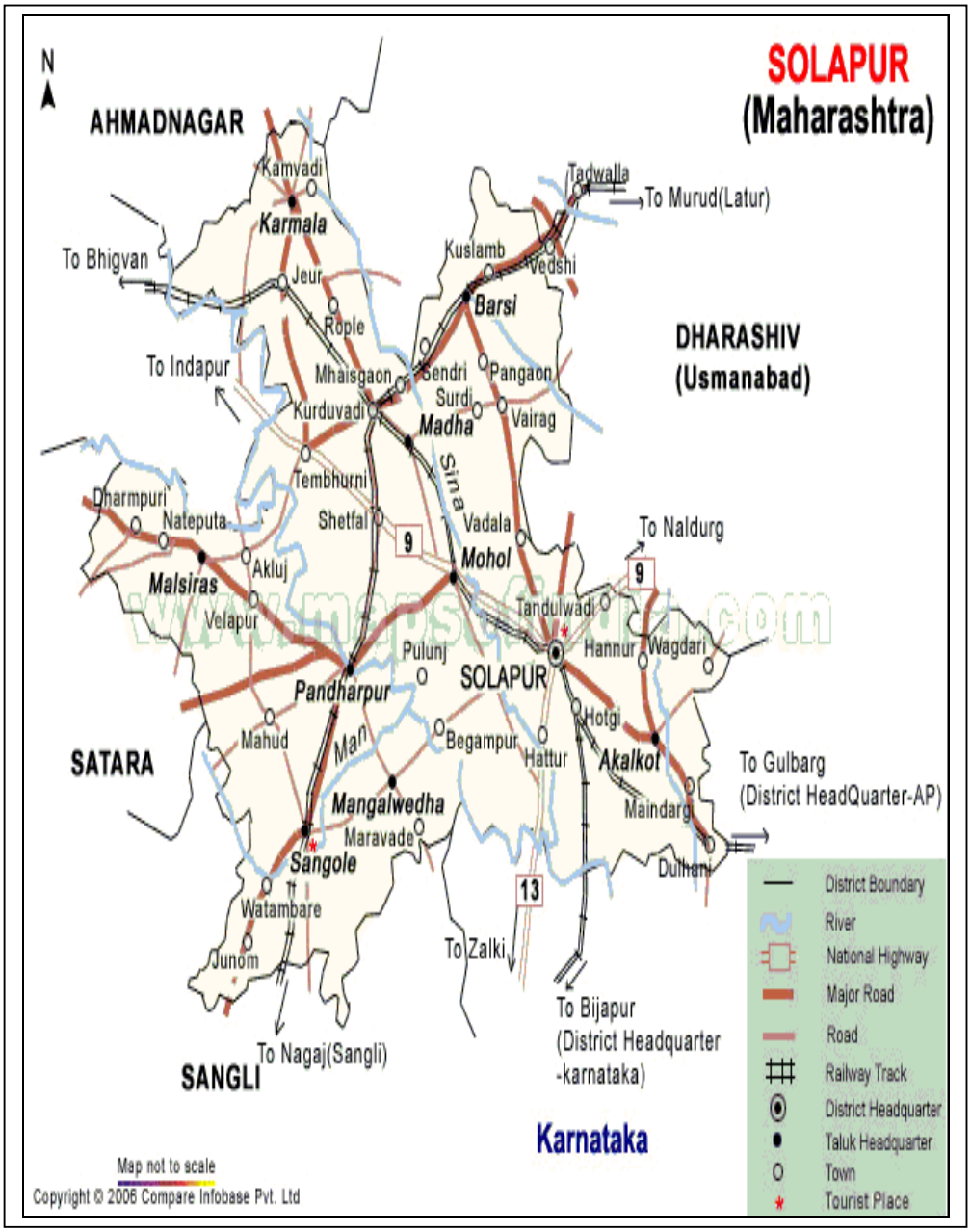


Figure 3.2

Map of Solapur District



oil, paper and steel etc. also flow inward to sustain her industrial growth and expansion.

(e) Markets:

Solapur's large population constitutes a sizeable market. Moreover, the population is increasing. All these years, the local market has also played an important role in supporting manufactures. But as the industrial activity expands and diversifies, her salesmen plough both inland and foreign markets. Chaddars, edible oils and Bidis are the items of export. Cotton waste goes to Mumbai and Hyderabad. Groundnut oil and sun-flower oil to Mumbai, Kolkata and Delhi and the wet skins to Madras. It may be emphasized that Chaddars, garments, bidis and edible oils especially are more sought after.

(f) Bank Offices in Solapur District:

Table 3.6

Bank Offices in Solapur District in 2005-2006

Sr. No.	Taluka	Number of Villages having Bank Offices	Number of Banks	Number of Branches	Deposits [Rs. in Lacs]
1.	Karnataka	33	6	14	7127
2.	Madha	49	7	18	10521
3.	Barshi	50	8	20	13181
4.	North Solapur	60	20	52	88321
5.	Mohol	36	5	10	4883
6.	Pandharpur	49	9	21	17093
7.	Malshiras	64	8	24	15056
8.	Sangola	44	7	14	8442
9.	Mangalwedha	26	5	10	3671
10.	South Solapur	29	5	13	8422
11.	Akkalkot	33	6	16	10319
Total Districts:		**473**	**86**	**212**	**187086**

SOURCE: Solapur District Socio Economic Survey, 2005-2006.

At present 473 villages in Solapur district are having bank offices of 86 banks having 212 branches. The total deposits in these banks are Rs. 1,87,086 Lakh. Out of 11 talukas Malshiras taluka is having maximum number of bank offices i.e. 64 and Mangalwedha taluka consist of 26 bank offices.[17]

(g) Co-Operative Societies in Solapur District:

Table 3.7

Co-Operative Societies in Solapur District

Sr. No.	Type of Co-Operative Society	Numberof Societies
1.	District central Co-Operative Bank	1
2.	Primary Agricultural Co-Operative Societies	1164
3.	Food-grain Bank	1
4.	District Agriculture Rural Bank	1
5.	Sugar Factories	16
6.	Agricultural Processing Societies	9
7.	Weaving Societies	182
8.	Weaving Handloom Societies	167
9.	Industrial Societies	13
10.	Milk Co-Operative Societies	3146
11.	Co-Operative Spinning Mills	17
12.	Consumer Co-Operative Societies	312
13.	Housing Co-Operative Societies	728
14.	Labour Co-Operative Societies	880

SOURCE: Solapur District Socio Economic Survey, 05-2006.

The Co-operative movement is developing in Solapur district since 20 years fastly. There are 11 Co-Operative Sugar Factories and 17 Co-Operative Mills located in different rural areas in the district. There are 9 agricultural processing societies, 182 viewing societies, 167 handloom viewing societies and 13 industrial areas are creating employment opportunities in rural areas in the district. The role of district central Co-operative Bank is very important because it provides for agriculture and non-agriculture socio economic development activities in the rural areas in the district through the primary co-op credit societies. At present every village is having primary co-op. credit society. These primary co-op. credit societies provide different types of looms and financial aid to the agriculture farmers for the development of agriculture and rural areas.

3.6 Agriculture:

Like other districts of Maharashtra state, Solapur district is also an agricultural one and rural life in this district is mainly dependent on agriculture. Jawar, wheat, pulses, groundnut, sunflower and to the some extent sugar-cane are grown on a large scale in the district. The main crop, however, is Jawar and oil-seed, which is mostly harvested in rubi season. About 70% of area under cultivation is under rubi crops. The following table shows the area under various crops in Solapur district. (2003-2008).[5]

Table 3.8

The Area under Various Crops in Solapur District 2003-2008

(Area in Hundred Hect.)

Crops	2003-04	2004-05	2005-06	2006-07	2007-08
(A) Cereals:					
Rice	35	23	26	31	37
Wheat	419	335	363	401	442
Kharif Jawar	74	76	111	144	177
Rubi Jawar	7751	7608	7584	7652	7817
Bajari	277	241	258	282	299
Other Cereals	172	153	226	257	286
Total Cereals:	**8728**	**8436**	**8568**	**8767**	**9058**

Crops	2003-04	2004-05	2005-06	2006-07	2007-08
(B) Pulses:					
Tur	220	183	198	210	228
Gram	309	265	314	348	399
Other Pulses	278	273	366	412	446
Total Pulses:	**807**	**721**	**878**	**970**	**1073**
Total: (A + B)	**9535**	**9157**	**9446**	**9737**	**10131**

Crops	2003-04	2004-05	2005-06	2006-07	2007-08
(C) Sugar-Cane	254	250	335	388	429
Cotton	50	32	29	39	52
Total:	**304**	**282**	**364**	**427**	**481**

Crops	2003-04	2004-05	2005-06	2006-07	2007-08
(D) Oilseeds:					
Groundnut					
Kharif	88	62	64	73	86
Summer	63	71	278	312	346
(E) Sun-flower					
Kharif	325	127	251	294	332
rubi	185	182	359	412	474
(F) Safflower	614	583	608	739	907
Other Oilseeds	85	57	75	88	96
Total OilSeeds Area:	**1360**	**1082**	**1635**	**1918**	**2241**

In the above table 3.8(a) the area under rice crop increased from 35 to 37 hundred hectares in 2003-04 to 2007-08 respectively. Under the kharif, jawar crop the area increased 74 to 177 hundred hectares and in rubi-jawar it was increased from 7751 hundred hectares to 7817 hundred hectares during 2003-04 to 2007-08.

The area under groundnut crop i.e kharif decreased from 88 hundred hectares to 86 hundred hectares and increased groundnut summer crops from 63 to 346 hundred hectares during 2003-04 to 2007-08. It shows an increasing groundnut crop in irrigation sector. The sunflower and safflower oilseed crop's area in hundred hectares also increased. The total area under oilseeds crop in Solapur district increased from 1360 hundred hectares to 2241 hundred hectares during 2003-04 to 2007-08.[6&9]

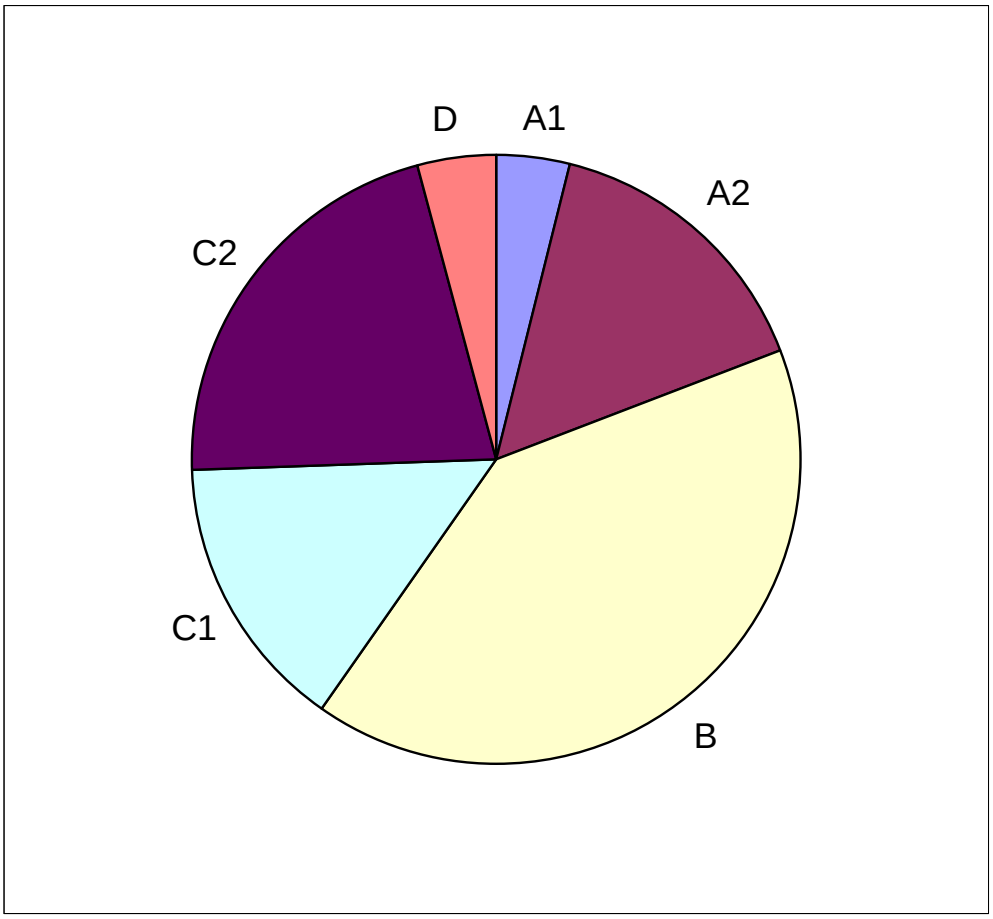
Graph 3.2

AREA DISTRIBUTION OF TOTAL OIL SEEDS IN SOLAPUR DISTRICT OF 2007-08

(Area in Hundred Hectares)

Total Oilseeds Area = 2241

A1 = Groundnut (Kharif)	=	86
A2 = Groundnut (Summer)	=	346
B = Safflower	=	907
C1 = Sunflower (Kharif)	=	332
C2 = Sunflower (rubi)	=	474
D = Other Oilseeds	=	96



3.7 Infrastructural Facilities:

(a) Ekrukh Tank:

Upto 1920 the water supply was from the private wells. Industrialisation and urbanisation increased the demand for water-supply which is met mainly by the Ekrukh Tank lying 5 miles N.E. of the city. Ekrukh Tank the largest artificial lake in Maharashtra has a total capacity of 3,330 M.Cu.Ft., and commands a gross area of 17,152 acres. Water comes to Solapur city from Ekrukh Tank and Ujani Dam.

(b) Fuel:

Coal is the source of fuel and power sustained the growth of Solapur as an industrial centre. It hoards by Railways from Singareni, Kotma, Hirdagarh, Ballarshah, Jinardeo, Iklehera, Chanda, Chirimiri, Sehdeol and Parusia. The purchase was arranged by the Mills. Solapur Electrical undertaking started generating electricity in 1925. Koyana power came in March, 1963, and the full lane has now been transferred since 1965.

(c) Transport and Communication:

This district is connected to Mumbai, Hyderabad and Madras by Railway line (Broad gauge). Another line connected this district with Bijapur (Karnataka). The third line (narrow gauge) connected through Latur, Miraj (Sangli district). At present the narrow gauge is converted into broad gauge.

The total length of Railway line is 447.98 Km. in the district. Important railway stations on the above 3 lines are Kurduwadi, Solapur, Hotgi, Latur, Pandharpur and Sangola.

(d) Road:

The district places as well as all Taluka places are well connected by National state and major district roads. The important National Highway passing through the districts are:

(a) Mumbai – Hyderabad

(b) Nagar – Bijapur

(c) Solapur – Bangalore

The total length of roads is 94.1 kms. in the district. Transport and Communication is one of the important factors in the infrastructure of the economy. A planned network of roads and other means of communication help in bring out economic development quickly. In Solapur district there has been no changes in the rail length since long.

Solapur is the sixth largest manufacturing city in the Maharashtra state, first 5 being Greater Mumbai, Pune, Thane, Nagpur and Nashik.

The above geographical, economic and social history makes to develop the industrial sector in Solapur city. The city is located near the boundary of Karnataka and Andhra state. The state Karnataka and Andhra are famous in the field of dry-land agriculture particularly for oilseeds production such as groundnut, sunflower, safflower etc. This is why the city Solapur is developing through the oil and cotton industry. In these present days due to the above circumstances, the Solapur city edible oil market is also developing.

3.8 Conclusion:

Solapur city is the head quarter of Solapur district and is one of the largest industrial cities in Maharashtra. It is situated on the South- East fringe of Maharashtra state and lies between 17^0.10' and 18^0.32' north latitude and 74^0.42' and 76^0.15' east longitude. Solapur is of general importance and isolated phenomena, a predominantly industrial town. It might be described as a milling community, super imposed on an old Indian town. It is situated in the Bhima Basin on the watershed of the Alila, feeder of River Sina.

The district is surrounded by Ahmednagar and Osmanabad districts in the north Osmanabad and Andhra Pradesh in the East, Sangli district and the Karnataka state to the South and Satara and Pune districts towards the West. The climate of Solapur is described as healthy and dry except in the months of March, April, May. It is agreeable and free from extremes of heat or of cold. All over the district the rain fall is scanty. The average annual rain fall in the district is about 25 inches. The total area under forest is 403.23 square kms. All these forests are scrub forest growing thorny bushes.

Both kharif and rubi crops are grown in the Solapur district but area under rubi crops in predominant.

Solapur is a city of important industries such as textile mills, oil mills, bidi factories, footwear manufactures, sugar factories, bakeries, furniture makers etc. There are 8000 power looms and 15000 handlooms, 29 bidi Industries and 98 oil mills, 80 tel-ghani units situated in the different areas in the city. These industries lead to increase an opportunity of employment in Solapur. Edible oil industry is one of the important industries developing in the city because of an increasing production of oilseeds such as groundnut, sunflower, and safflower in Solapur district and in the states of Maharashtra, Karnataka and Andhra Pradesh, Solapur city is located on the boundaries of states of Karnataka and Andhra Pradesh. Therefore the raw material for oil mills i.e. oilseeds is easily available to the oil mills and to the tel-ghani units.

The population of Solapur city increased from 2,77,087 to 8,05,250 during 1951 to 2001. This increasing trend of population also leads to increase the demand for food-grain and consumer

goods and services. This also motivates to increase the number of industries producing consumer goods and services.

There are 11 Talukas in Solapur district consist 1089 villages. Solapur city market is only market to the village people of Solapur district. This also boosts to develop the industrial production sector of Solapur city.

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CHAPTER – IV

GOVERNMENT POLICIES TOWARDS OIL INDUSTRY

4.1 INTRODUCTION:

INDIAN AGRICULTURE, during the last 3 decades, has made considerable progress, particularly in respect of food crops such as wheat and rice in irrigated areas, through the much-touted green revolution of the 1960s. However, performance has not been so good in respect of other crops like oilseeds, pulses, and coarse cereals. Therefore, after achieving self-sufficiency in food grains, the government is of late focusing attention on these agricultural commodities. The oilseed sector has been an important area of concern and interventions for Indian policy makers since the early 1970s when India first became deficit in edible oil. Interventions have been significant, including measures such as price support, technological and market interventions, trade barriers (tariff and non-tariff), and licensing provisions.

India occupies a prominent position on the oilseeds map of the world in terms of both acreage and production. The Indian vegetable oil economy is the world's fourth largest after the United States, China, and Brazil. The following table 4.1 shows the share of percentage in Acreage/Production of India in the world.

Table 4.1

Share of Percentage in Acreage/

Production of India in the World

Sr. No.	Particulars	Percentage Share in Acreage/ Production of India in the World
1.	Oilseeds Output	8.4
2.	Edible Oil Production	6.6
3.	Export of Pool Edible Oil	6.4
4.	Vegetable Oil Production	8.9
5.	Vegetable Oil Import	5.7
6.	Edible Oil Consumption	9.9

SOURCE: Vijay Paul Sharma, Saradendu Patnaik, Hiren Tilak, 2007, Edible Oils and Oil Seeds Economy of India, published by Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi, p. 1.[11]

Currently, India accounts for about 8.4 percent of world oilseeds output, 6.6 percent of global production of oil meal, 6.4 percent of world oil meal exports, 8.9 percent of world vegetable oil production, 5.7 percent of vegetable oil import and 9.9 percent of the world edible oil consumption (Oil World Annual, 2005). This sector has also an important position in Indian agriculture covering an area of about 23.4 million hectares (12.5% of gross cropped area for 2000-01) and total production of about 25.14 million tonnes in 2003-04. Oilseeds accounted for about 10.8 percent of the value of output

from agriculture and about 1.8 percent of the gross domestic product (at current prices) during 2003-04 (CSO). In the last 5 years, oilseed production in the country has increased from 24.7 million tonnes (1998-99) to about 25.14 million tonnes (2003-04).

A wide range of oilseed crops is grown in different agro-climatic regions of the country. Three oilseeds– groundnut, soybean and rapeseed/mustard–together account for over 80 percent of oilseeds output. Groundnut is the most important crop with an estimated production of 8.2 million tonnes in 2003-04 grown mainly in Gujrat, Andhra Pradesh, Tamil Nadu, Karnataka, and Maharashtra. The second most important oilseed crop is soybean (7.9 million tonnes), which is grown in Madhya Pradesh, Maharashtra, and Rajasthan account for more than 90 percent of production. Rapeseed and mustard is the third important crop in terms of acreage and production and is mainly grown in Rajasthan, Uttar Pradesh, Gujrat, Madhya Pradesh, West Bengal, Punjab and Haryana. Other important oilseeds are sunflower, safflower, sesame, nigerseed, linseed, and castorseed. Apart from West Bengal and Rajasthan, Gujrat has also become a major sesame producing state. Coconut is the most important plantation crop.

Between 1985-86 and 2003-04, production of oilseeds increased from 10.83 million tonnes to 25.14 million tonnes, largely through improvement in yields (GOI, 2005). Average yield increased from 570 kg./hectare in 1985-86 to 1072 kg./hectare in 2003-04. However, the productivity levels of oilseeds in the country are very low compared to world average and other countries (GOI, 2005). Increase in area also contributed to higher production of oilseeds in the country. Area planted with all oilseeds increased from 19.02 million hectares in 1985-86 to 23.44 million hectares in 2003-04.

The area under irrigation increased from about 17 percent to 23 percent in 2000-01. However, production witnessed a declining trend in the subsequent years and was as low as 15 million tonnes in 2002-03. Industry experts believe that the actual crop output may be even lower because of decline in area and yield levels mainly from drought conditions prevailing in the major production regions and fall in the domestic prices of edible oil and oilseeds because of large-scale imports in the recent years. Imports of edible oil have gone up from nearly 1 lakh tonnes in the early 90s to 17.50 lakh tonnes in 1996-97 to 51.1 lakh tonnes in 2002-03 and 40 lakh tonnes in 2003-04 (SEA, 2005).

India, which was once self-sufficient in edible oilseeds and oil and a substantial exporter of oilseeds, meals, extractions and edible oil till the mid 60s, has become the largest importer of edible oil importing nearly half of its domestic supplies. With stagnation in production as well as rise in population, oilseed production fell far short of its demand in the early 70s. Even more disappointing was the fact that the oilseeds sector remained virtually insulated from the green revolution, which occurred in irrigated areas during the late 1960s and early 1970s. By the mid-80s, India became a major importer of edible oil, constituting about 1-third of total supply (Gulati, 1996)[11], next only to petroleum products despite the fact that India had the world's second largest area of about 18 million hectares under oilseeds (Gulati and Kelley, 1999). This was a matter of serious concern for the policy makers and a decision was taken to achieve self-sufficiency in edible oilseeds in the 1990s.

4.2 Government Policies: POLICIES

The initial strategy to overcome stagnant oilseed production was to promote technological change in oilseed production and processing through centrally sponsored schemes. The National oilseeds Development Project (NODP) was initiated in 1984-85 and launched in 1985-86 by reorienting the existing centrally sponsored schemes for oilseeds development. In 1986, the government set up the Technology Mission on Oilseeds (TMO). The main goal of the mission was to achieve self-sufficiency in edible oil through rapid technological change in oilseed production as well as post-harvest technologies, strengthening the input services and support services, delivery, price support, and improving institutional infrastructure associated with oilseed industry and marketing. Within this mission, the Government of India sponsored a programme called oilseeds Production Thrust Project (OPTP) in 1987-88 to supplement the efforts of the state governments to accelerate production of 4 major oilseeds, namely, groundnut, rapeseed - mustard, soybean and sunflower covering 246 districts in 17 states (World Bank, 1999). In January 1989, the government of India announced its integrated policy for oilseeds to reduce volatility in domestic prices by prescribing a price band and maintaining prices within the prescribed band, reviewing PDS prices, supporting farmers with technologies and inputs to increase production, and constituting an empowered committee to supervise the implementation. In 1990-91, the National oilseeds Development Project (NODP) and OPTP were merged into a single programme called the oilseeds Production Programme (OPP). In 2001-02, OPP covered 408 oilseed-growing district spread over 28 states and included 9 major oilseeds cultivated in the country.

As a result of these developments, there has been a significant increase in acreage as well as production of oilseeds since the 1980s in rain-fed regions, particularly in areas having low and erratic rainfall. India achieved nearly self-sufficiency in edible oil by 1992-93, when imports of edible oil came down to about 3 per cent of total consumption. During this period, additional area was brought under oilseeds through crop intensification and crop substitution and partly from kharif fallows. Area shift primarily took place in coarse cereals and in some regions in pulses and wheat. A crash programme for quality seed production of groundnut and soybean was introduced during the ninth plan. The outlay for 2002-03 was about Rs. 1163.30 crore, out of which the central government's share was Rs. 93 crore. In view of the significance of oil palm cultivation, the Oil Palm Development Programme (OPDP) was launched during the eighth plan with an outlay of Rs. 126.20 crore. The scheme was continued during the ninth plan and has been restructured as the Integrated Scheme of oilseeds, Pulses, Oil Palm and Maize (ISOPOM) for implementation during the tenth plan.

Government interventions in the Indian oilseed sector reflected not only a drive for achieving self-sufficiency in vegetable oil but also in ensuring equitable distribution. Edible oil were included in the Public Distribution System (PDS) in 1974 and accounted for a quarter of domestic supplies. The PDS edible oil prices were 40-80 per cent lower than market prices (World Bank, 1999). However, there are conflicting views about the efficacy of PDS. Until the early 1990s, the edible oil sector was highly protected domestically through industrial policy/licensing, small-scale industrial reservation, and restrictions on inter-state movement, and from external markets through various non-tariff barriers such as quantitative restrictions on

imports and exports and canalization of imports. However, India embarked upon a liberal policy framework in the early 90s and initiated domestic market reforms, which were reinforced by singing the Uruguay Round Agreement on Agriculture (URAA) and becoming a member of the World Trade Organization (WTO) in the mid 90s.[6]

Production of oilseeds and oil has been able to keep pace with the demand for edible oil, which has risen at about 5 per cent growth rate per annum. The demand-supply gap has necessitated import of edible oil. The government, with a view to avoiding scarcity of edible oil and consequential rise in prices, and keeping its commitment to the WTO and domestic market reforms, opened up the edible oil sector and allowed import of edible oil.[7] In April 1994, import of palmolein was shifted from the negative list of imports to Open General License (OGL) at 65 per cent import duty. This was followed by enlarging the basket of oil under OGL import in 1995, when all edible oil except coconut oil, palm kernel oil, RBD palm oil and RBD palm stearin were brought under OGL imported at 30 per cent duty. However, opening-up of the edible oil sector with low import duties flooded the Indian market with cheap imported edible oil, which had significant adverse effects on the Indian edible oil processing industry as well as oilseed producers. Import duties on edible oil were revised upwards, 85 per cent on refined oil except in the case of soybean oil and refined mustard oil where the duties were 45 and 75 per cent, respectively. The import duty on crude palm oil was raised from 65 to 80% and for refined palm oil and RBD palmolein from 75% to 90% in February 2005 (Table 4.2). The government has also allowed import of oilseeds; however, there has

Table 4.2

Import Policy for Edible Oil and Oilseeds

April, 1994	Import of RBD palmolein placed on OGL with 65% import duty.
March, 1995	Import of all edible oil (except coconut oil, palm kernel oil, RBD palm oil, RBD palm stearin) placed on OGL with 30% import duty.
1996-97	Further reduction in import duty to 20% + 2% (special duty of customs) bringing total import duty to 22%. Another special duty of custom @3% was later imposed bringing the total import duty to 25%.
July, 1998	Import duty further reduced to 15%.
1999-2000	Import duty raised to 15% (basic) + 10% (surcharge) = 16.5%.
December, 1999	Import duty on refined oil raised to 25% (basic) + 10% (surcharge) = 27.5%. In addition, 4% SAD levied on refined on refined oil.
June, 2000	Import duty on crude oil raised to 25% (basic) + 10% (surcharge) = 27.5% and on refined oil raised to 35% (basic) + 10% (surcharge) + 4% (SAD) 44.04%. Import duty on Crude palm Oil (CPO) for manufacture of vanaspati retained at 15% (basic) + 10% (surcharge) = 16.5%.
November, 2000	Import duty on CPO for manufacture of vanaspati rose to 25% and on crude vegetable oil raised to 35%. Import duty on CPO for other than vanaspati manufacture rose to 55%. Import duty on refined vegetable oil raised to 45% (basic) + 4% (SAD) = 50.8%. Import duty on refined palm oil and RBD palmolein raised to 65% (basic) + 4% (SAD) = 71.6%.

Table 4.2 Contd.....

Import Policy for Edible Oil and Oilseeds...Contd..

March, 2001 (amended on 26.04.2001)	Import duty on crude oil for manufacture of vanaspati / refined oil by the importers registered with Directorate of VVO&F rose to 75% (for others import duty levied at 85%) except soybean oil, rapeseed oil and CPO at 45%, 75% and 75% respectively. The duty on refined oil including RBD palmolein raised to 85% (basic) except in the cases of soybean oil and mustard oil where the duty is placed at 45% (basic) and 75% (basic) respectively due to WTO binding. In addition, 4% SAD levied on refined oil.
October, 2001	Import duty on crude palm oil and its fractions, of edible grade, in loose or bulk form reduced from 75% to 65%.
November, 2001	Import duty on crude sunflower oil or safflower oil reduced to 50% up to an aggregate of 1,50,000 MTs (Tariff Rate Quota) of total imports of such goods in a financial year subject to certain condition.
November, 2001	Import duty on refined rape, colza or mustard oil reduced to 45% up to an aggregate of 1,50,000 MTs (Tariff Rate Quota) of total imports of such goods in a financial year subject to certain condition.
March, 2002	Status quo on import duty structure of vegetable oil / edible oil maintained. Import of vanaspati from Nepal be levied SAD @ 4%.
August, 2002	SAD is not applicable on vanaspati imported from Nepal under TRO.
March, 2003	Status quo on import duty structure of vegetable oil / edible oil maintained.
April, 2003	Import duty on refined palm oil and RBD palmolein reduced from 85% to 70% and not applicable on edible oil.
July, 2004	Import duty on refined palm oil and RBD palmolein raised from 70% to 75%.
February 2005	Import duty on crude palm oil raised from 65 to 80% and for refined palm oil and RBD palmolein from 75% to 90%

SOURCE: Vijay Paul Sharma, Saradendu Patnaik, Hiren Tilak, 2007, Edible Oils and Oil Seeds Economy of India, published by Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi, p. 4-5.[11]

[1] An actual user condition on CPO as well as crude palmolein imports has been imposed, where the actual users of CPO will pay concessional duty of 80%, while traders will have to pay the maximum duty of 90% for CPO imports.

been no import of oilseeds largely because of safety requirements imposed by the government. In August 2001, the government imposed the base import price of crude soybean oil and palm oil to avoid loss of revenue from under-invoicing by some importers. The bound rate of duty on edible oil varies from 45 per cent in case of soybean to 300 per cent in palm oil, groundnut oil, sunflower oil, safflower oil and coconut oil (Table 4.3).[2]

Table 4.3

Present Custom Duty Structure (%) of Crude and Refined Edible Oil

Item Description	WTO Binding	Current Rates of Duty on Crude Edible Oil	Current Rates of Duty on Refined Edible Oil
Soybean Oil	45	45	45
Palm Oil	300	80	90
Groundout Oil	300	75	85
Sunflower/Safflower Oil	300	75	85
Coconut Oil	300	75	85
Rapeseed/Mustard Oil	75	75	75
Palmolein	300	80	90
Other Oil	120/300	75	85
Oilseeds	40	30	-

SOURCE: Vijay Paul Sharma, Saradendu Patnaik, Hiren Tilak, 2007, Edible Oils and Oil Seeds Economy of India, published by Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi, p. 6.[11]

4.3 Tariff Value:

In order to prevent under-invoicing of edible oil imports, the government fixed a tariff value on import of some edible oil with effect from 3rd August, 2001 after which tariff value on these oil has been revised from time to time. In a recent notification, the department of revenue dated 15.02.2005 has reduced tariff value of crude palm oil and its fractions by US$54 per tonne for crude palm oil and US$74 for refined palm (RBD palm oil) to bring them closer to international prices. Prices were revised on the basis of world prices and import price of crude soybean oil was reduced to $497 a tonne from $510, crude palm oil to $417 a tonne from $433, and price of RBD palm oil to $432 a tonne from $435 (Table 4.4). The base import price of RBD palmolein was reduced to US$421 a tonne from US$445 while that of crude palmolein was fixed at US$418 a tonne, down from US$440 a tonne *(Financial Express*, January 3, 2006, Changes in Prices from November 16, 2005 to January 3, 2006).[3]

Another major policy change in palm oil imports announced by the government is revised minimum carotenoid content in crude palm oil to 250 ppm from the earlier 500 ppm and acid value to 4 from 2, which means the free fatty acid content should be higher at 2 per cent instead of 1 per cent earlier for being eligible to be categorized as crude palm oil.

The implementation of the World Trade Organization (WTO) Agreement on Agriculture (AoA) was expected to lead to tariff reductions around the world, although some trade barriers still remain. Importing countries such as Japan maintain high rates of effective protection for domestic industry.[16]

Table 4.4

Tariff Value (in US$ per tonne) for Edible Oil in India

Date	Crude Palm Oil	RBD Palm Oil	Crude Palmolein	RBD Palmolein	Crude Soybean Oil	Other Palm Oil
03.08.01	337	351	-	372	-	-
28.08.01	337	351	357	372	-	-
09.10.01	286	295	298	307	-	-
07.12.01	314	341	334	349	-	-
16.05.02	344	365	362	375	-	-
13.06.02	392	414	411	426	-	-
02.09.02	392	414	411	426	542	-
26.11.02	432	460	454	470	542	-
03.12.02	432	460	454	470	600	-
14.05.03	390	426	415	434	537	-
17.10.03	430	451	450	464	591	438
29.10.03	472	503	497	515	643	484
14.11.03	504	543	532	552	643	523
03.03.04	504	543	532	552	710	523
31.05.04	504	543	532	552	628	523
15.09.04	454	489	479	497	565	471
31.01.05	454	489	479	497	565	471
15.02.05	400	415	412	425	565	410
24.02.05	400	415	412	425	565	410
01.03.05	400	415	412	425	485	410
14.03.05	400	415	412	425	535	410
31.03.05	423	429	432	438	558	426
29.07.05	423	429	432	438	558	426
31.08.05	423	429	432	438	558	426
16.09.05	397	418	414	427	506	408
30.09.05	402	420	418	430	508	411
15.10.05	426	436	438	447	518	431
31.10.05	434	439	443	449	513	437
16.11.05	433	435	440	445	510	434
03.01.06	417	432	418	421	497	425

SOURCE: Vijay Paul Sharma, Saradendu Patnaik, Hiren Tilak, 2007, Edible Oils and Oil Seeds Economy of India, published by Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi, p. 6-7.

Ongoing changes in agricultural policies, notably in developed countries, will affect world supply conditions for major oilseeds, which have implications for Indian oil sectors. Liberalization of imports of edible oil would have significant effects on domestic prices and as a consequence oilseeds prices may fall below the support prices. This will result in production of oilseeds less profitable, which have an adverse effect on acreage under oilseeds. Many are convinced that policy reforms in the oilseeds sector may alter oilseeds producers' livelihood since oilseed production has been an economic backbone in many disadvantageous (rained and dry land) areas of the country for many decades.[4]

4.4 Strategies and Policies:

a) Oilseeds Development Through Plan Era:

In view of several constraints noticed in 4th plan period, 2 different approaches namely; area approach; and; problem oriented approach were thought of. The first approach aimed at rapid growth in favourable years and the latter was to ensure predictable performance even in unfavorable periods. Three pronged drive implemented for this consisted of:

i) Adoption of package of practices in selected districts of important oilseeds producing states,

ii) Bringing more area under irrigation in command areas of Southern states and Rajasthan; and

iii) Adoption of agronomic measures for soybean and sunflower to boost their yields and reach the target of 12 million tonnes in 5th plan.

Supplemental efforts included:

a) Launching of IODP (Integrated oilseeds Development Programme),

b) Extension of oilseeds to new irrigated areas and

c) Development of non-traditional oilseeds like soybean and sunflower.

Several deficiencies were observed during the 5th plan period. Production and distribution of improved seeds suffered due to inadequate resources and efforts. Epidemic of pests in groundnut led to serious loss of production. No subsidy was available for control measures which were expensive. Adequate quantity of good seeds for mini kit scheme was not available. Due to halting of progress is enlarging the area under irrigation full benefits of superior technology could not be realised under adverse conditions. There was lack of adequate market support to non-traditional soybean and sunflower and shortage of quality seeds of yellow variety.

Special Secretaries Committee set up in 1977-78 to study problems associated with oilseeds development and suggest measures, offered some short term and long term recommendations. Short term measures recommended by the committee were to pay greater attention to programmes on production and distribution of seeds, expansion of non-traditional crops like soybean, sunflower and toria, use of phosphatic fertilisers to groundnut in rain-fed areas, ground and aerial spraying of insecticides on massive scale for groundnut, rape and mustard and to fix support prices for groundnut, soybean, mustard, sunflower and make arrangements for carrying out support operations. Long term recommendations were expansion of irrigated groundnut crop, intensive sesame

development work and to evolve high yielding, high oil bearing oilseeds through research efforts.

Sixth plan strategy aimed at rectifying the deficiencies noticed during previous plan efforts. Key points identified were to introduce resource mobility schemes like production and distribution of improved seeds and plant protection materials through centrally sponsored schemes, to transfer the responsibility for schemes relating to soybean and sunflower, maximum expansion in area under irrigated groundnut and rape and mustard in key states and to bear full expenses by the govt. of India for command area projects, demonstration schemes on rape and mustard in important states like Rajasthan and Orissa and to replace more wheat area under irrigation in West Bengal, Gujrat and Assam.

Seventh plan, in order to carry forward the increasing trend in area especially in the case of sunflower, soybean, and summer groundnut in certain states, proposed the continuation of National oilseeds Development Project. Project was set up as a Centrally Sponsored Programme by providing operational flexibility to state Governments to draw up programmes suited to local conditions. As raising profit margins for farmers as well as reducing variability in yields and prices are of prime importance in the case of oilseeds, seventh plan envisaged encouraging vertical integration of production, marketing and processing through the Growers Co-Operatives. In order to achieve these objectives, it was proposed to strengthen the state-level oilseed production. Growers Federation was organised under the National Dairy Development Board's Oilseeds Project. Besides, a major Technology Mission for Oilseeds was also set up during seventh plan period.

The responsibilities of the Technology Mission included

i) ensuring input supplies and technology packages in 180 districts to increase oilseed production and productivity,

ii) ensuring maximum production by developing location specific technologies for each of the crops,

iii) producing sufficient quantities of breeder seeds, foundation seeds and certified seeds of different crops,

iv) adopting mass multiplication of oil palms and coconut through tissue culture technology,

v) developing facilities for importing high oil yielding plants from other countries,

vi) modernising cryo preservation of the germ plasm of oilseed crop,

vii) organising seed-gardens for superior quality varieties and hybrid oil palms/coconut

viii) creating awareness about improved and emerging technologies in select areas by demonstrations,

ix) organising training for workers on safest technologies and

x) processing technologies to increase output of oil and quality.

b) The Oilseeds Mission:

The Standing Committee of oilseeds Mission met in February, 1986 and took some important decisions for efficient implementation of the plan of the mission. It was decided to divide the operational responsibility among 4 sub-missions dealing with technology, production, inputs and marketing cum processing support. Each of the submission was proposed to chalk out plan of operation in

pursuance of the common objectives and to contribute for further development of the programme through monthly reviews.

If it is essential to continuously upgrade the technology of oilseeds cultivation through breeding of more productive and location-specific varieties of oilseeds crops as well as to develop cultural practices for stepping up yield.

Steps being taken for the increase in yield of oilseeds included research carried out through the production of better quality and healthy seeds and production of breeder's seeds to promote the seed multiplication activities. Also training were given to the extension staff in different states particularly the subject matter specialist (SMS) and providing continuous research support to the state Extension Agencies to solve the location specific problems.

c) Centrally Sponsored Schemes–Oilseeds Production Programme:

The measures taken by Government have served the purpose to a very large extent. In order to achieve self sufficiency in the oilseeds requirement of the country, 2 Centrally Sponsored Schemes named National oilseeds Development Project and oilseed Production Thrust Project have been merged during 1990-91 and made into a single scheme- Oilseed Production Programme. Objectives of this scheme is to provide financial assistance to various states for production and distribution of quality seeds, plant protection measures including supply of chemicals and equipments and organising demonstrations of advanced technologies.

Technology Mission on Oilseeds Production has become successful. Its efforts on enhancing self reliance in various fields of

production, processing and management technologies of oilseeds are commendable. An integrated oilseeds Policy was also announced by government in January 1989. Objectives of the policy are to assist farmers with technology inputs and attractive prices and to safeguard the interest of the consumer with reasonable prices. National Dairy Development Board is nominated as the market intervention agent for procurement of oilseeds and oil for building a buffer stock so as to ensure an incentive price to the farmer, in a sequel to the announced policy. NDDB is also directed to release the buffer stocks during the lean season at moderate prices to the consumers.

d) Intensive Oilseed Development Programme (IODP):

With a view to boost oilseeds production in the country govt. of India in 1969-70 initiated a central Sponsored Scheme named as “Intensive Oilseed Development Programme” (IODP). The Programme Evaluation Cell took up the evaluation of the IODP in 1976-77 to study the performance of some of the oilseed crops, i.e. groundnut, rape & mustard, sesame, castor, linseed, soybean and sunflower. The study was expected to assess impact and adequacy of IODP and suggest measures for improvement, assess the extent of adoption of recommended package of practices and analyse reasons for variation, examine adequacy of research and development support, study role of extension agencies and study availability of needed inputs.

Planning Commission, as the policy making body at the national level, undertook the evaluation of IODP towards the end of 70s. The evaluation study identified the strengths and weakness of the programme and the problems in respect of the major oilseeds

grown in this country under IODP. The policy frame work for oilseeds development was also critically examined in the light of the experiences gained while implementing the IODP and made suggestions for future planning.

For improving management of oilseeds reorientation, oilseed Development Programme is important in respect of research, extension, infrastructural and institutional facilities, strategy may be developed on long term basis towards rain-fed oilseed crop/ development. More command areas may be set apart for oilseed development to provide the needed protective irrigation for groundnut, sesame and castor. Policy guidelines for IODP for all oilseeds both in central and state sectors shall be laid down, avoiding adhocism.

Arrangement to assess, develop and provide infrastructural facilities to cover

i) Resource potential,

ii) Availability of need inputs,

iii) Institutional credits,

iv) Marketing and

v) Processing is another aspect for better management.

Planning should be realistic and should start from grass root level instead of other way about. Organisational pattern between states/districts should be rationalised and rendered uniformly. Planning process, as in major oilseed crops, should be de-centralised to involve local bodies to formulate realistic targets in respect of these crops. Also IODP may be reoriented towards growing of minor oilseeds.

e) Other Governmental Measures:

Government of India had taken several steps to provide remunerative prices to the growers and to stabilise the oilseeds and edible oil prices. For nearly a decade, Government of India fixes minimum support prices for oilseeds also like other agri-commodities. Minimum support prices (per quintal) fixed for different oilseeds by Government for crop years 1988-89, 1989-90 and 1990-91 are given in Table 4.5.

Support price for Toria and safflower was fixed for the first time in 1985-86 at Rs. 360 and Rs. 400 per quintal respectively. In case of Copra, support price was fixed for the first time in 1989-90 only. The government has for the first time announced a minimum support price for "Ball" Copra on edible variety in March, 1991 at Rs. 1850 per quintal for fair average quality. Market intervention by NAFED was ordered by Government of India when the ruling market prices approached or fell below minimum support price level.[8]

Table 4.5

Minimum Support Prices of Oilseeds

(Rs. per Quintal)

Sl. Number	oilseeds	1988-89	1989-90	1990-91
1.	Groundnut in Shell	430	500	580
2.	Soybean (Black)	275	325	**p**350
3.	Soybean (Yellow)	320	370	400
4.	Sunflower Seed	450	530	600
5.	Rapeseed & Mustard	460	575	600
6.	Toria	430	545	570
7.	Safflower Seed	440	550	575
8.	Copra	--	1500	1700

SOURCE: Modi C.P., 20.11.1987, Ph.D. thesis on Problems and Prospects of Edible Oil Industries in Gujrat, submitted to Patel University, Gujrat.

f) Measures of Augment Edible Oil Production:

Department of Civil supplies at the Government level had initiated several measures to augment edible oil production. Some of the measures included:

i) Enhancement of excise rebate for using rice bran oil in vanaspati and

ii) Tie up of research and development work to develop efficient rice bran stabilisers, between industry and research based institutions.

Government of India has already formulated a pricing policy for protecting the farmers of oilseeds from very sharp fall/decline in their prices. Consumer's interest is taken care of by regulating the price of edible oil and vanaspati. Other measures under consideration are excise relief on hexane used for solvent extraction of vegetable oil, solvent extracted oil used for direct consumption and hardened rice bran oil used for soap manufacture.

Attempts to produce corn oil should be initiated since it is likely to be a very potential source of edible oil supply. Measures necessary for increase in consumption of non-conventional oil for direct human consumption include:

i) Modification of oil policy to make obligatory certain percentage use of edible grade non-conventional oil (including rice bran oil) in vanaspati manufacture;

ii) Formulation of productivity linked export policy;

iii) Demonstration of food, preparations using properly refined non-conventional edible oil;

iv) Adoption of mass media campaigns for the usage of non-conventional edible oil and de-oiled meals as cattle feed;

v) Provision of subsidised sale of refined oil from non-conventional sources initially to make them available till production picks up substantially.

g) Blending of Edible Oil:

Vanaspati industry has been using a blend of edible oil for a long time but refined oil was not allowed to be blended till December, 1985. It is common knowledge that edible oil users in different regions exhibit their strong preferences for certain edible oil, for example coconut oil in Kerala, mustard oil in West Bengal and Eastern region, groundnut oil in Western India and so on. Fortunately imported and non-traditional oil like palmolein and soybean oil have found favor with the consuming public in this country. Some oil specially soybean oil develop deteriorative changes like intense colour and off-flavor, during storage and cooking. Partial hydrogenation and winterisation has been accepted in some of the advanced countries only. Based on those experiences outside India, a suggestion was mooted to blend different edible oil in acceptable proportions to upgrade their quality and improve them nutritionally.

The need for blending edible oil and its possibilities received top priority attention since the early 80's. Special Committee constituted by the Union Civil Supplies Department in Dec. 1984 considered various aspects of providing the consumers more edible oil at cheaper price, better nutritive value, good stability and storage characteristics by making use of the technology of blending

traditional and non-traditional oil in proportions acceptable to the consumers.

Principles for blending vegetable oil are:

i) Blends should conform to PFA regulations;

ii) Blends should yield better oil with better functional properties, nutritive value and cost, keeping quality etc. and

iii) They should meet statutory declarations in terms of proportion of ingredients or any other obligations.

In December, 1986 govt. of India amended PFA rules to allow blending not less than 20 percent by weight of groundnut oil with refined soybean oil with suitable declaration on the labels. As a major policy initiative, Government of India allowed the manufacture and distribution of blend of soybean oil with groundnut oil to promote marketability of non-conventional oil for direct consumption, later, the Government extended this approach to other oil to improve consumer acceptance.

4.5 National Dairy Development Board (NDDB):

NDDB was appointed by Government of India as Market Intervention Agency in April 1989 for an initial period of 5 years with an objective to regularise prices through buffer stocking operations. The backward linkages of MIO with the oilseeds and Vegetable Oil Project of NDDB, has given a unique position to the buffer stocking operations in the form of vertical integration of production, procurement, processing, storing and marketing. The significant achievement of MIO has been the intervention in consumer market by the introduction of Dhara consumer packs. In addition, Lokdhara a blend of groundnut oil and palmolein oil has also been launched

recently. On the lines of National Milk Grid a National Oil Grid has been established in order to resolve the regional and seasonal imbalances. The net effect of the concerted efforts by TMO and NDDB has been clearly seen in the unprecedented and steady growth in the production of oilseeds during the operational period of MIO. An important factor that led to the MIO was the drastic reduction in imports. However, MIO faces challenges from private trade as the latter always uses the options of adulteration and tax evasion in arriving at parties. Due to this, as well as the non-availability of the required imported oil, keeping the prices within a band could not be achieved for a short while. Since then Dhara sales have registered stable levels becoming the price/quality leader in the market place.

The Oilseed Growers' Co-Operative Project (OGCP) was initiated in 1979 in the state of Gujrat with the registration of the Gujrat Oilseeds Growers Federation (GROFED). Initially, the project followed a 2 tier structure, with the oilseed Growers Co-Operative Societies (OGCS) being directly affiliated to the state level Federation. Since 1987, project implementation has been under the 3 tier structure, in order to ensure better management and better focus for implementation. Under the 3-tier structure, the OGCS are affiliated to a Regional Union covering 1 or more districts.

The NDDB has been able to create a network of farmer Co-Operatives and farmer owned processing facilities across the country. As of now a total of about 5 thousand Village Level Co-Operative Societies covering about 28 thousand villages have been registered under this project. Membership has risen to about 800 thousand covering about 1 lakh and 8 thousand hectares of land. The following orders of capacities have been generated.

Table 4.6

Orders of Capacities

Sr. No.	Particulars	Capacity
1.	Oil Milling Capacity	3255 MT/day
2.	Solvent Extraction Capacity	2010 MT/day
3.	Refining Capacity	738 MT/day
4.	Oilseeds Storage	170000 MT
5.	Oil Storage	81250 MT

SOURCE: Vijay Paul Sharma, Saradendu Patnaik, Hiren Tilak, 2007, Edible Oils and Oil Seeds Economy of India, published by Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi.

Initially, the project covered only groundnut in Gujrat and soybean in Madhya Pradesh. Gradually, its coverage widened in terms of geographical as well as oilseeds coverage as shown below.

Table 4.7

Geographical and Oilseeds Coverage

Year	State	Major Oilseeds
1979	Gujrat	Groundnut, Mustard, Cottonseed
1979	Madhya Pradesh	Soybean
1980	Andhra Pradesh	Groundnut, Sunflower
1981	Tamil Nadu	Groundnut, Ssunflower
1982	Orissa	Mustard, Nigerseed, Groundnut
1983	Maharashtra	Groundnut, Sesame, Sunflower, Safflower
1984	Karnataka	Groundnut, Sunflower, Safflower
1991	Rajasthan	Mustard
1992	Uttar Pradesh	Mustard
Planned Coverage:		
	Karnataka	Oil Palm
	Kerala	Oil Palm

SOURCE: Vijay Paul Sharma, Saradendu Patnaik, Hiren Tilak, 2007, Edible Oils and Oil Seeds Economy of India, published by Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi.

Together the Co-Operatives procured around 6 lakh metric tonnes of oilseeds during 1990-91. Of the total oilseeds procured soybean, groundnut, and mustard are of the order 52, 22 and 20 percent respectively. A small part of this was traded in bulk, while the rest was crushed in processing plants owned and operated by the Co-Operatives, as well as in custom hired units. The Co-Operatives also brought oil in bulk from the market to meet their operational requirements. Imported rapeseed oil and palmolein oil are also being routed to consumers through the Co-Operatives.

Oilseeds and Vegetable Oil Project of the NDDB has been the second major intervention in the sector. Based on a network of oilseed Growers' Co-Operatives, with the help of donated oil from the Co-Operative Leagues of the USA and Canadian Co-Operative Association the project which was started in 1979 now covers Gujrat, MP, AP, Tamil Nadu, Orissa, Maharashtra, Karnataka, Rajasthan and U.P. The oilseed coverage has also been extended from groundnut, mustard, cotton seed, soybean, sunflower, nigerseed, sesame and safflower. Besides procurement, processing and marketing, the project has undertaken major production enhancement activities. Along with the increases in membership and the area under coverage, large scale oil milling, solvent extraction, refining and storage capacities have been created. As a result, the producer prices have gone up in the areas of coverage over the all India levels. However, the production of overall oilseeds remained stagnant till 1987-88 due to the use of imported oil at lower prices against producer interests.

Technology Mission on Oilseeds which was started in 1986 with a goal of self-reliance by the end of the eighth 5 year plan has made concerted efforts in reducing the level of imports by increasing

domestic production. In collaboration with organisations like ICAR, CSIR, DAC, NODP, OPTP etc., TMO has made rapid strides in achieving breeder varieties of seeds, batch type processes for rice bran stabilisation and sunflower decortication, and improved expellers etc. However, the most important achievement of TMO has been the initiation of Integrated Policy on oilseeds and the consequent implementation of the Market Intervention Operation which has formed in it the most effective intervention in the sector.

4.6 Technology Mission on Oilseeds:

A Technology Mission on Oilseeds was launched in 1986 to increase production of oilseeds in the country and attain self-sufficiency. Pulses were brought under the Technology Mission in 1990. Before the Mission was launched in 1985-86 oilseed production was 10.83 million Tonnes. During 1995-96 it was estimated at 22.42 million Tonnes which is a record. Soybean rapeseed and mustard largely contributed the increase in production.

Production of Pulses has been many ups and downs, which is expected to be checked under the Mission. The country grows mainly 9 oilseeds with groundnut, rapeseed and mustard accounting for 62% of the total production lately; soybean and sunflower have shown major growth potential.

The demand for edible oil was growing at a much faster pace in order to meet the growing demand, India had to import large quantity of edible oil. The import which was only 3.77 percent of total availability of edible oil during 1971-72 rose to 29.55 percent during 1980-81 requiring India to spend large amount of foreign exchange. In order to increase the production of oilseeds, several steps were initiated during 80's. National oilseeds Development Project (NODP)

was launched in 1985-86. Real boost in oilseeds production came only after establishment of Technology Mission on Oilseeds (TMO) during May 1986. Besides TMO, the oilseeds Production Thrust Project (OPTP) were initiated in 1987-88. NODP and OPTP were merged in 1990-91 under 1 programme, i.e. oilseeds Production Programme (OPP). The minimum support prices for oilseeds crop were fixed and National Agriculture Co-Operative Marketing Federation (NAFED) was appointed to provide price support to oilseeds growers and Market Intervention Operation (MIO) in oilseeds and edible oil were introduced to maintain price level and NDDB was appointed as the agency to carry out MIO.

Technology Mission for Oilseeds has triggered the mechanism to increase the production and productivity of all oilseeds crops. Due to its efforts, oilseeds production had almost doubled from around 10 million tonnes during 1982-83 to 21 million tonnes during 1992-93. India had almost achieved self-sufficiency and imports were at negligible level. Regarding trade policy till the end of 80s, except for traditional agriculture products like tea, coffee and tobacco, both import and export were kept restricted.

However, during early 90s that is Phase III, the trade policy regime has undergone a considerable change. With the onset of economic reforms in India since July 1991 and signing of the GATT in 1994, India has decided to open up economy to global force. As a part of this policy, the erstwhile restrictions imposed on import of edible oil were to a great extent removed by placing most edible oil on OGL and import duty was substantially reduced from 65 percent to 20 percent. Since then import increased significantly. It is obvious that import of edible oil has affected the domestic prices and they have remained low.[2(3)] These imports during first 6 months

(Nov 1999 – April 2000) are estimated to have touched 18.68 lakh tonnes, recording a 32 per cent increase over 14.18 lakh tonnes during the same period of last season. Total import during the last season had touched a staggering 43.93 lakh tonnes as against 20.89 lakh tonnes during 1997-98 season. This flooding of marketing with cheap edible oil has hit hard the oilseeds growers in the country, forcing them to make distress sales of their produce. It has also adversely affected domestic oil industry. Hence the Union Government has recently (June 2000) decided to raise import duty with a view to provide much needed relief to the oilseeds sector in the country, including the farmers and vegetable oil industry from excessive imports. This is in line with the government policy to protect farmers as well as domestic industries from cheaper import.

Still it is felt that this increase in import duty is not enough to protect them. It may affect the production of oilseeds in the country. This consequence may change the cropping pattern, affect employment and lower down farmers' income.

Consumers may be deprived of some oil varieties which have specific uses. The poor farmers totally dependent upon oilseed economy may be the worst sufferers as most of the oilseeds are grown in arid and semi-arid areas where income level of farmers is generally low. Also parts of oilseeds plants are major source of nutrition for a large section of poor and marginal farmers as well as rural population living below poverty line.

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[2] The Economic Times, "Oilseeds and Tariff Tales", Suresh Shah, June 19, 2000.[2]

Since WTO negotiations to consider the liberalisation experience gained so far, are to start in March, 2001 the Directorate of Economics and Statistics, Ministry of Agriculture, Government of India asked the Agro-Economic Research Centre, Vallabh Vidyanagar to carry out a quick survey on "Likely Impact of Liberalized Imports and Low Tariff on Edible Oil Sector in Rajasthan" with the following objectives:

1. To assess changes in cropping pattern.
2. To find out impact on farmers income due to decrease in production and prices of oilseeds.
3. To find out likely impact on farmers' consumption pattern of edible oil and leafy vegetables particularly in the case of rapeseed and mustard.

4.7 Oil Industry and Government Control and Programmes:

There are many Government controls on the production of oil from the oil industries. If these controls are not there, it would have been an increasing tendency leading to the adulteration in the mind of the oil producers and dealers. If there is any adulteration either in the oil or in the oilseeds, it is a crime or a fine or the both shall be imposed. This mode of control is must because the oil is an essential consuming commodity. So it should be of pure quality.[9]

There are many provisions and directions given by the state Government, which are most useful and are essentials for the stability and establishing proper control on the oil industry. They are as follows:

1. The raw materials and oilseeds are to be examined properly and they are to be stored in a very suitable clean place and warehouse before their use.

2. Before crushing the oilseeds for the production of oil, it is essential to satisfy that, the oilseeds are not mixed with any foreign elements and articles.

3. The oil barrels, tins and tanks are to be cleaned daily.

4. The oil machineries such as ghanis, expellers and filters are always to be cleaned by waste-cotton.

5. The expellers and ghanis are to be cleaned before going to the production of different kinds of oil, to avoid the mixing of 2 different types of oil. In fact, there is a prevention and restriction for the sale of edible oil mixing with the other kind of oil.

6. To avoid non-edible oil to be mixed with edible oil, the oil mill owners should not crush the oilseeds of non-edible oil by the expellers which were used for the production of edible oil. If it is not done, then there is likely of mixing non-edible oil with edible oil. In that case, the first part of extracted edible oil should be taken into the non-edible oil.

7. Before filling the barrel and tins of edible oil, they should be cleaned. The barrels and tins which were used for non edible oil, should not be used for filling edible oil.

8. The barrels and tins in which the edible oil is filled in should bear the name, address of the producer, the name of the oil and also the production batch number. A Label should be affixed on the barrel.

9. The oil mill owners should sell their oil under the sale bill with guarantee of quality of oil. The oil mill owners should also keep the proper record and nothing with clear entries in the books and registers for their production and sales. This will help the oil mill owners at the time of any enquiry by any person.

10. The raw materials should be cleaned before they are used they should be stored in a proper place free from deterioration of quality of goods.

11. The oil produced by the oil mill owners should get examined for its quality and after getting the satisfied report about their quality of oil, the oil mill owners should sell their oil.

12. The place of production should be hygienic and full of ventilation. No any insects or white-ants must be there. As far as possible, the place of production should be kept cleaned daily.

The Late Prime Minister Mrs. Indira Gandhi had declared 20 points programme for the economic and social development of nation at large on 14th January, 1982, and it was mainly emphasised to grow more agricultural products.

New Twenty Point Programme contains the objectives, to remove the rural poverty, bigger harvest, better land reforms, health for all, education, justice to Scheduled Castes and Scheduled Tribes, equality for women, new opportunities for youth, concern for consumers and lastly response to administration. The following are the 2 important points covered under the 20 point programme.

1. Strategy for rain-fed agriculture to ensure better management of land and water resources; develop and distribute appropriate and improved seeds. Therefore, there is a more yield. The better seeds are given to the farmers for cultivation. They are of the good qualities. This has helped to grow better quality oilseeds which contain the maximum quantity of oil.

2. Secondly, there is an object concern for the consumer. It means bring essential consumption goods within easy reach of the poor, build a consumer protection movement. However, by the implementation of New Twenty Point Programme, our country became sound and self sufficient in respect of economic activities and social relation.

From 1951 and onwards we have many Five Years Plans for agricultural and industrial development of our country. It has seen that the agricultural output continued to grow at a steady rate during the 6^{th} Plan period. Therefore under the 7^{th} Plan major programme thrusts on special rice production and National Water-shed Development Programme for rain-fed agriculture, it is to be noted in the 7^{th} Plan the major progress is also to have National oilseeds Development Project.

4.8 National Oilseeds Development Project:

Recently, the area under sunflower, soybean and summer groundnut (irrigated) has been increasing significantly in certain states. It shows that the prospects of achieving self-sufficiency in oilseeds are bright provided special efforts are made to extend the available technology, evolve new technologies and ensure price and marketing support. The National oilseeds Development Project will be continued during the Seventh Plan period as a Centrally

Sponsored Programme by providing operational flexibility to the state Governments to draw up Programmes, since raising profit margins for farmers as well as reducing variability in yield and prices are extremely important in the case of oilseeds, the efforts at vertical integration of production, marketing and processing through the Growers' Co-operatives will be encouraged. In this context efforts will be made to strengthen the state Level oilseeds Grower's Federation, organised under the National Dairy Development Boards', oilseeds Project. Even today, the special efforts are made for the implementation of the programmes for the production of more oilseeds. The government at present has established the Committee under Panchayat Samiti under the guide lines of Integrated Rural Development Programme. In this way, the Government has paid the keen attention to grow more oilseeds in order to promote the oil Industry.

4.9 The government Control and Programmes for Edible Oil Industry:

a) Integrated Rural Development Programme:

In recent years, there has been greater stress on alleviation of poverty through special programmes such as the IRDP, NREP etc. The IRDP initially launched in 1978-79 was extended to all parts of India in October 1980. Basically this is a programme for raising the incomes of the poorest among the poor and to provide productive assets. The beneficiaries are the farmers and artisans. This programme is designed to develop self-employment in rural areas.

On 2nd October 1980, the programme has been applied and implemented in all 296 groups in the states. The rural family which has less than 3500 Rupees income in a year and the family holding

the Jirayat land of upto 2 hectares and who are below the poverty line, are promoted to have the more employments and to earn the more income. This was the basic object of such programme.[10]

b) National Village Service Programme:

To provide the employment to the persons of rural areas, is the main object of the programme. Upto 1981-82 this programme has been implemented with Rojgar Hami Yojana in the state and thereafter from 1982-83 the funds available from such programmes were utilised for the other programmes. To promote the plantation, digging of drinking water, wells, construction of houses, school buildings, tanks, play grounds, roads, and to provide the cattle-feed are the main objects under the implementation of the programme.

c) To Grow More Oilseeds Programme:

Government has decided to supply the oilseeds for cultivation on subsidy basis for Rubi season, kharif season and to promote more and more yield of oilseeds. The Gram Panchayat of village has undertaken the responsibility to implement this programme. This is how the Government programmes are implemented to grow more oilseeds in large quantity and of better quality.

d) Improvements in Technology and Machineries:

The production by hand ghani and also bullock ghani is not economical one. The improved machineries are used in the production of oil. The government has also promoted to use the improved machineries for production of oil. The expellers 4, 6 and 9 bolts are used for the production of oil.

e) Crop Insurance:

A crop insurance scheme has been introduced from 1985 kharif season. The scheme provides financial support to insured farmers in the event of a crop failure. All the farmers availing crop loans from the Co-Operative Credit Institutions, Commercial Banks and Regional Rural Banks for raising cereal crops or for raising dry land crops i.e. pulses and oilseeds are eligible for insurance to the extent of 150 per cent of the crop loan. The premium rates are 2% of the sum insured in the case of rice, wheat and millets and 1% in the case of oilseeds and pulses. Small and marginal farmers are entitled to a subsidy of 50% on the premium payable by them under the scheme.

4.10 New Policy for Small Scale Industry:

On 6th August 1991 the central Government of India, has published and proclaimed the new policies and programmes for the development of small scale industry. The oil industries are mainly the Small Scale Industries. There are very few big oil mills. The problems and difficulties of oil industries are also like the problems of small scale industries. The government has decided to promote the small scale industries by providing the various facilities mainly on the following facts:

a) The limit of investment for the small scale industries was Rs. 2 lakhs and now under the said new policy it is upto Rs. 5 lakhs. According to the programme of 1990 there was an investment of 60 lakhs for small scale industries and 75 lakhs for large industries. However, it was not implemented properly in the year 1990. So presently the central Government has decided to implement the same immediately, with full force.

b) The government has also decided to release the rigid rules for the establishment of small scale industry. The government further suggested having the simple and easy rules and regulations to be framed for the establishment of such industries.

c) In case of small scale industries the bills were not paid immediately, there was an undue delay therefore the scheme has been adopted by accepting and enacting the statutory provisions namely “Prompt Payment Act” to make the payment immediately and without delay.

d) The government is also thinking for the formation of capital to the small scale industries and, therefore, it is intending to accept and enact “Limited Partnership Act”.

e) Small Industries Development Bank of India is to start its services to provide the capital to small scale industries.

f) The labour facilities are also to be made available for the welfare of workers.

g) National Seeds Capital Scheme has extended its function to the larger area to cover the small scale industries.

h) The products produced by small scale industries are to be sold either in the inland or in the foreign markets and for the same, the Government programme and National Small Scale Co-Operations are to assist the same.

i) The small scale industries are to be given the priority in the distribution of raw materials.

4.11 Conclusion:

Even though the Government has prepared the suitable conditions and circumstances for the production of oil, however, the total production of oil has not been increased. The oilseed provided

under the scheme of subsidy has effected to have the more and more yield of oilseeds. The oilseed such as groundnut is not solely and wholly use for the production of oil only, but it is used by the people in the form of food daily. The production of groundnut and sunflower is more in the district of Solapur. As the part of groundnuts are sold into the interstate markets and sent to the other states for sale, the groundnut refined oil is imported from the Gujrat state, therefore the Government Plans and Programmes have proved failure and futile for the production of oil by the oil industries.

However, the production of oil is an important industrial activity. The edible oil is essentially required therefore the Government is always alert in framing and accepting the suitable policies for the production of oil. Hence, Government has many measures to promote the oil industries.

Proper Government controls should be implemented in Public Distribution System (PDS) so that there would not be any corruption in providing good quality of edible oil to the poor people of the state and so as to the nation.

Custom duties should be increased on import of edible oil so that the local and state markets would survive and for that proper policies and controls should be implemented in increasing acreage and production in the nation.

New innovations made by our scientists should be accepted and accordingly new modern big machineries should be made available to the oil mills of the country by initiative role of central and state Governments so that our nation become self-sufficiency i.e. it would depend less on imports of oil from other nations of the world.

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CHAPTER - V

GROWTH AND DEVELOPMENT OF OIL MILLS IN SOLAPUR CITY

5.1 INTRODUCTION:

Vegetable oil is an essential commodity of daily consumption and extensively used as raw material for Vegetable Ghee and Soap. Many factors are essentially responsible for the location of this industry in Solapur. The surrounding areas are suitable for the cultivation of groundnut, sunflower, safflower. Secondly, cheap labour is available in plenty. Thirdly, Solapur is a Railway Junction and well connected with the rest of the country. Also it is connected with Hyderabad, Aurangabad, Mumbai, Pune, Bijapur, Gulbarga etc. by National and state Highways. Fourthly, as it is a big city, banking and other commercial facilities are easily available and a ready market for consumption of oil exists automatically.

There were 3 big oil mills in Solapur in 1938-39. (D. R. Gadgil-Solapur City Socio Economic Studies, P.P. Number 133, 1965). They were located 1 each in Bhawani Peth, Murarji Peth and Sadar Bazar. These mills produced only groundnut oil and oil cake. The raw material required was only the groundnut which used to be purchased, mainly from local commission agents as well as from the agents outside Solapur, i.e. from Bijapur, Akkalkot, Gulbarga etc. and other areas in the neighborhood in Solapur city.[3]

There were 37 small and big mills registered with the Municipal Corporation of Solapur in 1967-68 (M. R. Bhandari and P. G. Gupta – “A Brief Study of Edible Oil Mills in Solapur City”

published by Shivaji University, Kolhapur–1969-70). Out of them 18 were actually working in July and August, 6 were found to have been sold out and 13 were closed temporarily mainly because of great fluctuation in the price of groundnut, groundnut oil and oil cake. 9 mills were governed by the Factory Act, as they employed more than 10 workers. But only 4 mills under Factory Act were actually working.[2]

Before the establishment of oil production by the expeller, the oil pressers were only in the form of small industries for the production of oil. It is true production capacity of oil depends upon the number of expellers, and the size of the expellers. Slowly, in the development of oil industries, the expellers by large or small have found the significant place for the oil industries. There were 2 types of expellers in use. One is known as a big expeller and other as a baby expeller. The following table shows the different expellers and their number in existing 31 oil mills in 1967.[11]

Table 5.1

Number of Expellers in Oil Mills in 1967

Sr. No.	Size	Foreign Made	Indian Made	Total
1.	Big	15	8	23
2.	Baby	Nil	33	33
	Total:	**15**	**41**	**56**

SOURCE: M. R. Bhandari and P. G. Gupta – "A Brief Study of Edible Oil Mills in Solapur City" published by the Shivaji University, Kolhapur 1969-1970.

5.2 Number of Edible Oil Mills in 2007-08:

During all the previous years, especially during the preceding 6 years i.e. from 2003 to 2008 oil mills in Solapur city supply the edible oil for the Solapur city. There is a special location Agro Industry for these oil mills. However, there is also an Agricultural Produce Market Committee (APMC) add a large part of the area has been specially kept and maintained for the establishment of oil mills from the last 6 years. At present there are 98 oil mills as productive units detailed under the following table. It shows the name of the oil mills, size of expellers, number of expellers and crushing capacity.

Table 5.2

Oil Mills in Solapur City in 2007-08

Sr. No.	Name of the Mill	Size of Expellers	Number of Expellers	Crushing Capacity in 8 Hrs.
1.	Mokale Oil Mill	33” x 6”	2	100 Bags
2.	Anand Oil Mill	33” x 6”	1	50 Bags
3.	T. K. Oil Mill	33” x 6”	2	100 Bags
4.	Vijay Oil Mill	33” x 6”	3	150 Bags
5.	Shri Oil Mill	33” x 6”	2	100 Bags
6.	Jyoti Oil Mill	33” x 6”	2	100 Bags
7.	Dipak Oil Mill	33” x 6”	1	50 Bags
8.	Shri Samarth Oil Mill	27” x 5”	1	30 Bags
9.	Vijaykumar Oil Mill	33” x 6”	3	150 Bags
10.	Shri Sangameshwar Oil Mill	27” x 5”	1	30 Bags
11.	Ashok Oil Mill	27” x 5”	1	30 Bags
12.	Paras Oil Mill	33” x 6”	3	150 Bags
13.	Shriniwas Oil Mill	33” x 6”	1	50 Bags
14.	Shri Siddheshwar Oil Mill	33” x 6”	1	50 Bags
15.	Vinayak Oil Mill	33” x 6”	1	50 Bags
16.	Atul Oil Mill	33” x 6”	2	100 Bags
17.	Suraj Oil Mill	33” x 6”	1	50 Bags
18.	Shri Ganesh Oil Mill	33” x 6”	2	100 Bags
19.	Mahesh Oil Mill	Double Chamber	1	100 Bags
20.	Nagnath Oil Mill	27” x 5”	1	30 Bags
21.	Madhav Oil Mill	33” x 6”	1	50 Bags
22.	Pipare Oil Mill	27” x 5”	1	30 Bags
23.	Hirolli Oil Mill	33” x 6”	1	50 Bags
24.	Shri Siddhivinayak Oil Mill	33” x 6”	1	50 Bags
25.	Niranjan Oil Mill	33” x 6”	1	50 Bags

Table 5.2 Contd.....

Sr. No.	Name of the Mill	Size of Expellers	Number of Expellers	Crushing Capacity in 8 Hrs.
26.	Pawan Oil Mill	33” x 6”	1	50 Bags
27.	Vikranth Oil Mill	33” x 6”	2	100 Bags
28.	Shivanand Oil Mill	33” x 6”	2	100 Bags
29.	Shivanna Oil Mill	33” x 6”	2	100 Bags
30.	Shivaling Oil Mill	27” x 5”	1	30 Bags
31.	Kalashetti Oil Mill	33” x 6”	2	100 Bags
32.	Sujata Oil Mill	33” x 6”	1	50 Bags
33.	Bhogade Oil Mill	27” x 5”	2	60 Bags
34.	Akash Oil Mill	33” x 6”	2	100 Bags
35.	Kamalesh Oil Mill	33” x 6”	1	50 Bags
36.	Rasul and Kondaji Oil Mill	33” x 6”	2	100 Bags
37.	Gajanan Oil Mill	33” x 6”	2	100 Bags
38.	Valsangkar Oil Mill	33” x 6”	1	50 Bags
39.	Toshniwal Oil Mill	33” x 6”	1	50 Bags
40.	Mahalaxmi Oil Mill	33” x 6”	1	50 Bags
41.	Basawaraj Oil Mill	33” x 6”	2	100 Bags
42.	Ambika Oil Mill	27” x 5”	1	30 Bags
43.	Banshetti Oil Mill	33” x 6”	2	100 Bags
44.	Gavarishankar Oil Mill	27” x 5”	1	30 Bags
45.	Nandkishor Oil Mill	33” x 6”	2	100 Bags
46.	Akash Oil Mill	33” x 6”	2	100 Bags
47.	Balasahib Oil Mill	33” x 6”	1	50 Bags
48.	Shalimar Oil Mill	33” x 6”	1	50 Bags
49.	Kalpesh Oil Mill	33” x 6”	1	50 Bags
50.	Renuka Oil Mill	33” x 6”	2	100 Bags
51.	Pampanna Oil Mill	33” x 6”	1	50 Bags
52.	Vaibhav Oil Mill	33” x 6”	2	100 Bags
53.	Suryakant Oil Mill	27” x 5”	1	30 Bags

Table 5.2 Contd.....

Sr. No.	Name of the Mill	Size of Expellers	Number of Expellers	Crushing Capacity in 8 Hours
54.	Shitanshu Oil Mill	33” x 6”	2	100 Bags
55.	Dhangapure Oil Mill	27” x 5”	1	30 Bags
56.	Mangalure Oil Mill	33” x 6”	2	100 Bags
57.	Shri Hanuman Oil Mill	33” x 6”	2	100 Bags
58.	Chandrashekhar Oil Mill	33” x 6”	2	100 Bags
59.	Narendra Oil Mill	33” x 6”	2	100 Bags
60.	Manthalkar Oil Mill	33” x 6”	1	50 Bags
61.	Navin Oil Mill	33” x 6”	1	50 Bags
62.	Vasant Oil Mill	27” x 5”	1	30 Bags
63.	Siddhivinayak Oil Mill	27” x 5”	1	30 Bags
64.	Dnyaneshwar Oil Mill	33” x 6”	1	50 Bags
65.	Chugi Oil Mill	33” x 6”	3	150 Bags
66.	Shri Siddheshwar Oil Mill	33” x 6”	1	50 Bags
67.	Shri Sangameshwar Oil Mill	33” x 6”	1	50 Bags
68.	Shri Yoginath Oil Mill	33” x 6”	2	100 Bags
69.	Basaveshwar Oil Mill	33” x 6”	3	150 Bags
70.	Shedulkar Oil Mill	33” x 6”	3	150 Bags
71.	Kalshetty Oil Mill	33” x 6”	2	100 Bags
72.	Jeure S. V. Oil Industry	33” x 6”	2	100 Bags
73.	Birajdar S.S. Oil Industry	33” x 6”	3	150 Bags
74.	Hirolikar Oil Mill (A)	33” x 6”	2	100 Bags
75.	Hirolikar Oil Mill (B)	33” x 6”	2	100 Bags
76.	Hirolikar Oil Mill (C)	33” x 6”	2	100 Bags
77.	Laxmi Oil Industry	25” x 7”	1	30 Bags
78.	Pardeshi Oil Industry	33” x 6”	2	100 Bags
79.	Shri Siddhivinayak Oil Mill	33” x 6”	2	100 Bags
80.	Rohan Oil Industry	33” x 6”	3	150 Bags

Table 5.2 Contd.....

Sr. No.	Name of the Mill	Size of Expellers	Number of Expellers	Crushing Capacity in 8 Hours
81.	C. V. Kalshetty Oil Industry	33" x 6"	3	150 Bags
82.	Shri Sindagi Oil Mill	33" x 6"	2	100 Bags
83.	Shri Channabasaveshwar Oil Mill	33" x 6"	3	150 Bags
84.	Basavraj Oil Industry	33" x 6"	3	150 Bags
85.	Pandurang Oil Industry	33" x 6"	2	100 Bags
86.	Toshniwal Oil Mill	33" x 6"	3	150 Bags
87.	Bhawani Oil Industry	33" x 6"	2	100 Bags
88.	Siddhanath Oil Mill	33" x 6"	1	50 Bags
89.	S. G. Pipare Oil Mill	33" x 6"	2	100 Bags
90.	Mashale Oil Mill	33" x 6"	3	150 Bags
91.	Mayur Oil Mill	33" x 6"	3	150 Bags
92.	D. R. Ghala Oil Mill	33" x 6"	2	100 Bags
93.	Chadchankar Oil Industry	33" x 6"	3	150 Bags
94.	Konapure Oil Mill	33" x 6"	1	50 Bags
95.	Dulange Oil Industry	33" x 6"	3	150 Bags
96.	Vyankateshwara Oil Industry	33" x 6"	3	150 Bags
97.	Vishwanath Oil Industry	27" x 5"	1	30 Bags
98.	Banshankari Oil Mill	27" x 5"	2	60 Bags
	Total:		**170**	

SOURCE: Solapur Oil Mill Association, Solapur.[17]

The above table shows that there are 98 oil mills including 170 expellers, the big expellers are 152 and small expellers are 18 in Solapur city. There is 1 double chamber oil expeller and 80 tel-ghani units including 160 tel-ghanis in Solapur city. The same has been found under the Survey.

In 1966-67 there were total 56 oil mills in Solapur city. Out of 56 oil mills 15 were foreign made expellers and 41 were Indian made. These 56 oil mills were having baby size expellers.

From 1970 to 1980 the number of oil mills increased by 15%. During 1990-91 to 2007-08 the number of oil mills increased fastly. This shows an increase in demand for edible oil. In 2007-08 there were 98 oil mills consisting maximum number of medium scale expellers.

5.3 Number of Edible Oil Mills during 1990-91 to 2007-08:

In the year 1990-91 there were total 66 oil mills in Solapur city. Upto 1998-99 the yearly increase in the number of oil mills is ranging from 1 to 5%, only in the year 2003-04 an increase in the number of oil mills is 8.24% compared to the year 2002-03. The following table shows an increasing number of oil mills in Solapur city. In the year 2007-08 there were 98 oil mills. It also shows within 18 years the number of oil mills increased by 32 i.e. from 66 (1990-91) to 98 oil mills (2007-08). From 1990-91 to 2007-08 in this period i.e. in the period of 18 years 67.35% oil mills were increased in Solapur city.

Table 5.3

Number of Oil Mills in Solapur City During 1990-91 to 2007-08

Sr. No.	Year	Number of Oil Mills	Increase %
1.	1990-91	66	--
2.	1991-92	69	4.54%
3.	1992-93	69	--
4.	1993-94	70	1.45%
5.	1994-95	70	--
6.	1995-96	70	--
7.	1996-97	70	--
8.	1997-98	71	1.43%
9.	1998-99	71	--
10.	1999-00	72	1.41%
11.	2000-01	78	8.33%
12.	2001-02	81	3.85%
13.	2002-03	85	4.94%
14.	2003-04	92	8.24%
15.	2004-05	96	4.35%
16.	2005-06	98	2.08%
17.	2006-07	98	--
18.	2007-08	98	--

SOURCE: Solapur Oil Mill Association, Solapur.[17]

The above table shows that within 18 years the number of oil mills increased by 32. An increase in number of oil mills in Solapur city is due to an increase in demand for edible oils in local and state market. One of the reasons is modernisation of oil extraction method i.e. conversion of ghani units in expellers.

According to the last Census 2001, the total population of the Solapur city was 8,05,250. Out of this, 4,15,252 were male and 3,89,998 female. The city of Solapur is surrounded by many villages in the district. There are 11 Talukas and 1089 villages in the Solapur district. All these villages have been easily connected with respective Talukas and city Solapur. The economic activities and day-to-day life of these villages have great concern with the city of Solapur. Many citizens of Solapur, mainly the traders have deep outlook on the oil industries. Therefore, the oil Industries are functioning at present. Mainly these oil mills are under the private sector. These oil mills are established by the sole trader who has no sound financial ability and also oil mills are established mainly under the form of organisation of a partnership by contributing the required capital and functioning on the basis of division of labour such as purchase, sales and marketing etc. These oil industries are under the head of small cottage and tinny industries. It is, however, true that these oil mills are not styled as heavy and big industries.

At present, the oil mills are also established under the scheme of Unemployment because of its nature as the small scale industries. It is also observed that, these oil mills are not hereditary but most of them have established by the new and young generation of today. In all, 98 oil mills have totally 170 expellers big and small. It cannot be said that these oil mills are financially sound. It is noticed that barring 14 large scale industries, the remaining of all oil mills are established by the financial aid from the different Nationalised and other Urban Banks and also Maharashtra state Finance Corporation (M.S.F.C.).

In the city of Solapur, all these oil industries have not the same production capacity and also they do not have the same production machinery. In some of the above oil mills, there are expellers of 4 bolts and in other 6 to 9 bolts and in some other which are large by size, there are 12 bolts expeller. It is also seen that, these oil mills are not producing the same kind of oil from the same kind of oilseeds. They produce different kinds of edible oil such as groundnut oil, Karadi oil, Sun-flower oil etc.

For the establishment and carrying out these oil mills, the different type of machinery, electric motor and some other applied machinery are required. It is separately discussed in the further part of the study. On the overall view, the oil mills are functioning as the small scale industries and they have achieved significant importance in the production and supply of edible oil.

The oil mills are working under the above name and style. There is an element and trend to accept the name of God and Goddess such as “Sangameshwar Oil Mill, Mahalaxmi Oil Mill, Samarth Oil Mill, Vinayak Oil Mill, Siddheshwar Oil Mill, Ambika Oil Mill etc. These different names suggest the pious and religious sentiments. Mill owners accepted these names with intent to have progress and the development of their mills.

The population has been increased. This made to increase 0.0018 Million Tonnes demand of oil in Solapur city. To meet the increasing demand the oil mills are established in good deal of number and oil mill owners have undertaken this productive activity as one of the economic activities. Thus how, it has resulted to enlist the more oil mills at present. The oil industry has played an important role in the development of Solapur as an industrial place.

5.4 Number of Tel-Ghani in 2007-08:

Table 5.4

Tel-Ghani in Solapur in 2007-08

Sr. No.	Name of the Owner	Number of Tel Ghani	Crushing Capacity in 8 Hours in Bags
1.	Sangmeshwar Tel Utpadan Kendra	4	10
2.	S. S. Kalshetti	4	10
3.	S. V. Manthalkar	2	5
4.	C. V. Ralshetti	4	10
5.	Hiroli Gramodyog Kendra	4	10
6.	Mahadev Ghodke	4	10
7.	K. S. Shedulkar	4	10
8.	Gangadhar Belure	2	5
9.	Tamanappa Kalshetti	4	10
10.	Narayan Ghodke	6	15
11.	Shankar Pardeshi	4	10
12.	Kantilal Pardeshi	6	15
13.	Jagdamba Oil Centre	6	15
14.	Mohan Pardeshi	2	5
15.	D. P. Nagarkar	4	10
16.	Manik Kalshetti	4	10
17.	Revansiddha Kalshetti	4	10
18.	Jyoti Oil Centre	4	10
19.	Sopan Tel Vikri Kendra	4	10
20.	S. H. Chungi	4	10
21.	Ramesh Manthalkar	2	5
22.	R. M. Pardeshi	4	10
23.	G. R. Pardeshi	4	10
24.	S. S. Pardeshi	4	10
25.	C. M. Pardeshi	4	10
26.	H. C. Pardeshi	4	10
27.	C. J. Pardeshi	4	10
28.	B. C. Pardeshi	4	10
29.	V. V. Kalshetti	4	10
30.	V. M. Kalshetti	4	10
31.	M. C. Kalshetti	2	5
32.	C. M. Kalshetti	4	10
33.	R. C. Kalshetti	4	10
34.	C. J. Kalshetti	4	10
35.	C. R. Manthalkar	4	10
36.	A. C. Manthalkar	4	10
37.	S. S. Halli	4	10
38.	C. S. Halli	4	10
39.	P. S. Halli	6	15
40.	Siddheshwar Gramodyog Tel Utpadan Kendra.	4	10
41.	R. B. Dodmani	2	5
	Total:	**160**	**400**

At present there are 80 Tel ghani units consist of 160 tel-ghanis. Each Tel ghani Unit consist 2 Tel ghanis having the crushing capacity of 5 bags safflower. Almost all the tel-ghanis in Solapur city crush safflower only. Some safflower edible oil

producers are having more than 1 unit of Tel ghanis and they are the major safflower oil producers in Solapur.

The above table 5.4 shows that 41 owners of the tel-ghanis are having 160 Tel ghanis. However, 50% Tel ghanis are not in working condition due to decreasing supply of raw material (safflower oilseeds). Some producers stopped the production and entered in the oil mill production sector. Therefore at present 20 to 25 units are in working condition and producing safflower oil and oil cakes.

The number of oil mills increased in 1990-91 to 2007-08. But at the same time the number of Tel ghani units decreased due to an increasing competition in edible oil market with big oil mill owners and edible oil companies.

In the beginning period of the 20th Century edible oil is supplied only by Tel ghani units in Solapur. But recently due to the development of the infrastructure in the state and the nation and development in the extraction of edible oil, the Tel ghani production failed in the field of this business. Therefore at present there are only 20 tel-ghani units are working and all these 20 units are selected for the study.[7]

5.5 Method of Oil Extraction:

There are different kinds of edible oil such as groundnut, sunflower, safflower, sesame, mustard etc. are extracted by the following principles:

1) Emulsion Method
2) Pressure Extraction
3) Solvent Extraction

Extraction by Crushers (ghani), screw pressers, rotaries, expellers and hydraulic pressures is based on the principles of

pressure extraction. Generally, on large scale the groundnut oil, safflower and sunflower oil is extracted by different types of tel-ghanis and expellers. The brief description of each method is given below.

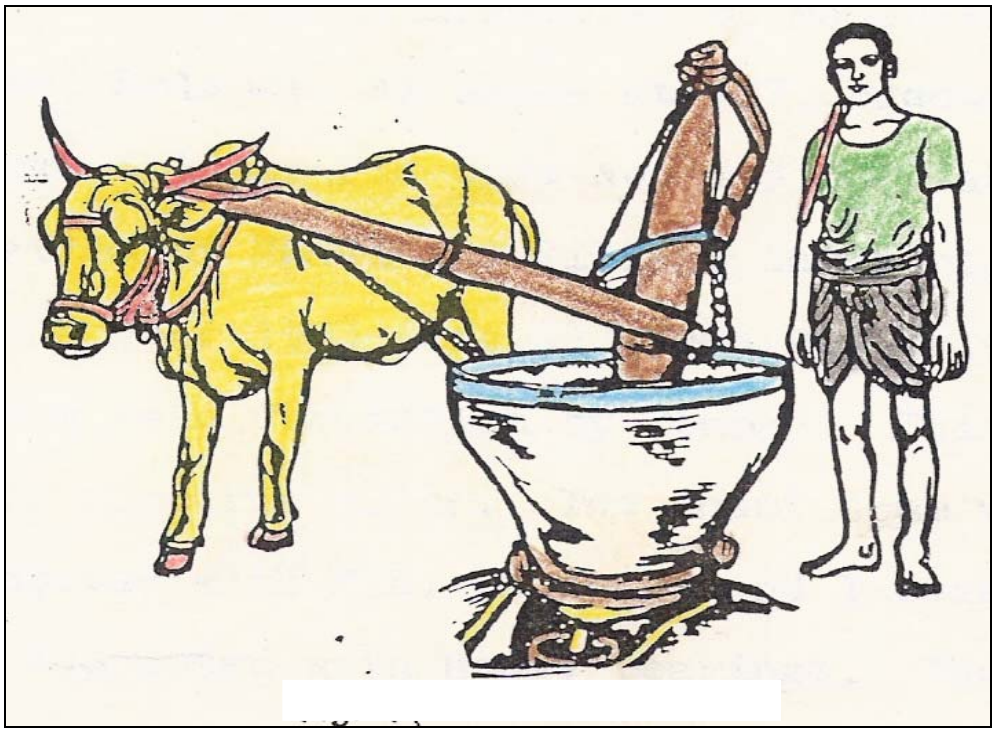
A) Tel-Ghanis[15,16&17]:

a) Improved Bullock Driven ghani:

The extraction of oil by ghani is very old and simple method of production. The ghani is basically a large wooden pestle and mortar. Before the use of the bullocks for driving ghani, the man power was used, but it was a very crude and difficult process because a man was used as animal power. The most popular method of extract of oil was by improved bullock driven ghani. It is known as traditional ghani (Figure 5.1). There are different distinctive variations in capacity per charges, length of the beam etc. The mortar is the shape of inverted cone and pestle, a heavy baulk seated at the bottom of the cone and inclined at an angle so that it crushes the meal against sides of the mortar during rotations. It is rotated by a pole inserted through it at right angle. The power is supplied by 1 or 2 bullocks yoked to the pole who walk blind folded in a circle with a speed of 250 to 300 rounds in 45 to 50 minutes. About 10 to 12 kg. kernels are used per charge. 100 to 120 kg. of oilseeds are crushed within 10 charges per day. The (Figure 5.2) shows the improved bullock driven ghani. However, this method has become old 1 and majority of oilmen switched on overhead drive or portable power ghani.[6&7]

Figure 5.1

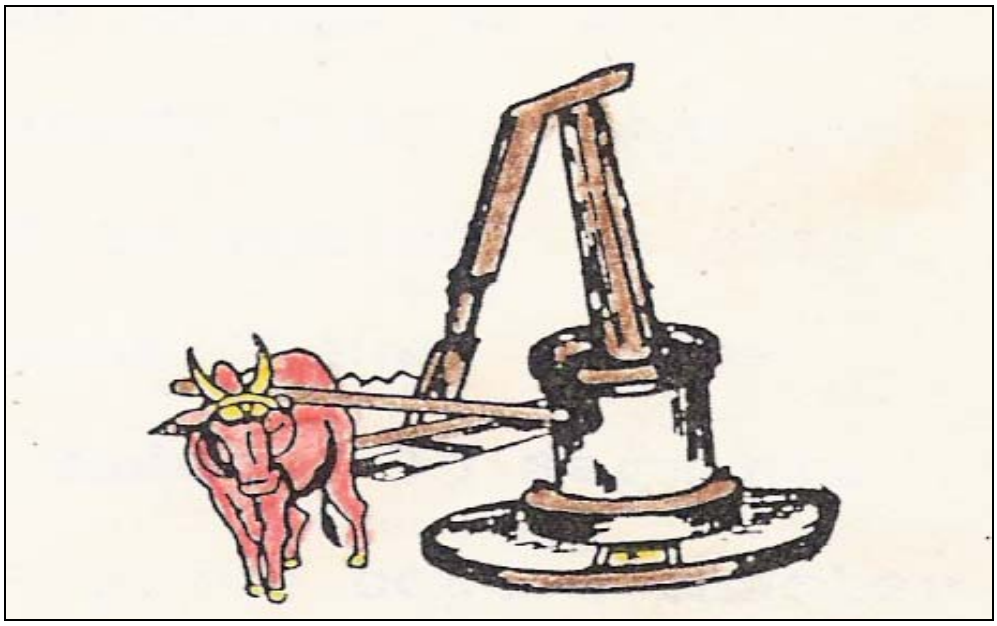
Traditional Ghani



SOURCE: Khadi and Village Industries Commission, Mumbai.[6]

Figure 5.2

Improved Bullock Driven Ghani



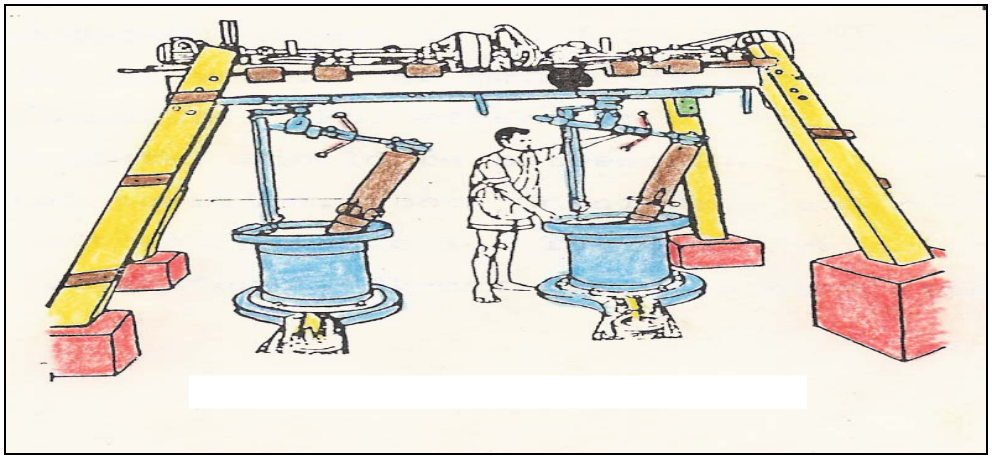
SOURCE: Khadi and Village Industries Commission, Mumbai.[6]

b) Overhead Driven Ghani:

The overhead ghani is improved oil extraction system from the traditional bullock tel-ghani during fifties which is operated by power. This new system is developed by All India Khadi and Village Industries Commission. The principle and technology is the same without changing the basic structure of improved bullock driven ghani in 1972. There is some modification of having wooden structure with pillars inclined at 75° inward for single ghani or double ghani (Figure 5.3 & 5.4) operated on 2 or 3 HP electric motor for 1 or 2 ghanis respectively. This structure is economically gives the best performance for double ghani unit. Traditional ghanis are usual converted into power ghani, the loan bean of bullock ghani is replaced by a pressure gadget by means of spring. It is designed to give a lateral pressure at 90° in lat. The approximate expenditure for overhead drive ghani for single ghani was of Rs. 8,000/- to Rs.12,000/-. The capacity per charge is 45 minutes is 12 to 15 kg. About 10 to 12 charges are completed within 8 hours. There is practically no any change except replacement of bullock power.[6]

Figure 5.3

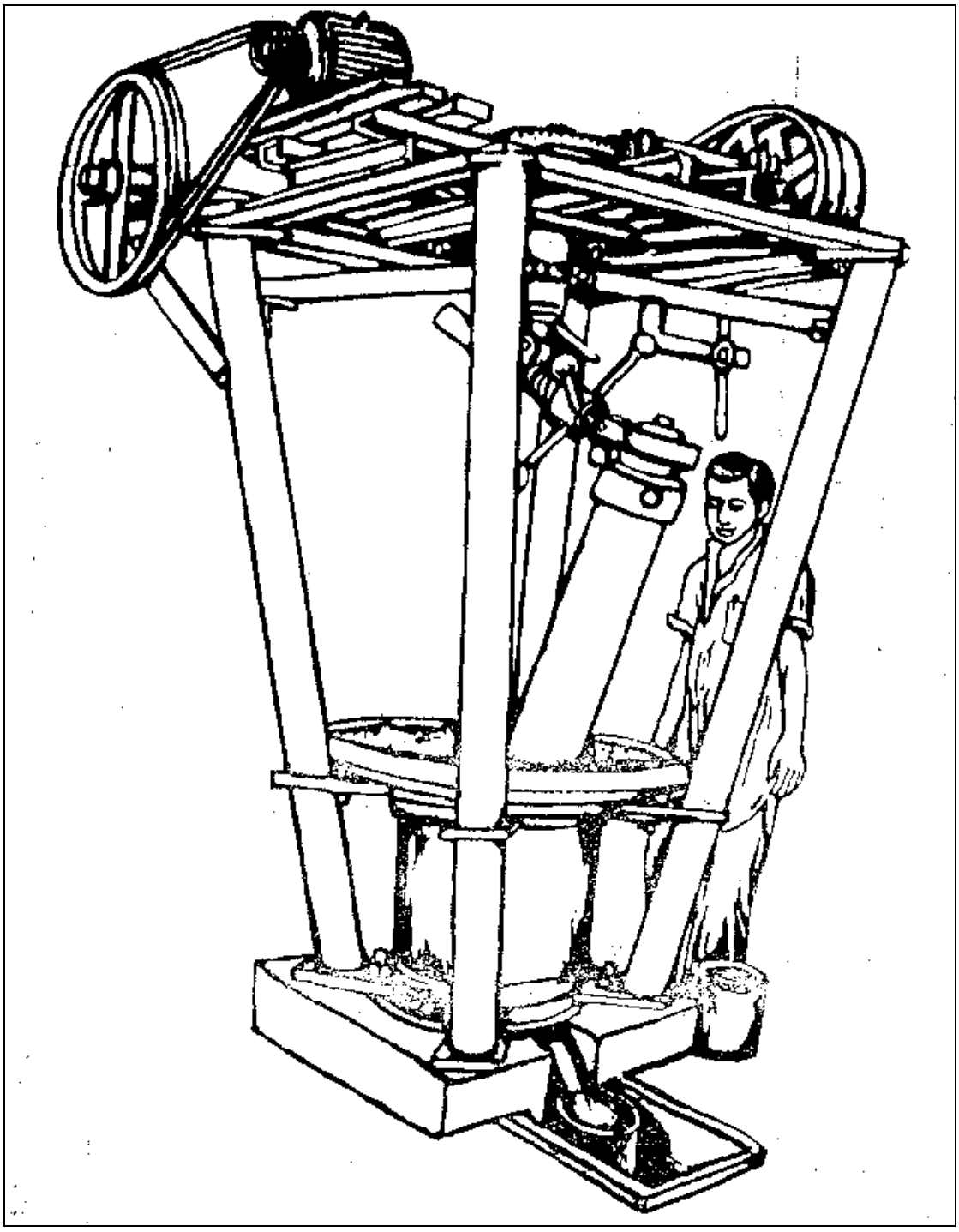
Improved Bullock Driven ghani



SOURCE: Khadi and Village Industries Commission, Mumbai.[6]

Figure 5.4

Overhead Power Driven ghani



SOURCE: Khadi and Village Industries Commission, Mumbai.[6]

Table 5.5

Comparative Performance of Traditional Bullock-Driven Ghanis and Overhead Power Ghanis

Place of Crushing, and Seed Crushed[b]	Bullock – Driven Ghanis				Overhead Power Ghanis			
	Capacity kg.	Extra-ction %	Time taken hrs mts	Cost Rs./qtl	Capacity kg.	Extra-ction %	Time taken hrs mts	Cost Rs./qtl
sesame								
Madurai (Tamil Nadu)[c]	12-14	45.0	14=56	11.06	12-14	45.0	12=28	2.00
Kanchipuram (Tamil Nadu)[c]	10-14	40.0	17=42	8.08	10-14	42.3	8=08	1.70
Delhi (Delhi state)	10-12.	43.0	20=00	22.00	10-12	46.6	17=38	2.34
Jaipur (Rajasthan)	--	--	--	--	20-25	45.0	15=20	2.00
Gundi (Gujrat)	--	--	--	--	8-9	45.8	16=00	2.50
mustard								
Barama (Assam)	5-06	30.5	83=08	3.20	7-9	30.9	20=09	N.A.
Mawana (Uttar Pradesh)	9-10	34.2	47=09	22.00	9-11	36.2	27=01	2.50
Gaya (Bihar)	10	35.5	41=25	8.00	10-11	37.0	21=14	3.44
Copra								
Kottar (Tamil Nadu)[c]	9-11	61.0	15=45	16.00	9-11	61.0	14=10	2.00
P.K. Vila (Kerala)	15-20	62.0	30=00	15.00	15-30	63.0	12=00	3.00
Safflower								
Hyderabad (Andhra Pradesh)	16-20	48.9	7=42	5.00	16-21	49.9	6=22	0.70

SOURCE:

[a] P. V. Gujrati, Ref. 45a.

[b] Same lot of seeds used for bullock and power ghani crushing in each location. Between locations, seeds would of course vary.

[c] Two bullocks employed in these runs. All other runs employed only 1 animal.

c) Portable Power Ghani:

This is manufactured by Maharashtra Engineering Works, Solapur, situated at 10, Budhwar Peth, Shivaji Chowk, Solapur – 413 002, as per the recommendation of Khadi and Village Industries Commission, Mumbai in the year 1983 (Figure 5.5 & 5.6) shows portable power ghani approved by the said Commission by Mumbai. This ghani consists of 2 HP electric motor. The ghani drum with lat facher is supported with M.S. Channels and I beams. Moving parts are supported with heavy bearings. The design of Portable Power ghani is different than the ordinary ghani, improved bullock driven ghani. The drum itself is conical in shape made suitable for fitting in the existing flange of the Portable Power ghani designed. It is made of 13 segments of wooden pieces with a separate 3 piece bottom chamber. The drain hole is bigger than normal size. Facher is the main component where the oil is actually extracted and is made out of wood. The pestle is also made out of wood babul/tamarind. For effective extraction, the inclination of the pestle should be 21 to 23 inches from the vertical position. Both ghani drum and pestle are related while extraction of oil. The ghani capacity or yield capacity is as under (Table 5.6) for different seeds in percentage.

Table 5.6

Ghani/Yield Capacity in Percentage

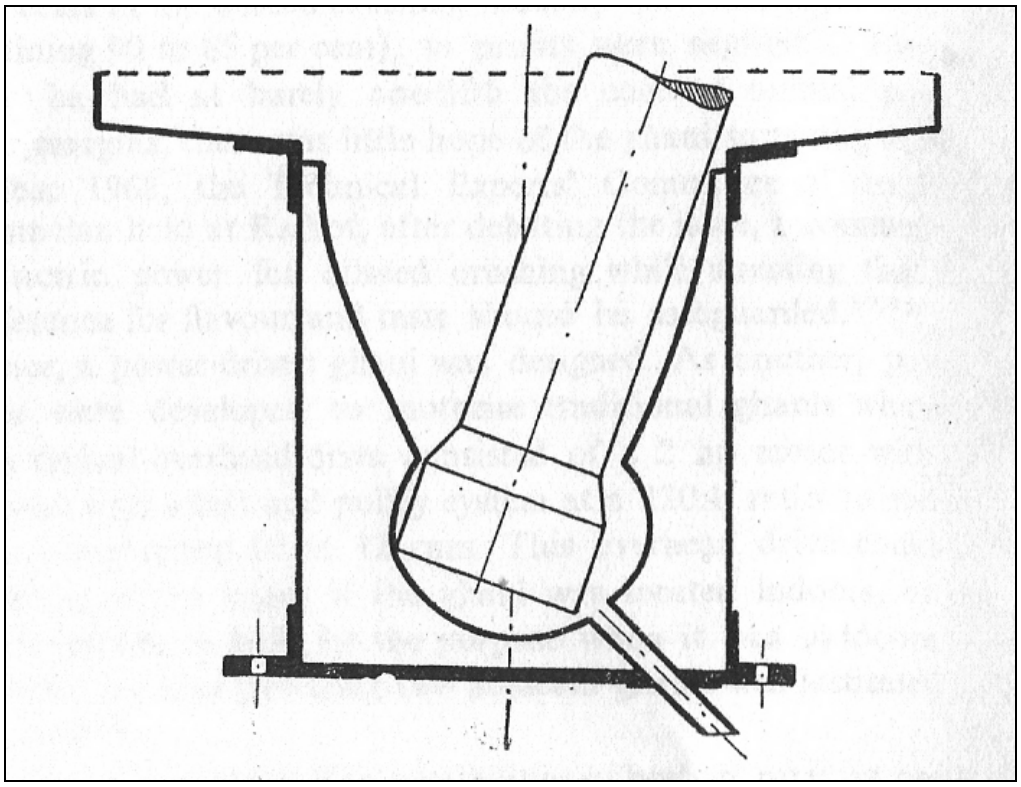
Sr. No.	Yield Capacity (Seeds)	Percentage
1.	Karadi Oil	46.50%
2.	Sesame	40-45%
3.	Mustard	27-30%
4.	Sunflower	46-48%
5.	Groundnut	42-45%
6.	Coconut	60-63%

SOURCE: It is seen "Safflower" by Dr. P.S. Patil and others "All India Co-ordinated Research Project on Oilseeds.[12]

Ghani capacity 12 to 18 kg. per charge which takes times for 40 minutes revaluation of the drum 11 R.P.M. Electric power consumption 8 units for 8 hours. It is simple for operation. One man can operate 2 ghanis at a time. Even the ladies can operate these ghanis as they are simple in construction and easy to operate. The drum rotates itself. In general, the recovery of oil extracted by ghani is about 22 to 24 kg. seed. The machine requires floor space of 4' x 6' only. Self-cutting and feeding arrangements are provided. The oil extraction is comparatively higher than other ghanis. "Portable Power ghani" is a great opportunity for educated unemployed as well as Co-Operative Societies. The Khadi and Village Industries Board have also assisted to ghani. The loan facilities at the rate of 4% interest with subsidy of Rs. 50,000 of installation are given by the Board.

Figure 5.5

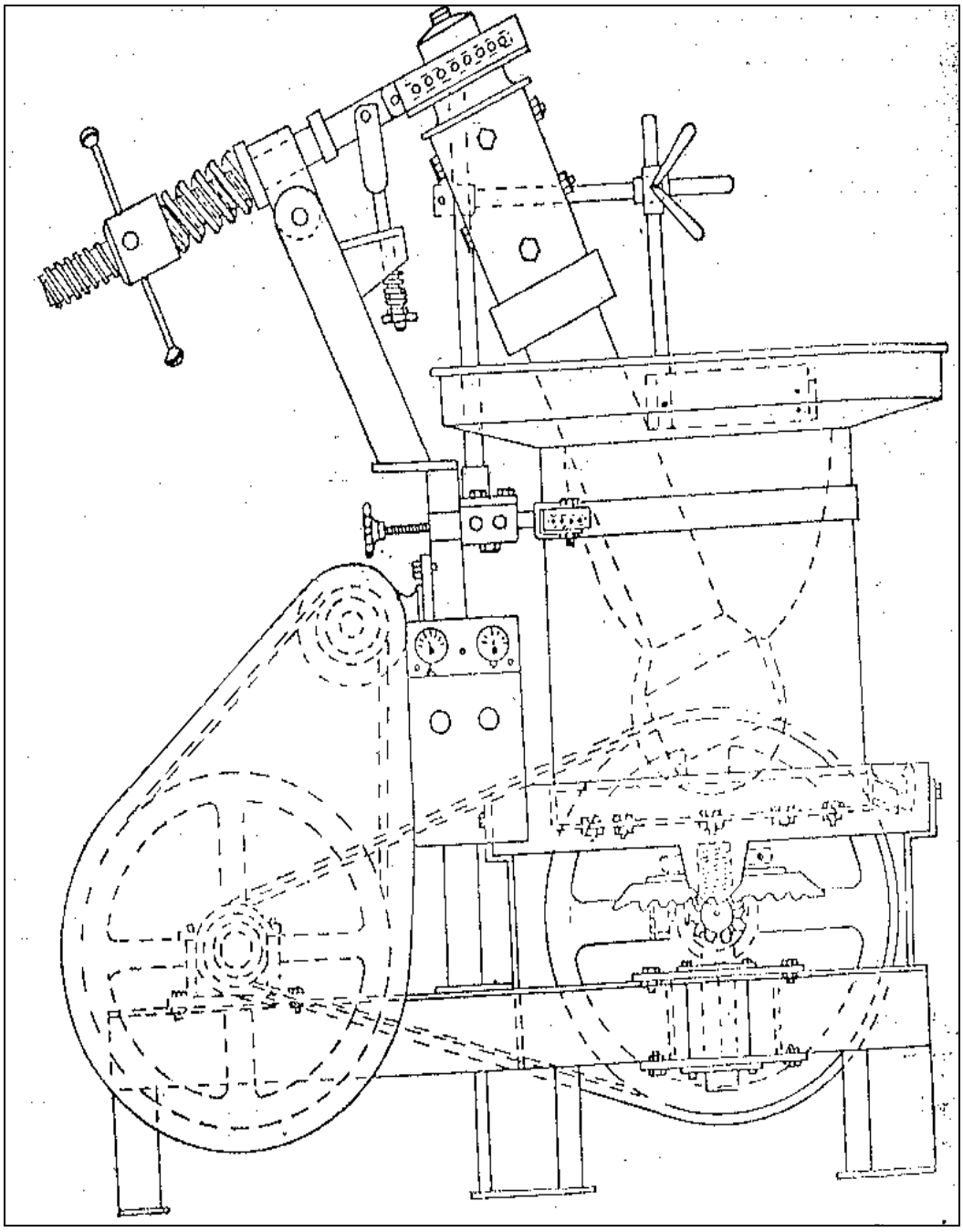
Mortar of Improved Ghanis Showing the Disposition of the End of the Pestle in the Base of the Pit



SOURCE: Khadi and Village Industries Commission, Mumbai.[6]

Figure 5.6

Portable Power Ghani



SOURCE: Khadi and Village Industries Commission, Mumbai.[6]

The following table shows performance of tel-ghanis in crushing oilseed in different location.

Table 5.7
Performance of Ghanis in Crushing Oilseeds in Different Location

Location of the Ghani	Crushing Details			Efficiency			
	Total Seed Crushed Kg./Day	Number of Charges per Day	Average Qty. per Charge Kg.	Total Working Period Hr.	Oil Extracted %	Oil Extracted Kg./Day	Oil Extracted Kg./Hr.
South India							
Tiruvannamalai (Tamil Nadu)	62	2	31.0	8	37	22.94	2.97
Chittor (Andhra Pradesh)	45	2	22.5	8	35	15.75	1.97
Cudappah (Andhra Pradesh)	37	3	12.3	11	47	17.39	1.58
Kozhikade (Kerala)	26	2	13.0	9	49	12.74	1.42
Pithapuram (Andhra Pradesh)	15	3	5.0	10	50	7.50	0.75
Western India							
Rajkot (Gujrat)	46	8	5.8	13	44	20.24	1.56
Sabarmati (Gujrat)	41	5	8.2	8	42	17.22	2.15
Pandharpur (Maharashtra)	38	4	9.5	8	26	9.88	1.24
Mumbai Area (Maharashtra)	30	4	7.5	8	45	13.50	1.69
Bhusaval (Maharashtra)	18	3	6.0	10	40	7.20	0.72
Eastern India							
Badadangal (West Bengal	21	2	10.5	8	32	6.72	0.84
Comilla (West Bengal)	21	4	5.3	12	34	7.14	0.60
Bhadrak (Orissa)	18	3	6.0	9	31	5.58	0.62
North India							
Jalandar (Punjab)	17	2	8.5	7	38	6.46	0.92
Bijnor (Uttar Pradesh)	16	4	4.0	12	37	5.92	0.49
Chopra (Bihar)	15	6	2.5	12	33	4.95	0.41

SOURCE: Edible Oil Production in India a Book by Nannapnavaru.[10]

The following table 5.8 shows performance data on the standardised improved ghani. Oil extraction is high and crushing time is short, making for cost reduction and working efficiency.

Table 5.8

Performance Data of the ghani

Seed Crushed	Capacity Per Charge kg.	Oil Extraction %	Time Taken per Charge Mts.
Sesame	8	45	75
Groundnut	8	45 to 49	60
Coconut	8	55 to 62	45
Mustard	6	30	60
Yellow Mustard	7	30	60
Mahua	7	35	60
Castor	8	40	60

SOURCE: Edible Oil Production in India a Book by Nannapnavaru.[11]

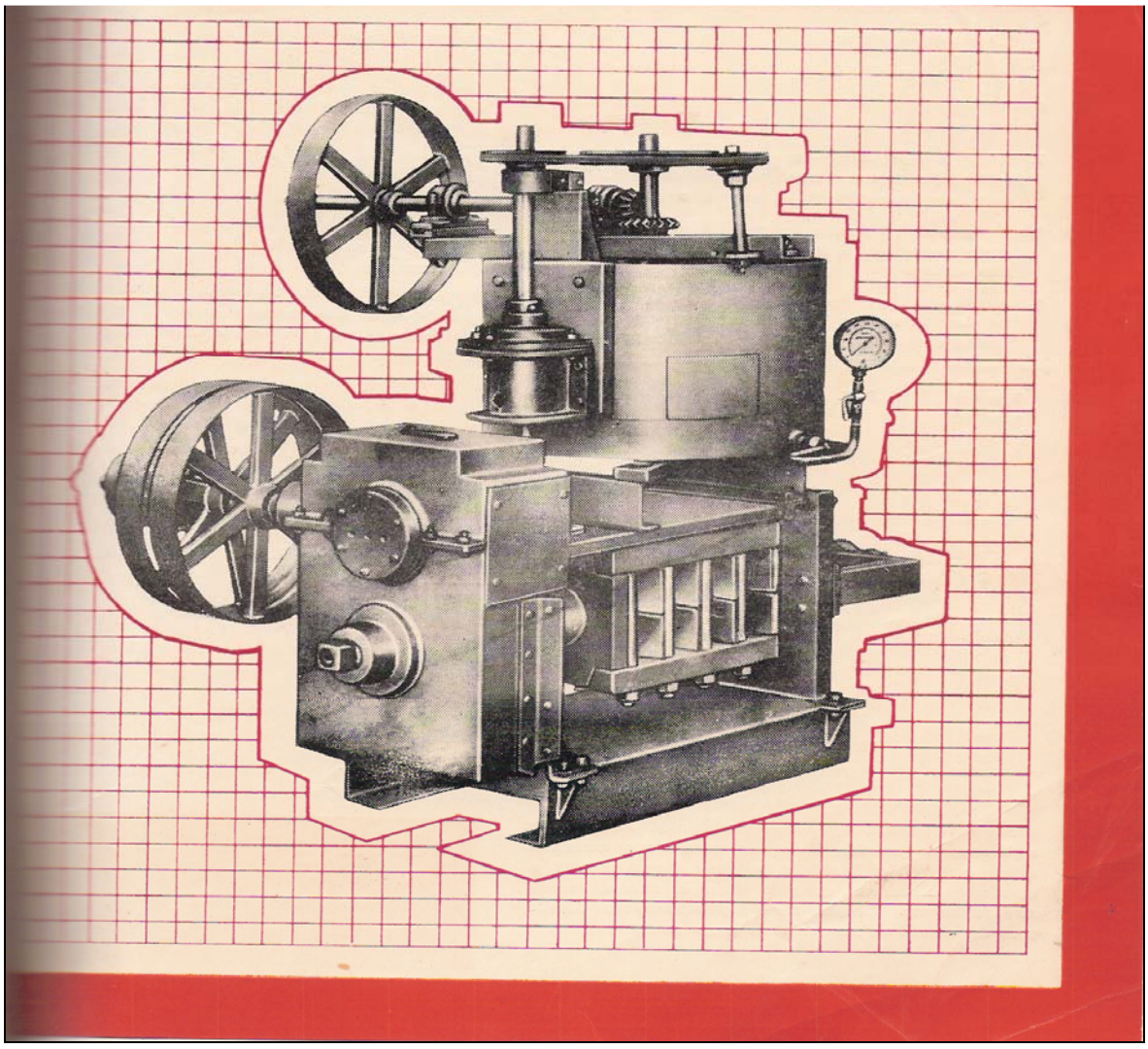
B) Expellers:

a) Mini Expeller:

Mini expellers are manufactured by private agencies for extraction of seed oil from different oilseeds. The capacity varies from 40 to 80 kg. oilseeds per hour. The details of mini expellers designed by the Shraddhanand Engineering Works, Solapur (Figure 5.7) are as follows:-

Figure 5.7

Mini Oil Expeller



SOURCE: Prospectus of Hind Engineering Company, Lucknow, U.P.[13]

The following table 5.9 shows the Mini Expellers Crushing Capacity.

Table 5.9

Mini Expellers Crushing Capacity

Sr. No.	Size of Machine			H.P. reqd.to operate	Dia. of Pulley (in)	R.P.M.	Capacity of Crushing Oilseeds Per Hour (Twice in Kg.)
	Length	Breadth	Height				
1.	66	21	45	05	18	250	40-45
2.	84	27	66	10	22	145	70-80

SOURCE: "Safflower" by Dr. P.S. Patil and Others "All India Co-ordinated Research Project on Oilseeds", Mahatma Phule Agricultural University, Zonal Research Station, Solapur.

Mini expeller is known by its nick name as a baby expeller. It produces the oil 268 kg. and 583 kg. oil cake from the oilseeds within 8 hours. It has 9 bolts and its weight is 16 quintal. It has found that these expellers have no capacity to produce and supply with the required demand. At present, in the Solapur city, there are only 2 Baby expellers working with the small capital and with 1 man labour. It is true that extraction of oil by such is better and more than the extraction of any other methods.

The installation of this expeller, filter press, boiler and electric motor can be adjusted on small area (10' x 10'). However, the mechanism of such expeller is sophisticated and can be operated by little experienced laborer/oilman. There is also 1 mini expeller which is known as "Shakti Mini Oil Expeller'. It has 3 models, Chamber size, H.P. and crushing capacity in 24 hours as below:

Table 5.10

Mini Expellers Crushing Capacity

Sr. No.	Model	Chamber Size	H.P.	Production Capacity in 24 Hours (Oil Cane)
1.	A	18" x 4"	5	24 (Oil cane)
2.	B	24" x 4"	10	48 (Oil cane)
3.	C	27" x 5"	15	80 (Oil cane)

SOURCE: Prospectus of "SHAKTI MINI OIL EXPELLERS" manufactured by 'Amrut Engineering Works,Behind Vihar Cinema,Pratapnagar,VADODARA-390004[1&14]

But during the last 5 years, however, there is medium type of expeller and also big type of expeller has been installed. Considering their productive capacity, so at present in the Solapur city, almost all expellers are of medium size and of a big size because within the limited time, more and more and maximum production is to be done.

b) Medium Scale Expeller:

The medium size expeller is of 6 bolts or of 9 bolts. The chamber of medium type expeller of 6 bolts is 22" x 5" and of 9 bolts chamber size is 30" x 5" or 27" x 5".

In the Solapur city, at present, there are 152 expellers, out of which, 18 expellers are of medium size. It is easy to operate. It needs no high technical knowledge for the operations. It also needs no large space. In the city of Solapur, these medium size expellers are generally installed in the space of 40' x 30' within this area. For 1 medium size expeller, 1 electric motor, boiler, filter press, oil tank are installed. The filter press machine is sometimes fixed on the oil tanker.

Power:

For the medium type of expeller of 6 bolts the 10 HP electric motor is required and whereas the electric motor of 15 to 20 HP is required for 9 bolts. In above both matter the R.P.M. is 960 per minute. If the electric motor of higher R.P.M. are used then there is a less production of oil and there will be a large ratio of oil remain in the oil-cake.

Production Capacity:

A medium type of expeller of 6 bolts oil extraction from 15 qtl. oilseeds within 24 hours and whereas within 24 hours 22 qtl. oilseeds are crushed by medium size of expeller of 9 bolts.

c) Large Scale Expeller:

Large size expeller is of 12 bolts. It is usually used for large scale production of oil. Its Chamber size is 33" x 6", 36" x 6" and 44" x 8". It needs the electric motor of 25, 30 and 35 H.P. respectively. These expellers are installed generally in such locality and area wherein there is a large production of oilseeds. In the Solapur city, at present, there are 152 large or big type of expellers usually installed where there is great availability of storage of oilseeds. These expellers are most suitable to extract the oil from all oilseeds.

5.6 Place and Production Capacity:

One large type of expeller installed within the area admeasuring 42 to 50 feet for expeller itself 10' x 15' space is required and thereafter to break the oilcakes into small pieces 10' x 15' space is required. If there are 2 or more expellers, then usually space required is admeasuring 100 x 100 or 100 x 150. The labour charges of such expeller are more than production of such expeller is larger by 3 to four times than that of small expellers.

Very recently, there is also the super size of expeller, it is known as “Super A”. Its chamber size is 44” x 9” x 6”. Its HP is 40. The extraction is undoubtedly larger than any other method. It is also known as ‘SHAKTI SUPER OIL EXPELLER”. There are many merits of such expellers. It has perfect cook arrangement. It is possible to achieve the maximum pressure at the minimum consumption of load. Therefore, maximum oil yield is assured. The milling cost is also lower. It is economical one. There is no need for constructing a floor specially. This expeller requires minimum space. Changing the warms can be done in a couple of hours. The spare-parts are available into the market. These expellers are suitable for crushing all kinds of oil bearing seeds. The expellers under ‘Super A’ are of 3 types A, B & C. Type A of Super A expeller is not in Solapur city. However, B & C type of Super A, expellers is installed by oil mill owners.

The Shakti Oil Expellers are manufactured in various sizes, varying according to H.P. and production capacity. The following table shows the types of expellers, size of chambers and HPR and crushing capacity in tonnes in 24 hours.

Table 5.11

Types of Large Scale Expellers and Crushing Capacity

Types of Expellers	H.P.R.	Chamber Size in inches)	Crushing Capacity in Tonnes in 24 hours			
			Ground nut	Cotton Seeds	Castor Seeds	Copra
Super – A	60	54”-10”-7”	18	20	18	12
A	40	44”x9”x6”	9	12	9	6
B	30	33” x 6”	6	9	6	5
C	40	33” x 7”	7	10	7	6
Medium Size						
A	20	30”6”x5”	4.5	5	4.5	4
B	15	27” x 5”	3	4.5	3	2.5
Small Baby	12.5	24” x 4”	2	2.5	2	1.5
Small Baby	7.5	18” x 4”	1	1	1	0.5

SOURCE: The above table is from the prospectus of “Amrut Engineering Works”, R. V. Desai Road, Behind Vihar Talkies, Pratapnagar, VADODARA, Gujrat.

5.7 Conclusion:

Since 10 years the number of oil mills is increasing due to an increase in the consumption of edible oil in Solapur. At the same time the Solapur edible oil market is also developing which is connected with the other state markets. Therefore, in present days the production of edible oil in Solapur city goes to other states such as Karnataka, Andhra Pradesh etc. A metropolitan city Mumbai is one of the famous market for the producers of edible oil is Solapur. This leads to develop the edible oil industry in Solapur and modernize the method of production.

The persons of varying capacity of capital have come forward to undertake the installation of oil industry with different types of expellers suited to their conditions and social status. After 1990-91 the number of oil mills in Solapur city increased. In this period most of the oil mill owners renewed the machinery and elaborated modern heavy expellers. This leads to increase the crushing capacity of the oil mills. One more important reasons of an increase in number of oil mills is changing cropping pattern in Maharashtra, Karnataka and Andhra Pradesh.

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CHAPTER - VI

ORGANISATION AND MANAGEMENT OF SAMPLE OIL MILLS

6.1 INTRODUCTION:

Solapur, Latur, Jalna and Aurangabad these are the 4 major districts in Maharashtra in the production of oilseeds. The contribution of these 4 major districts in the production of oilseeds in Maharashtra is 70%. Therefore, the number of oil mills is located in these 4 districts in Maharashtra. At present there are 98 oil mills and 80 tel-ghani units consisting 160 tel-ghanis in Solapur city.

In the beginning period of 20th Century only safflower and groundnut oilseeds are crushed by tel-ghanis and expellers respectively. In recent days, maximum edible oil such as groundnut oil, sunflower oil, cotton seed oil, safflower oil produced by the oil mill owners rather than tel-ghanis. Out of 80 tel-ghani units only 20 tel-ghani units are producing safflower oil. It means the traditional tel-ghani production is lagging behind due to shortage of safflower seed production and cut-throat competition in the edible oil business in the Solapur city. Therefore, some owners of the tel-ghani units entered in the oil mill edible oil production sector.[6]

6.2 Meaning of Management:

Management has been defined as the guidance, leadership and control of the efforts of a group of people towards some common objective. This concept of management points out the purpose or function of management but it tells us little about the nature of management processes that is how the manager achieves the results.

One way to analyse management is to think in terms of what a manager does. Using this approach, we can arrive at the management process which describes the work of any manager. The management work can be divided into a few basic functions of management as follows:

1) Planning
2) Organising
3) Leading
4) Controlling

The first function planning is the determination of objectives and formulation of plans, strategies, programmes, policies, producers and standards needed to achieve the desired organisation objectives. To implement the plans there must be some organisation structure. The human and material resource or inputs are allocated to the various units and relationship is established among the sub-units.

Organising is the second function of manager. Organising is the process of developing a structure among people, functions and physical facilities to execute the plans and achieve stated objectives.

The third function of a manager is that of leading – stimulating and motivating people in the organisation to undertake willingly the desired actions as per predetermined plans and objectives. Motivation is an integral part of leadership to assure desired results.

The fourth and final function of management is that of controlling to assure directed action a per plans and objectives. Controlling incorporates the establishment of standards, measurements and comparison of actual results against the standard and necessary corrective action to remove deviations from the plan.

6.2.1 Definitions of Management:

The difference of opinion and approach are reflected in the following often quoted definitions of management.

a) F. W. Taylor – “Management is knowing exactly what you want men to do and then seeing that they do it in the best and cheapest way”. This definition deals with plant management basically.

b) Henry Fayol – “To manage is to forecast, to plan, to organise, to command, to co-ordinate and control”. It attempts to describe management in terms of what a manager does and not what management is”.

c) P. Drucker - “Management is a multi-purpose organ that manages a business, manages manager and manages workers and work”.

d) Appley L. – “Management is the development of people and not the direction of things”. According to Appley L., management is essentially personal management. We do not build automobiles, aeroplanes, radios etc. We build men and women of these human resources build products. Human resources are our greatest assets.

e) Koontz and O'Doneu – "Managing is defined as the creation and maintenance of an internal environment in an enterprise where individuals, working together in groups, can perform efficiently and effectively towards the attainment of group goals." According to this definition managing is an art of creating favourable performance environment enabling the group to attain stated objectives and management is the body of organised knowledge.

6.2.2 Importance of Management:

At all levels of organisation in any joint enterprise managing is an essential input and it is said that anything minus management amounts to nothing. Management is the most critical asset for the success of any enterprise.

Management can deliver rising standards of living to the society. It can offer enriched life to employees, consumers and citizens or members of a community. It assures smooth running of an enterprise. It is a powerful innovative force. It is the main determinant of an economic progress. It is the guide for our effective Government. It can strengthen our national defense.

Specialist of economic development have pointed out to the Governments of developing countries that even the most modern technology, best materials, resources and plan facilities liberal and cheap finance may not be able to achieve stated objectives- without effective and efficient management. The greatest obstacle and the limiting factors for undeveloped and developing countries is the quality of management. Competent managerial personnel were really responsible for the accelerated development and recovery of Germany and Japan after the World War-II after 1950.

Good management is the only economic resource which can decide the extent of utilisation of all other resources. It alone is responsible for the optimum utilisation of available scarce resources.

Productivity of resources is the current burning problem in all countries. Problem of inflation and ever-growing consumer demand due to growth of population have created unique importance to productivity. Management is called upon to meet the challenge of productivity. Managers have to manage separately the productivity of all 4 key resources, capital, crucial physical resources, time and labour. But what matters in the end is the total, overall productivity of an enterprise e.g. factory, store, bank, hospital, school, office and so on. Managers must commit themselves to accomplish steady increase in productivities of all resources particularly in turbulent and ever-changing environment.

Good management is necessary in industry, commerce, agriculture hospital, educational institution, sports, charitable institution, political bodies, trade unions and government. In the field of co-operation small and cottage industries, we need good management. Govt. is the greatest industrialist and greatest employer in India. Hence management has gained greatest importance in all govt. branches of administration.

6.3 Concept of Organisation:

There are 2 concepts of organisation

1) Organisation means a structure, an association, an entity or a network of specified relationship, for instance, superior-subordinate relationship among individuals.

2) Organisation also means a process of an ongoing activity i.e. the process of organising.

Both the process and the resulting structure of association are important management tools.

A) Organisation as a Structure:

In this sense an organisation is a group of people bound together in a formal relationship to accomplish certain common objectives. As a structure, there are 3 essentials of an organisation.

a) It must have a certain purpose or objective to be achieved.

b) It is composed of people.

c) It has a formal character.

As per the classical organisation theory “an organisation is the arrangement or structure of the relationship power, objectives, roles, activities, communications and other factors that exist when people work together to accomplish certain objectives.”

A formal organisation is purposive and starts with a goal. There are 4 traditional structural issues incorporated in organisation theory.

* Grouping tasks to form individual jobs.
* Grouping jobs into sections, departments and higher administrative units.
* Delegating authority, allocating responsibility.
* Organising scientifically the work at plant level.

The classical approach described organisation as a closed system.[13]

B) Organisation as a Process:

In this sense, an organisation is an ongoing process of structuring or arranging, the parts of an organisation. It is a process or managerial function of organising work, people and the systems. The process concept stresses dynamic nature of an organisation and it permits an oranisation to be considered as an open adaptive system. The second concept of an organisation as a process adds 3 more issues.

a) Provision of an organisational climate so that people are motivated to give off their best in achieving organisational objectives.

b) Design of communication systems for effective decision making, control and co-ordination, i.e. adequate information flow at each decision center throughout the organisation.

c) An overall organisation that is innovative and responsive to relevant environmental changes.

Conclusion:

Both concepts of organisation (a structure and a process) are essential in the study of organisation and management. Both are valuable instruments or means to the ends namely human welfare and satisfaction. An organisation is a means to satisfy organisational and individual objectives. Our modern life needs organisations for all operative and collective activities. We want form and informal or social structures to complement and supplement each other for accomplishing desired objectives.

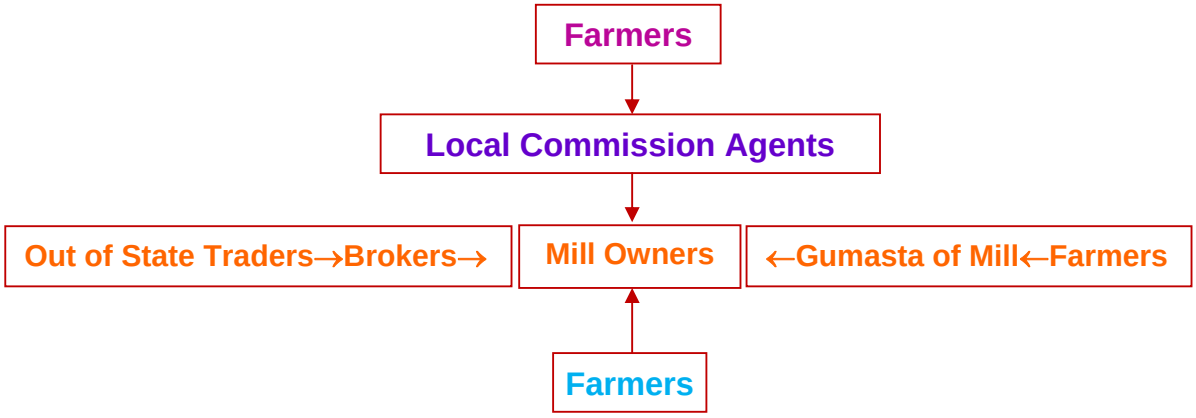
6.4 Organisation of Sample Oil Mills:

For the study of this research work out of total 98 oil mills 70% oil mills i.e. 69 oil mills and 25% i.e. 20 tel-ghani units are selected as sample oil mills and sample tel-ghani units. For the study of organisation and management of sample oil mills it is necessary to study processing of oilseeds, extraction of oil, elaboration of machinery, capital system, employment of labours, power supply and finance etc.

The activities of the oil mill owners related to the production of oil and oil cake, purchase of oilseeds, sale of oil and oil cake are classified as follows:

A) Purchase Management:

Mill owners purchase the oilseeds from brokers. The farmers from Solapur district bring oilseeds in A.P.M.C. Market of Solapur and it is sold through broker. Most of the oilseeds are made available by the traders out of the state of Maharashtra and traders from Karnataka and Andhra Pradesh states bring oilseeds directly to the brokers of Solapur market.



Maximum quantity of oilseeds is supplied by the brokers. The Oil Mill owners also purchase directly from farmers and through

middleman. The gumasta of mill works on behalf of mill owner. He knows the quality, market price, oil percentage and other related information of current market.

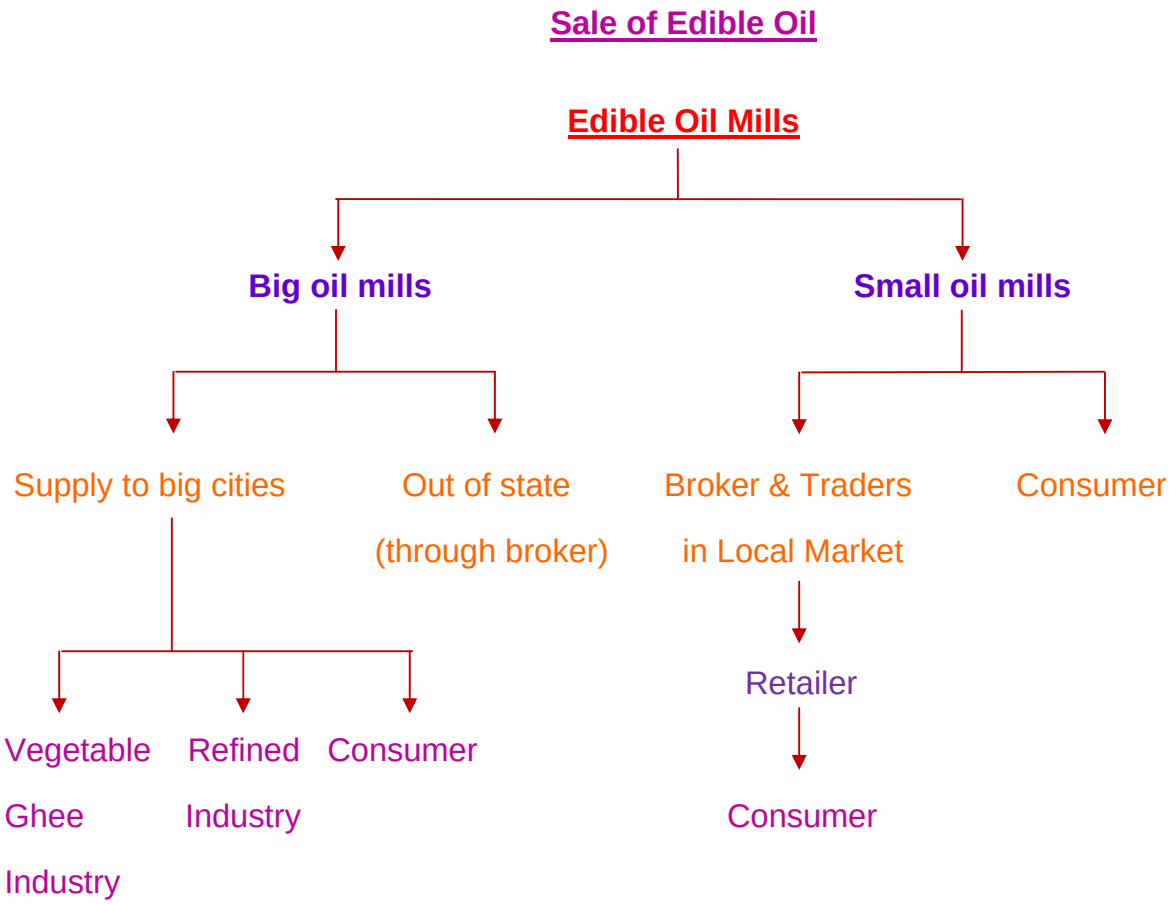
Top management holds responsible operations for

1) Obtaining sales volume.
2) Providing profit contributions
3) Continuing business growth

Sales management originally referred exclusively to the direction of sales force personnel. Later, the term took on broader significance-in addition to the management of personal selling. Sales management meant management of all marketing activities, including advertising, sales promotion, marketing research, physical distributions and pricing. In time, business adopting academic practice, came to use the term marketing management rather than Sales Management to describe the broader concept. Then the definitions committee of the American Marketing Association agreed that sales management meant the planning, direction and control of personal selling, including recruiting, selecting, equipping, designing, routing, supervising, paying and motivating as these tasks apply to the personal sales force.

The bigger oil mills send most of their oil to Mumbai, Delhi, Nagpur, Kolkata and Pune - small oil mill owners mostly sell their oil in the local market, though a few of them send a part of their supplies to Mumbai. This oil is used in these big cities as a raw material for vegetable ghee industry, refined oil industry, soap industry and a small part of it for direct consumption.

The following chart shows the selling system of oil by the oil mill owners in Solapur.



Out of 69 sample oil mills, 60 big oil mills sale their oil to refined and vegetable ghee industry in the state market like Mumbai, Pune and cities of other state.

The small oil mill owners sale their oil only in the local market directly to the consumer and directly to the retailers.

6.5 Different Kinds of Edible Oil Production:

Different kinds of edible oil are produced by the existing oil mills in city of Solapur. They are mainly groundnuts oil, sunflower, oil, safflower oil, mustard oil, sesame oil etc. Almost all these oil

mills are owned by the private persons under different form of private organisations. The production of oil depends upon the number of the working hours of the oil mill. In the survey, it is found that, there is a large production of edible oil by the oil mills which are working for 8 hours in a day. The oil mills which are working for less number of hours, the production of oil by such oil mills is less.[3]

The small or medium size expellers are actually operated for 8 hours in a day. The 5 quintals of oilseeds are crushed within 8 hours in a day by the small or baby oil mill. Generally 180 kg. oil and 310 kg. oilcakes are produced by crushing 5 quintals oilseeds in a day. This shows 36 kg. oil and 62 kg. oilcakes for per quintal. The ratio is not generally applicable in respect of all kinds of oilseeds and linseeds oil. This ratio is changing in respect of the different oilseeds, for example 19 quintals and 120 quintals cake are produced by crushing 150 quintals of cotton seeds. Thus there is a loss of 8 quintals in the process. The brief information about the oil mills in city of Solapur in respect of different kinds of edible oil production is as follows:

(a) Linseeds Oil:

Generally, 20.3% oil is produced from linseed in city of Solapur. On very rare occasions, linseed oil is produced, it is immediately dries up. It is of a yellow gold colour. It is very testy.

(b) Groundnut Oil:

Groundnut oil is important edible oil in Solapur city. Groundnuts are produced mostly as a rained ‘kharif crop’. Nearly 95% of the crop is raised with the help of monsoon rains. The groundnut oil is made by ghanis and also it is crushed by expellers. It contributes the major share among all edible oils. It is also used for the manufacture of Vanaspati. Groundnuts are bought from the

other districts and also from other states, such as Gujrat, Madhya Pradesh, Uttar Pradesh, Andhra Pradesh and Karnataka etc. The production of this oil is 40 to 45% and production of oil cake is 52 to 57%. When the groundnut oil is fresh its colour is little yellow. This oil can be stored for some period of time. In that case also, the colour of such oil does not change.[1]

(c) Sesame Oil:

India ranks first in area under cultivation of sesame in the world. The common varieties cultivated varieties are either black or white seeds. About 20% to 25% oil is produced from the sesame seeds. The colour of such oil is little yellow. Sesame is relatively costly oil and it is primarily used for edible purposes. In Solapur city, such oil is not produced by expellers. The use of at least 5% of such oil is used for production of vanaspati oil.

(d) Cotton Seeds Oil:

The cotton seed oil is one of the edible oil in America and in the most of the Western Countries. 15 tonnes of oil and 35 tonnes of cake are produced by crushing 100 tonnes of Cotton Seeds. This oil is used for manufacturing Vanaspati Ghee. In India generally this oil is produced by crushing 13 lakhs tonnes of cotton seed. In Solapur city such oil is not produced by the oil mills.[5]

(e) Safflower Oil:

It is also known as ‘Karadi Oil’. In Maharashtra safflower is one of the major oilseed crops and is second in important next to the groundnuts. There is about 26% of the total area under safflower oilseeds in the state. It is mainly grown in 2 agro-climatic zones. Solapur is one of the major districts in growing safflower. There are some other district places such as, Sangali, Satara, Beed, Jalana,

Pune, Ahmednagar, Parbhani and Jalgaon wherein the safflowers are produced. The yield levels of Maharashtra are higher than the average yield of the country. The extraction of safflower oil is 45% to 50% in city of Solapur. Therefore 23 to 25 kg.oil is produced for per quintal of safflower seeds.[5]

In order to protect the oil extraction, occupation of teli community, there is restriction of Khadi and Village Oil Industries Commission for extraction of safflower seeds on expeller units/oil mills. Therefore, in the city of Solapur, the safflower oil is produced by ghanis and it is solely used for edible purposes. The production of such oil is 40% to 45% in the city of Solapur. This oil is of golden yellow colour. It is not also as fat as is the case of groundnut oil. It is a very testy. Many times the persons of High BP consume karadi oil in the daily food, because it is comparatively healthy and hygienic and fat is less. The karadi oil is produced by ghanis and also by portable power ghanis. It is testy and pure for consumption as daily food.

(f) Mustard's Oil:

It is most popular edible oil in north India. This oil is a yellow liquid and of a strong acrid dour until it is refined. It is also used for manufacture of soap, liniments and other medicinal preparations. Particularly it's most common use is form massing purposes, in rural area. The production of this oil is 10% to 12%. It has been found by this survey that none of the oil mills is producing mustard oil in Solapur city.

(g) Sunflower oil:

It is also used for edible purpose. The most of the oil mills in Solapur city extract the sunflower oil. About 32% to 35% of the oil produced from 1 quintal seeds. In Solapur city, most of the oil

owners purchase such seeds. The colour of such oil is faint yellow. Sun-flower seeds are bought from the other districts and states, such as Begampur, Barshi, Modnimb etc. and Indi, Bijapur, Gadag, Hubli etc. from other states.[4]

(h) Soybean Oil:

Soybean occupies the first place in the World Oil Production. In India, it has the third place in the oilseeds and oil production. It contains 20% to 22% good quality of oil and 40% to 45% protein and has a tremendous potential to meet protein caloric malnutrition.

6.6 Sample Oil Mills:

At present, in the year 2007-08, there are 98 oil mills and 80 tel-ghani units in Solapur city. Out of the total oil mills most of the mills are located in agro area which is specially developed by agricultural produce marketing committee, Solapur in the year 1990. By the random sample method 69 oil mills i.e. 70% of the total oil mills and 20 tel-ghani units i.e. 25% of 80 tel-ghani units are selected for the present study. The sample 69 oil mills as productive units are detailed under the following table 6.1. It shows the name of the oil mills, size of expellers, number of expellers, crushing capacity, year of establishment, investment and working capital.[4]

The number of big size mills is 60 having 129 expellers (size 33" x 6") and remaining 9 mills are having small size or baby expellers (27" x 5"). These sample oil mills are classified under 2 heads on the basis of their production capacity, investment and working capital.[4]

a) Big Size Sample Oil Mills

b) Small Size or Baby Sample Oil Mills

Table 6.1

Sample Oil Mills in Solapur city in 2007-08

Sr. No.	Name of the Mill	Size of Expellers	Number of Expellers	Crushing Capacity in 8 Hours	Year of Establi-shment	Invest-ment (Rs. In Lakhs)	Working Capital (Rs. In Lakhs)
A)	**BIG SIZE SAMPLE OIL MILLS**						
1.	Mokale Oil Mill	33" x 6"	2	100 Bags	1974	70	35
2.	Anand Oil Mill	33" x 6"	1	50 Bags	1975	34	16
3.	Vijay Oil Mill	33" x 6"	3	150 Bags	1969	98	46
4.	Shri Oil Mill	33" x 6"	2	100 Bags	1968	67	32
5.	Dipak Oil Mill	33" x 6"	1	50 Bags	2002	35	17
6.	Vijaykumar Oil Mill	33" x 6"	3	150 Bags	1965	97	44
7.	Shriniwas Oil Mill	33" x 6"	1	50 Bags	1998	34	16
8.	Vinayak Oil Mill	33" x 6"	1	50 Bags	1976	34	16
9.	Suraj Oil Mill	33" x 6"	1	50 Bags	1980	32	14
10.	Shri Ganesh Oil Mill	33" x 6"	2	100 Bags	1982	66	29
11.	Hirolli Oil Mill	33" x 6"	1	50 Bags	1990	34	17
12.	Shri Siddhivinayak Oil Mill	33" x 6"	1	50 Bags	1991	33	16
13.	Vikranth Oil Mill	33" x 6"	2	100 Bags	1969	68	29
14.	Shivanand Oil Mill	33" x 6"	2	100 Bags	1968	67	30
15.	Shivanna Oil Mill	33" x 6"	2	100 Bags	2002	65	31
16.	Kalashetti Oil Mill	33" x 6"	2	100 Bags	2003	64	29
17.	Akash Oil Mill	33" x 6"	2	100 Bags	1976	69	32
18.	Rasul and Kondaji Oil Mill	33" x 6"	2	100 Bags	1965	66	30
19.	Gajanan Oil Mill	33" x 6"	2	100 Bags	1968	68	31
20.	Toshniwal Oil Mill	33" x 6"	1	50 Bags	1980	36	18
21.	Mahalaxmi Oil Mill	33" x 6"	1	50 Bags	1984	34	19
22.	Akash Oil Mill	33" x 6"	2	100 Bags	1977	67	28
23.	Balasahib Oil Mill	33" x 6"	1	50 Bags	2004	33	16
24.	Shalimar Oil Mill	33" x 6"	1	50 Bags	2004	35	16
25.	Renuka Oil Mill	33" x 6"	2	100 Bags	2005	68	26
26.	Pampanna Oil Mill	33" x 6"	1	50 Bags	2005	34	15
27.	Mangalure Oil Mill	33" x 6"	2	100 Bags	1966	66	26
28.	Shri Hanuman Oil Mill	33" x 6"	2	100 Bags	1970	68	27
29.	Chandrashekhar Oil Mill	33" x 6"	2	100 Bags	1973	69	29
30.	Manthalkar Oil Mill	33" x 6"	1	50 Bags	2002	31	15
31.	Dnyaneshwar Oil Mill	33" x 6"	1	50 Bags	1994	32	16
32.	Chugi Oil Mill	33" x 6"	3	150 Bags	2000	99	47
33.	Shri Siddheshwar Oil Mill	33" x 6"	1	50 Bags	2001	33	15
34.	Shri Sangameshwar Oil Mill	33" x 6"	1	50 Bags	2001	35	16
35.	Basaveshwar Oil Mill	33" x 6"	3	150 Bags	1971	96	45
36.	Shedulkar Oil Mill	33" x 6"	3	150 Bags	2003	97	47
37.	Jeure S. V. Oil Industry	33" x 6"	2	100 Bags	1970	68	34

Table 6.1 Contd... Sample Oil Mills in Solapur city in 2007-08

Sr. No.	Name of the Mill	Size of Expellers	Number of Expellers	Crushing Capacity in 8 Hours	Year of Establi-shment	Invest-ment (Rs. In Lakhs)	Working Capital (Rs. In Lakhs)
38.	Birajdar S.S. Oil Industry	33" x 6"	3	150 Bags	1975	93	44
39.	Hirolikar Oil Mill (A)	33" x 6"	2	100 Bags	2003	67	26
40.	Hirolikar Oil Mill (B)	33" x 6"	2	100 Bags	2004	68	27
41.	Hirolikar Oil Mill (C)	33" x 6"	2	100 Bags	2006	66	26
42.	Pardeshi Oil Industry	33" x 6"	2	100 Bags	1988	67	26
43.	Shri Siddhivinayak Oil Mill	33" x 6"	2	100 Bags	2004	68	28
44.	Rohan Oil Industry	33" x 6"	3	150 Bags	2001	96	43
45.	C. V. Kalshetty Oil Industry	33" x 6"	3	150 Bags	1992	97	44
46.	Shri Sindagi Oil Mill	33" x 6"	2	100 Bags	1980	66	27
47.	Shri Channabasaveshwar Oil Mill	33" x 6"	3	150 Bags	2005	96	43
48.	Basavraj Oil Industry	33" x 6"	3	150 Bags	2004	97	45
49.	Pandurang Oil Industry	33" x 6"	2	100 Bags	1984	68	26
50.	Toshniwal Oil Mill	33" x 6"	3	150 Bags	1974	98	46
51.	Bhawani Oil Industry	33" x 6"	2	100 Bags	1986	64	25
52.	Siddhanath Oil Mill	33" x 6"	1	50 Bags	2004	35	17
53.	S. G. Pipare Oil Mill	33" x 6"	2	100 Bags	2005	67	27
54.	Mashale Oil Mill	33" x 6"	3	150 Bags	1965	97	47
55.	Mayur Oil Mill	33" x 6"	3	150 Bags	1970	95	43
56.	D. R. Ghala Oil Mill	33" x 6"	2	100 Bags	2006	66	24
57.	Chadchankar Oil Industry	33" x 6"	3	150 Bags	2001	97	44
58.	Konapure Oil Mill	33" x 6"	1	50 Bags	2001	34	15
59.	Dulange Oil Industry	33" x 6"	3	150 Bags	1975	98	45
60.	Vyankateshwara Oil industry	33" x 6"	3	150 Bags	1974	96	46
	Total: A:		**140**	**6780 Bags**		**3898**	**1749**
B)	**SMALL SIZE OR BABY SAMPLE OIL MILLS**						
1.	Shri Samarth Oil Mill	27" x 5"	1	30 Bags	1974	12	6
2.	Shri Sangameshwar Oil Mill	27" x 5"	1	30 Bags	2004	13	6
3.	Ashok Oil Mill	27" x 5"	1	30 Bags	1992	13	7
4.	Pipare Oil Mill	27" x 5"	1	30 Bags	2003	12	5
5.	Bhogade Oil Mill	27" x 5"	2	60 Bags	1968	23	11
6.	Gaurishankar Oil Mill	27" x 5"	1	30 Bags	2001	12	6
7.	Dhangapure Oil Mill	27" x 5"	1	30 Bags	1992	11	7
8.	Vishwanath Oil Industry	27" x 5"	1	30 Bags	1984	12	6
9.	Banshankari Oil Mill	27" x 5"	2	60 Bags	1980	25	11
	Total: B:		**11**	**330 Bags**		**133**	**65**
	Total: A+B = C		**151**	**7110 Bags**		**4031**	**1814**

SOURCE: Calculated from Field Survey Primary Data.

a) Big Size Sample Oil Mills:

The above table 6.1 (total A) shows that the total investment is Rs.3898 Lakhs and the working capital is Rs. 1749 Lakhs in big size sample oil mills. Since, 2001 the investment by the "A" Category oil mills are increasing, because these mills supply the oil and oil cake to the state and national market. Some mills particularly Mokale Oil Mill, C.V. Kalshetti Oil Mill, Mahesh Oil Mill, Sindagi Oil Mill, Ghala Oil Mill, Rohan Oil Mill are exporting their production of edible oil through the export, import agent. These producers are having a huge storage capacity in the rubi season they store the oilseeds such as groundnut, and sunflower. Therefore, these oil mills run throughout the year with full capacity. These oil mills run through the modern management with modern management instruments such as oil testing equipment, moisture testing machine and oil cake testing machine, computer, internet. They are also having the automatic oil filling machine and modern weigh bridge. In the recent days almost all the oil mills elaborated a modern elavator to eliminate the cost of production.[17]

b) Small Size or Baby Sample Oil Mills:

The number of small size sample oil mills is 9 having 11 small size expellers. The investment and working capital of these oil mills are low as compared to the big size oil mills. The production capacity of these oil mills is also low. Therefore, these oil mills produced the edible oil and sale the oil and oil cake only in the domestic market. The storage capacity of raw material, number of labours, production capacity, sale of output, banking operations all these are limited. These oil mills are generally run by the owners of teli people who are originally in the field of edible oil business.[5]

Originally they are having the business of tel-ghani. Since, 1990 they entered in the oil mill business. The sample 9 baby oil mills as productive units detailed under the above table 6.1.

The above table 6.1 (total B) shows that the total investment is Rs.133 Lakhs and the working capital is Rs. 65 Lakhs in small size or baby sample oil mills. As compared with the above big oil mills the total investment and working capitals are low. These oil mills are not having the sufficient working capital therefore they cannot store sufficient oilseed as a raw material to run the oil mills throughout the year. Therefore, these oil mills run only in rubi season. The production capacity of these oil mills is low. So they are only in the domestic market. These oil mills are not using the modern machineries and equipments. Also they are not using modern technology of oil extraction. These oil mills are not in the state market, due to inferior quality of product for non-use of modern machineries. The management is done only by the owner himself. These oil mills purchase the raw material for production only in the domestic market. The numbers of labours are also very low and they are not permanent. These oil mills run like a cottage industry. These oil mills are using the traditional equipments. Therefore the cost of production is high as compared to the big size oil mills.

6.7 Sample Tel-Ghani Units:

At present, there are total 80 tel-ghani units in Solapur city. These ghani units are producing only safflower oilseeds because it is not easy and possible to produce the other oilseeds in ghani. In the beginning of 20th century there were only 10 ghanis located at Sadar Bazar and crushing the safflower oilseeds by the very old Kulu ghani System. After independence the improved ghani come forth which is known as bullock driven ghani. Bullock is used as power to crush

the oilseeds. In the further period particularly in 1970-71, electric power was used for crushing the oilseeds which is known as overhead power driven ghani. In the further period, particularly in the year 1983, the improved ghani come forth which is known as portable power ghani. At present, in Solapur city safflower oilseed is crushed by the modern Portable Power ghani.[16]

Out of the total 80 tel-ghani units, 20 tel-ghani units i.e. 25% are selected for the present study. The selection is done with random sampling technique. The production of edible oil is varying because these ghani units run only in the rubi season period. The following table 6.2 shows the name of the owner of the tel-ghani units, number of ghani, investment and working capital.

Table 6.2

Number of Small Size Sample Oil Mills, Production Capacity, Investment and Working Capital

Sr. No.	Name of the Owner of the Tel-Ghani Units	Number of Ghani	Investment (Rs. in Lakhs)	Working Capital (Rs. in Lakhs)
1.	P. S. Halli	2	3.00	4.00
2.	S. S. Halli	2	4.00	5.00
3.	Narayan Ghodke	2	4.00	5.00
4.	R. B. Dodmani	2	3.00	3.50
5.	K. S. Shedulkar	2	3.00	4.00
6.	S. S. Kalshetti	2	3.50	4.50
7.	Shankar Pardeshi	2	4.50	5.00
8.	S. S. Pardeshi	2	4.00	5.00
9	Jagdamba Oil Centre	2	4.00	5.00
10.	Sopan Tel Vikri Kendra	2	3.00	3.50
11.	C. J. Kalshetti	2	3.50	4.50
12.	V. V. Kalshetti	2	3.50	4.00
13.	Sangmeshwar Tel Utpadan Kendra	2	3.00	4.00
14.	Manik Kalshetti	2	3.00	4.00
15.	V. M. Kalshetti	2	3.00	3.50
16.	S. H. Chungi	2	4.00	4.50
17.	Hiroli Gramodyog Kendra	2	4.00	5.00
18.	Kantilal Pardeshi	2	4.00	5.00
19.	Jyoti Oil Centre	2	3.00	4.00
20.	Ramesh Manthalkar	2	4.00	4.50
	Total:	**40**	**71.00**	**87.50**

SOURCE: Calculated from Field Survey Primary Data.

The above all owners of tel-ghani units are having this traditional oil extraction business. They are only in the domestic market. The production capacity of these ghanis is limited. This oil extraction system is mostly labour intensive technique. Due to small size of business and traditional method of oil extraction they cannot compete with oil mill business. The following table shows the production of edible oil and oil cake by sample tel-ghani units during 1990-91 to 2007-08.[15]

6.8 Oil and Oilcakes Production by Sample Tel-Ghani Units During 1990-91 to 2007-08:

Table 6.3

Oil and Oilcakes Production by Sample Tel-Ghani Units During 1990-91 to 2007-08

Sr. No.	Year	Oil Production in Tonnes	Oilcakes Production in Tonnes	Total Production in Tonnes
1.	1990-91	140 (45.45%)	168 (54.55%)	308 (100%)
2.	1991-92	149 (45.43%)	179 (54.57%)	328 (100%)
3.	1992-93	152 (45.51%)	182 (54.49%)	334 (100%)
4.	1993-94	157 (45.51%)	188 (54.49%)	345 (100%)
5.	1994-95	163 (45.40%)	196 (54.60%)	359 (100%)
6.	1995-96	159 (45.43%)	191 (54.57%)	350 (100%)
7.	1996-97	152 (45.51%)	182 (54.49%)	334 (100%)
8.	1997-98	148 (45.40%)	178 (54.60%)	326 (100%)
9.	1998-99	142 (45.51%)	170 (54.49%)	312 (100%)
10.	1999-00	139 (45.42%)	167 (54.58%)	306 (100%)
11.	2000-01	135 (45.45%)	162 (54.55)	297 (100%)
12.	2001-02	129 (42.42%)	155 (54.58%)	284 (100%)
13.	2002-03	124 (45.42%)	149 (54.58%)	273 (100%)
14.	2003-04	121 (45.49%)	145 (54.51%)	266 (100%)
15.	2004-05	116 (45.49%)	139 (54.51%)	255 (100%)
16.	2005-06	111 (45.49%)	133 (54.51%)	244 (100%)
17.	2006-07	108 (45.38)	130 (54.62%)	238 (100%)
18.	2007-08	104 (45.41%)	125 (54.59%)	229 (100%)
	Total:	**2449 (45.45%)**	**2939 (54.55%)**	**5388** (100%)

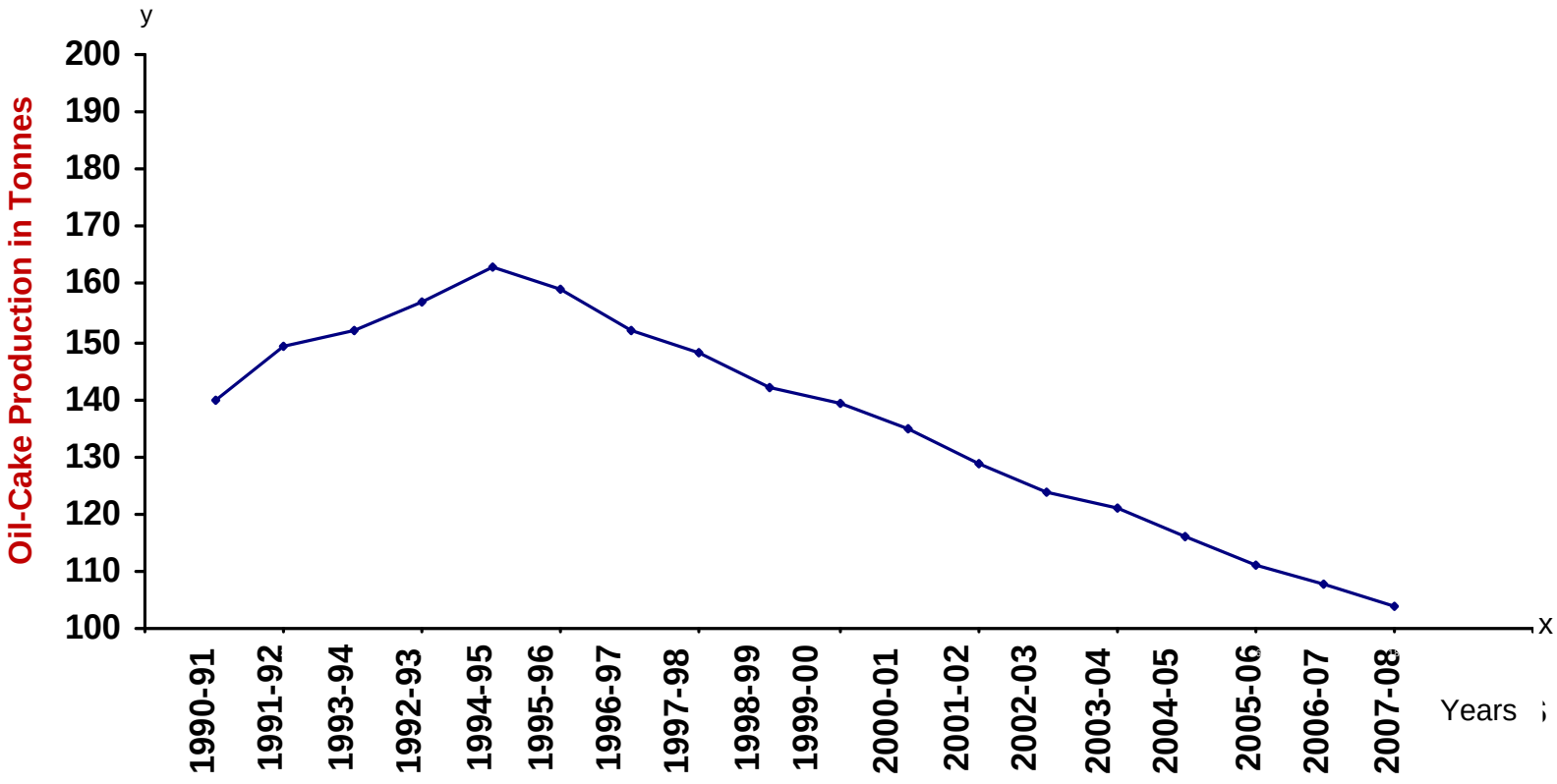
SOURCE: Calculated from Field Survey Primary Data.

The above table shows that within 18 years i.e. from 1990-91 to 2007-08 the production of edible oil is decreasing due to decrease in the area under cultivation of safflower in Solapur district. At present tel-ghani business depends upon the availability of the safflower oilseeds from the other states such as Andhra Pradesh, Karnataka etc. So the supply of edible oil in Solapur market by these units is limited to certain extent. In the competitive edible oil market in Solapur tel-ghani business is facing number of problems, therefore they are in a position to enter in modern oil extraction system i.e. oil mill.

The following graphs (6.1, 6.2 & 6.3) show the decreasing trend of oil and oil cake production by sample tel-ghani units during 1990-91 to 2007-08.

Graph 6.1

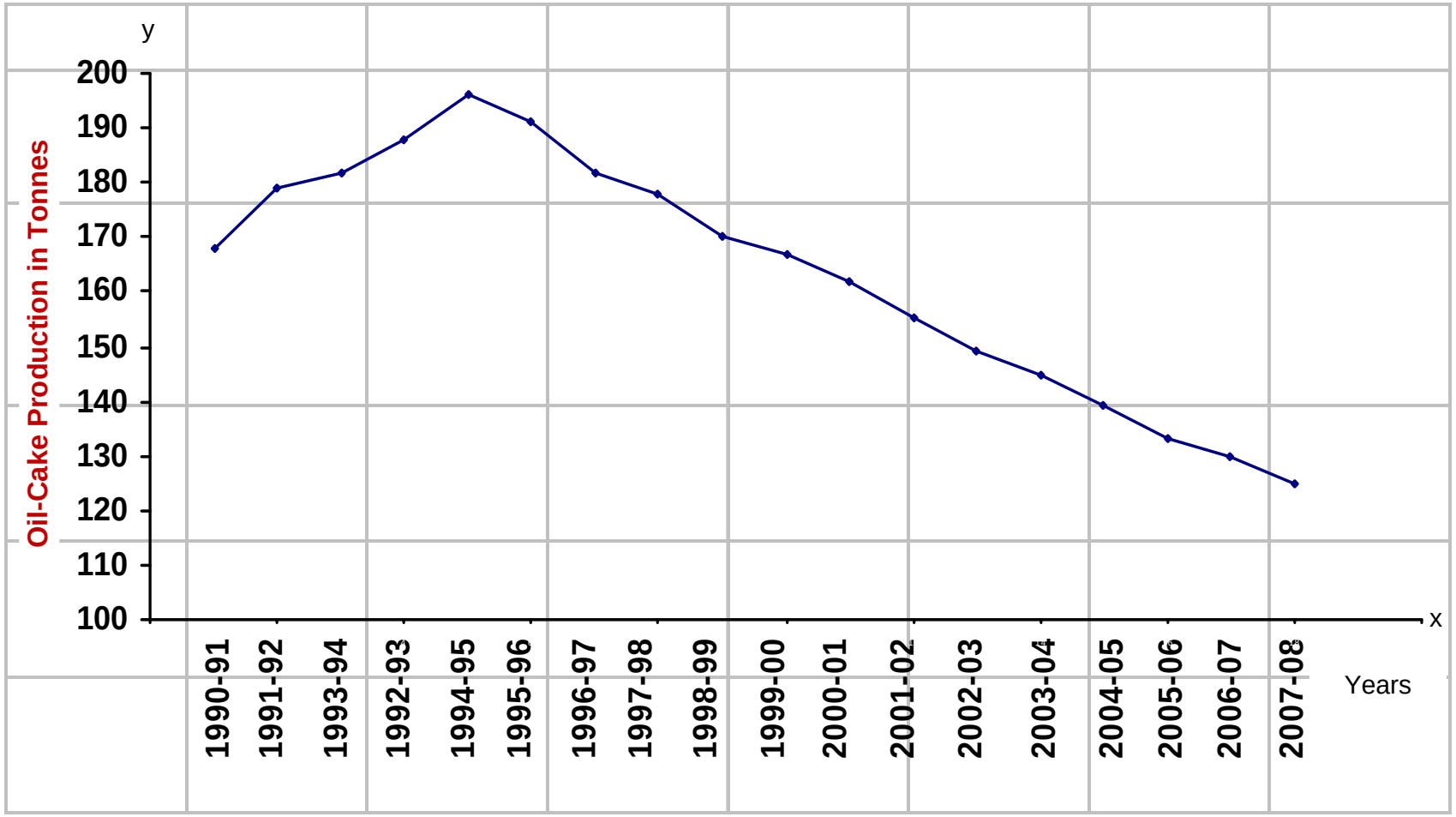
Oil Production by Sample Tel-Ghani Units
In City of Solapur During 1990-91 to 2007-08



Graph 6.2

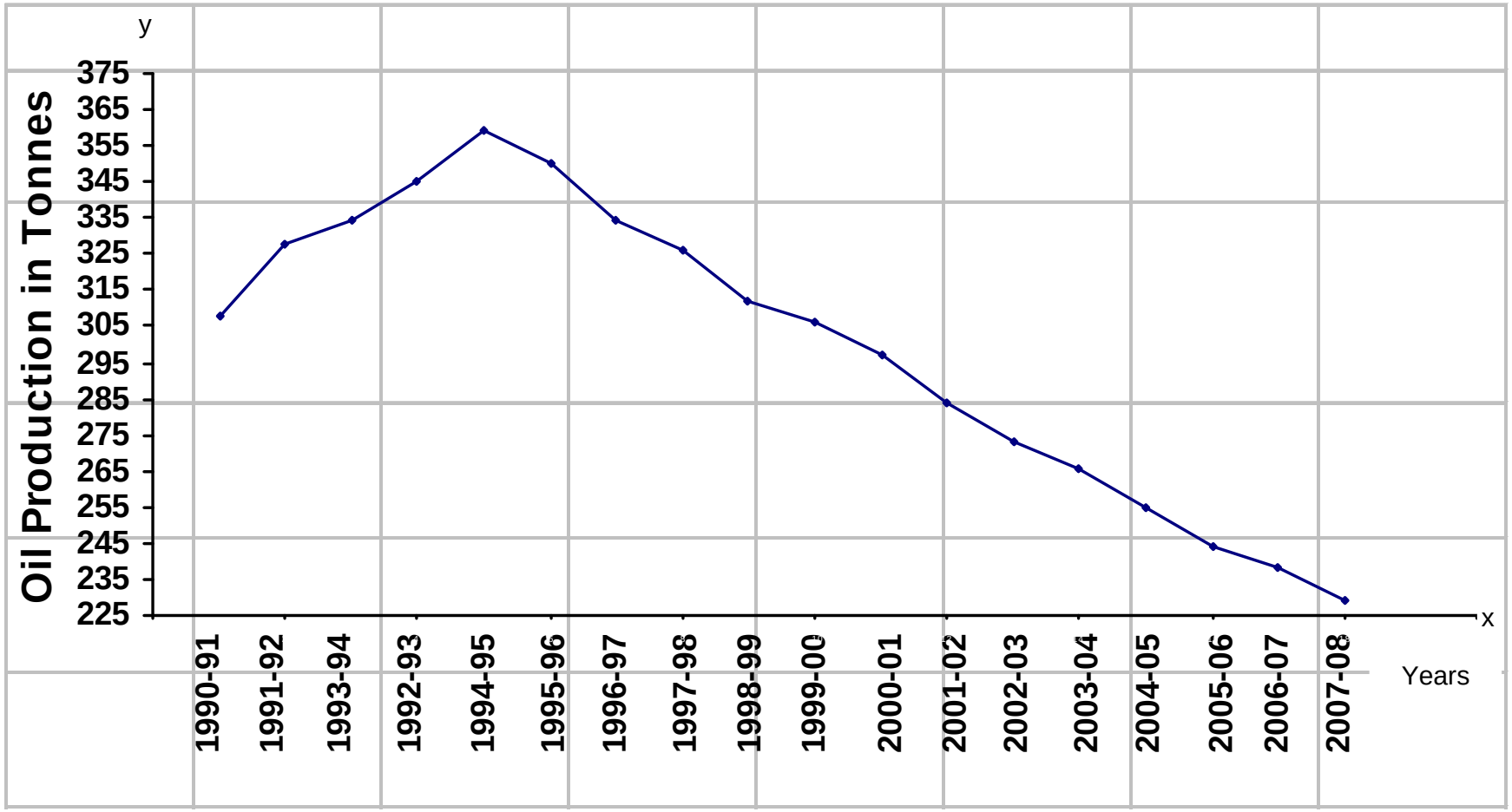
Oil-Cake Production by Sample Tel-Ghani Units

In City of Solapur During 1990-91 to 2007-08



Graph 6.3

Total Production of Oil and Oil-Cake by Sample Tel-Ghani Units In City of Solapur During 1990-91 to 2007-08



6.9 Production of Oil and Oilcakes in Sample Oil Mills During 1990-91 to 2007-08:

The oil and oil cakes are the main products of the oil mills. Their production is in the different ratio. There is also the different ratio of production in respect of oil and oil cakes of different oilseeds The yearly production of edible oils of all kinds of oilseeds by the total sample 69 oil mills in the city of Solapur ranging from 2737 tonnes in 1990-91 to 5716 tonnes in 2007-08. The following table shows the production of edible oil from the sample oil mills (69) in Solapur city from 1990-91 to 2007-08.

Table 6.4

Production of Edible Oil by Sample Oil Mills in City of Solapur from 1990-91 to 2007-08

(Figures in Tonnes)

Sr. No.	Year	Groundnut Oil	Sunflower Oil	Safflower Oil	Total
1.	1990-91	1368 (49.98%)	863 (31.53%)	506 (18.49%)	2737 (100%)
2.	1991-92	1499 (49.77%)	944 (31.34%)	569 (18.89%)	3012 (100%)
3.	1992-93	1538 (49.15%)	1061 (33.91%)	530 (16.94%)	3129 (100%)
4.	1993-94	1604 (48.92%)	1107 (33.76%)	568 (17.32%)	3279 (100%)
5.	1994-95	1628 (49.14%)	1112 (33.56%)	573 (17.30%)	3313 (100%)
6.	1995-96	1698 (58.31%)	1214 (41.69%)	--	2912 (100%)
7.	1996-97	1747 (58.90%)	1219 (41.1%)	--	2966 (100%)
8.	1997-98	1812 (58.32%)	1295 (41.68%)	--	3107 (100%)
9.	1998-99	1847 (57.02%)	1392 (42.98%)	--	3239 (100%)
10.	1999-00	1912 (57.47%)	1415 (42.53%)	--	3327 (100%)
11.	2000-01	2398 (58.93%)	1671 (41.07%)	--	4069 (100%)
12.	2001-02	2650 (61.30%)	1673 (38.7%)	--	4323 (100%)
13.	2002-03	2800 (61.35%)	1764 (38.65%)	--	4564 (100%)
14.	2003-04	2952 (59.64%)	1998 (40.36%)	--	4950 (100%)
15.	2004-05	3108 (58.83%)	2175 (41.17%)	--	5283 (100%)
16.	2005-06	3192 (58.26%)	2287 (41.74%)	--	5479 (100%)
17.	2006-07	3257 (58.39%)	2321 (41.61%)	--	5578 (100%)
18.	2007-08	3332 (58.29%)	2384 (41.71%)	--	5716 (100%)
	Total:	40342 (56.83%)	27895 (39.30%)	2746 (3.87%)	**70983** (100%)

SOURCE: Calculated from Field Survey Primary Data.

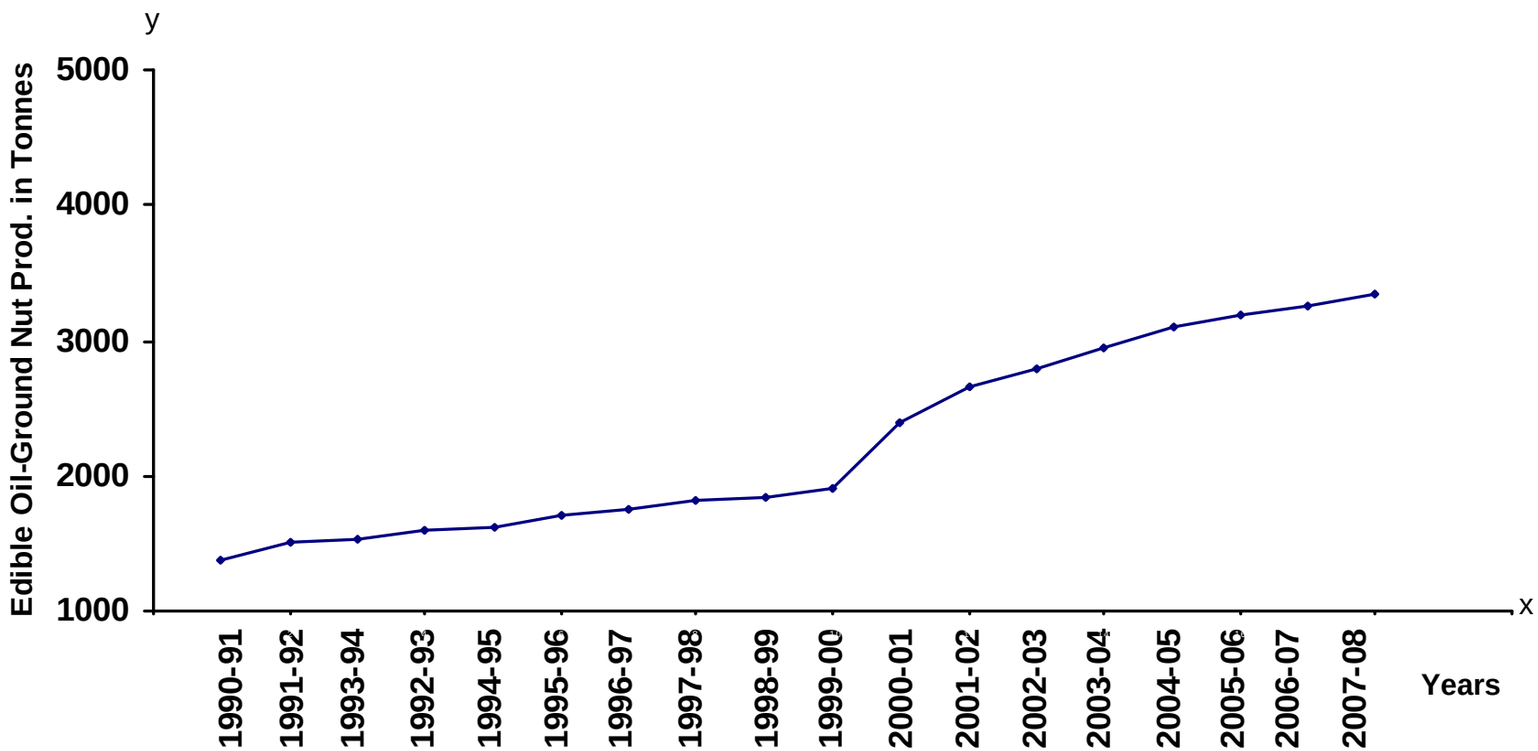
The above table shows that the production of safflower oil by oil mills is nil from 1995-96 i.e. due to restriction and prohibition for the crushing of safflower oil by the state Government and KVIC. From 1995-96 oil mill producers are restricted not to produce the safflower oilseed to support the cottage edible oil ghani producers.

From 1990-91 to 2007-08 though the production of edible oil is increasing very slow due to decreasing area under crop of oilseeds in the different districts of the states. One of the more important reasons is competition with the big edible oil production companies in the state and shortage of raw material.

The following graphs (6.4, 6.5, 6.6 & 6.7) show the increasing trend of production of edible oil by sample oil mills in city of Solapur during 1990-91 to 2007-08.

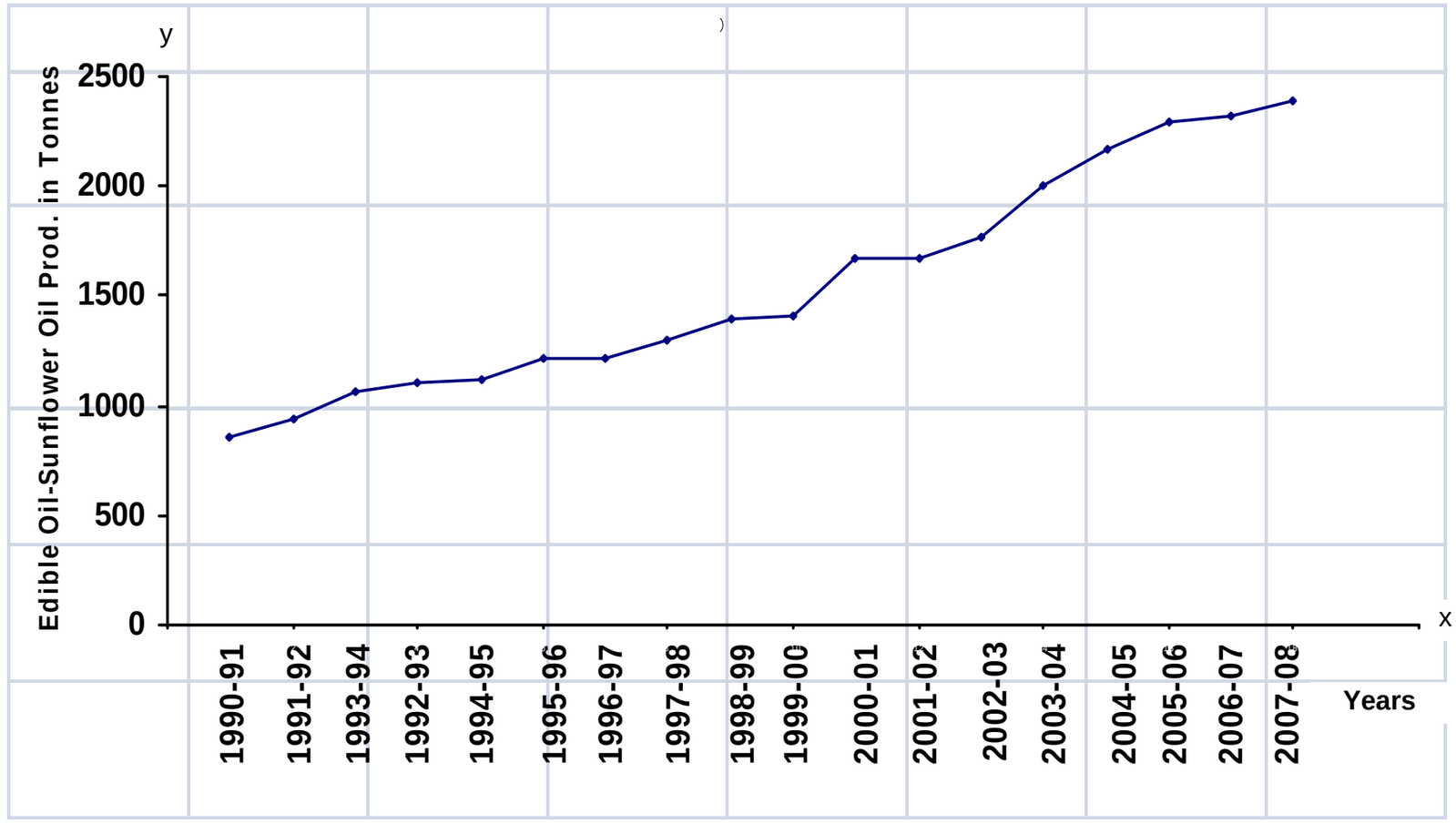
Graph 6.4

Production of Edible Oil (Groundnut Oil) by Sample Oil Mills in City of Solapur During 1990-91 to 2007-08.



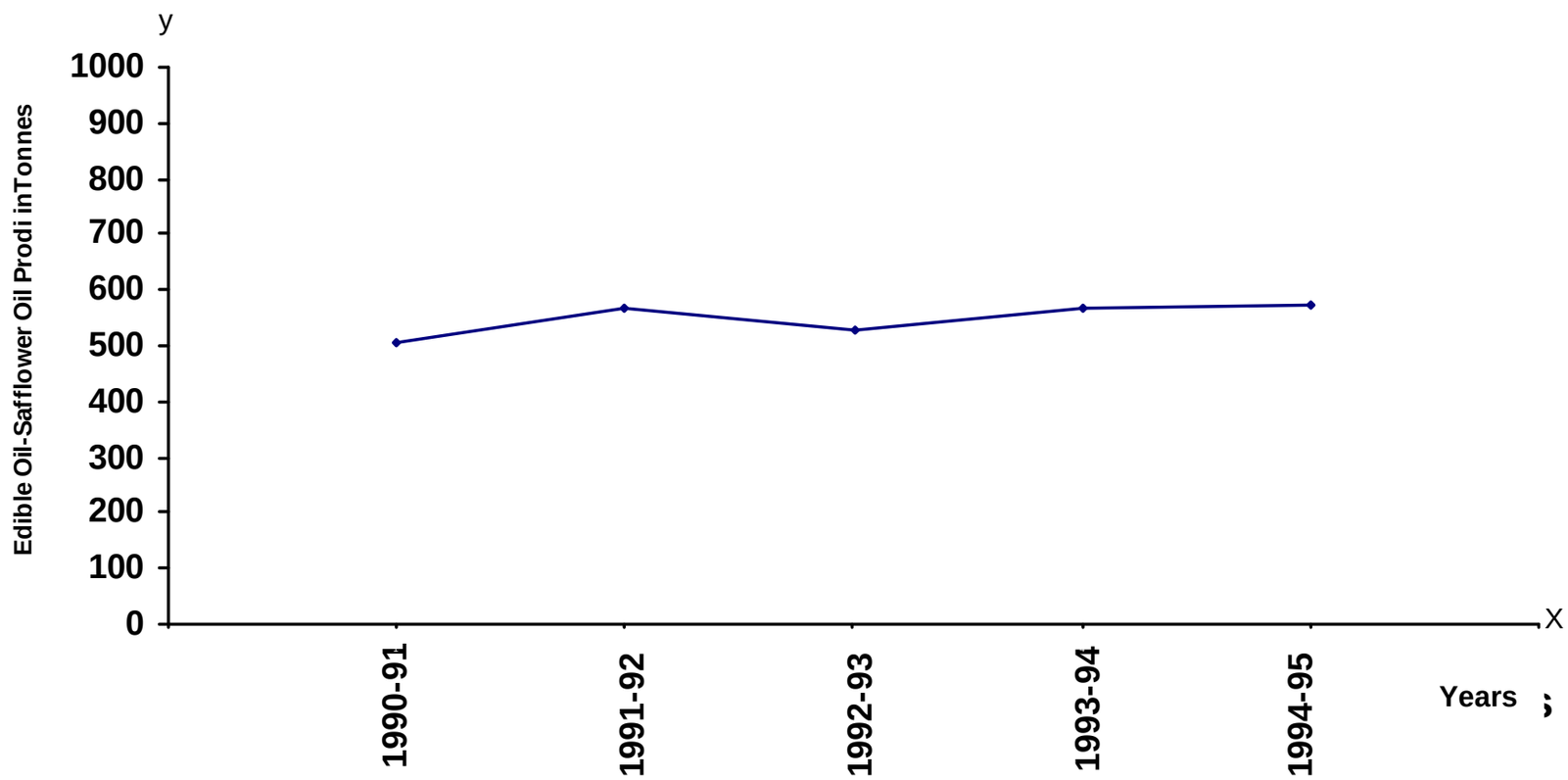
Graph 6.5

Production of Edible Oil (Sunflower Oil) by Sample Oil Mills in City of Solapur During 1990-91 to 2007-08.



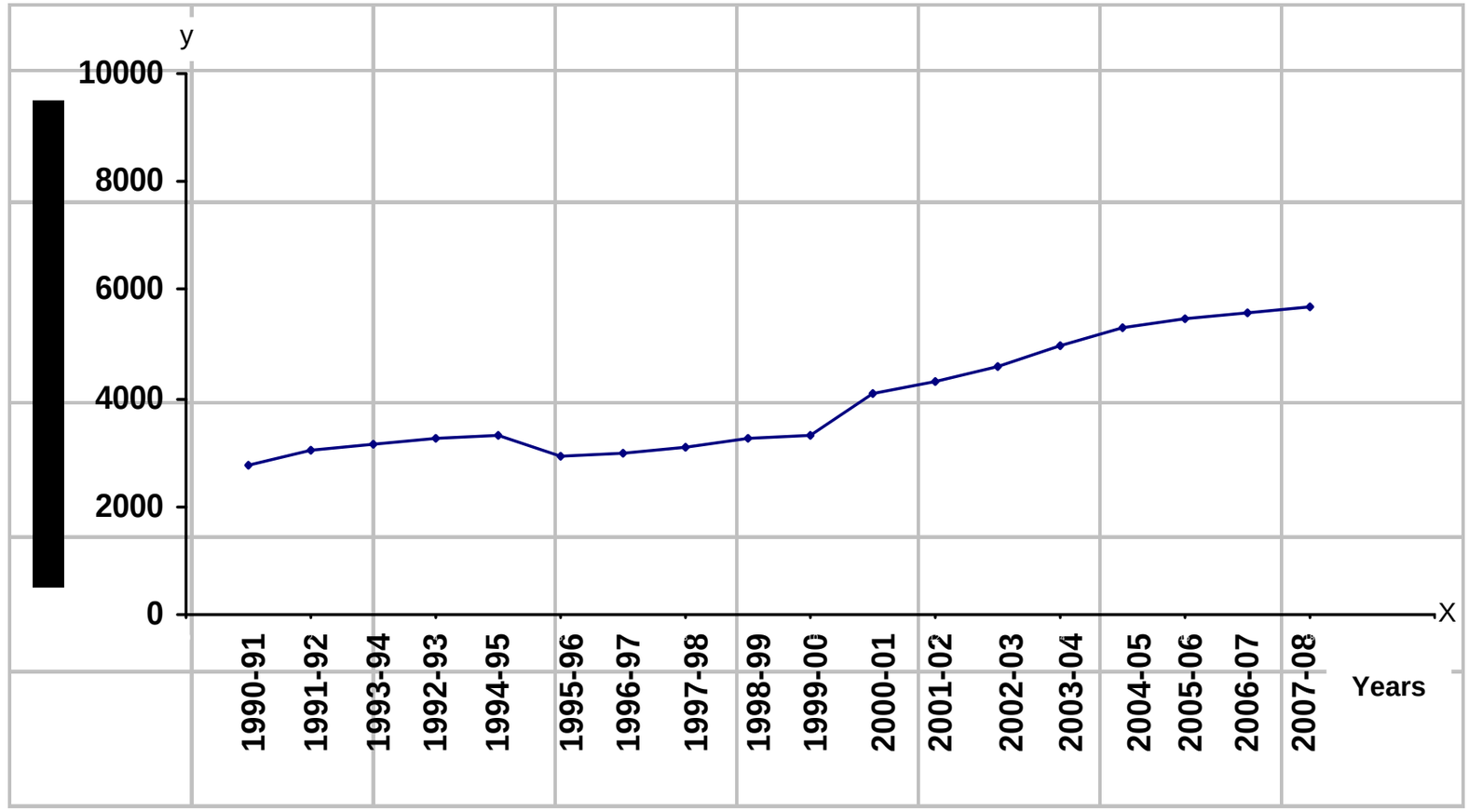
Graph 6.6

Production of Edible Oil (Safflower Oil) by Sample Oil Mills in City of Solapur during 1990-91 to 2007-08.



Graph 6.7

Total Edible Oil Production by Sample Oil Mills in City of Solapur During 1990-91 to 2007-08.



The ratio of the production of oil and oil cake from 1 quintal of the following different oilseeds is mainly specified as under:

Table 6.5

The Ratio of Production of Oil and Oilcakes from One Quintal of different Oilseeds

(Figures in Kg.)

Oilseeds	Oil	Oilcakes	Loss in Process
(A) Groundnut	42	57	1
(B) Sunflower	32	66	2
(C) Safflower	23	75	2

SOURCE: Calculated from Field Survey Primary Data.

Even though there is a good deal of oil production and oil-cake as produced by the oil mill owners the oil does not become immediate saleable, the oil first be tested by the laboratories and after the scientific examination the oil stands required standard, then it is certain that the oil is pure, so then it is put to sell.

6.10 By Product-oilcakes:

In the oil production, mainly, the oil is extracted from the various oilseeds and various methods of oil extraction are used. But at the same time, under the process of oil, there is also by-product after the extraction of oil from remaining part, is an oil cake. Essentially, in the very old method, there was no any system to extract the remaining part of the oil from the cake. But when the extraction of oil has been made possibly and efficiently by expellers and by the use of power and machines, the byproduct i.e. cake has been again made to process by the expellers to extract the

remaining part of the oil and therefore, whatever will be remaining that is mainly the “By Product” which is known as “Cake”. This by-product from the oilseeds like groundnut, safflower, mustard and sesame etc. are used as animal food. It is most potentional food for milking animal. The milking animals give the large quantity of milk and of better potentional milk. Therefore, cake as by-product is mainly used as a cattle food.

The oil-cake extracted from un-decorticated seed is generally used for manuring purposes which improves the physical condition of heavy oils, whereas that obtained from decorticated seed it is preferred as nourishing cattle food, lambs and poultry.

The oilcakes extracted are of different quantity from different oil-seeds. The cake as by-product is not an output in the same ratio from different types of oilseeds. It differs from seeds to seed, for example – 62 kg. oilcake is the by-product from extraction of 1 quintal oil-seeds of linseeds, whereas it is 82 kg. from cotton seeds and of 60 kg. from groundnut, of 75 kg. from safflower, 67 kg. from sunflower.

The different quantity of oil-cake is manufactured from different kinds of oil-seeds because the potentionality of oil is varying and is of different quantity for each type of the oil-seeds. The maximum oil is extracted from the groundnuts. The oil-cake of groundnuts is also very important and it is also comparatively more potentional food than that of all other oilseeds.

In the city of Solapur, there is 5331 tonnes of groundnut cakes are produced and 3934 tonnes of sunflower cakes are produced in the year 2007-08. There is a local market for the oil-cake and sometimes, the oilcakes are sold in the different part of the district of

Solapur, like Mohol, Mangalwedha, Begumpur, Karmala, Barshi, Madha, Modnimb. As there is a regular market for the same, it has assisted and strengthened the financial position of the oil mills and it has also caused for the development of the oil-mills.

During the period of survey, it has been seen from 1990-91 to 2007-08 there is a continuous increase in the production of by-product.

The table shows the production of oil cake in the oil mills of Solapur city from 1990-91 to 2007-08 (groundnut, sunflower, and safflower).

Table 6.6

Production of Oil-Cakes by the Sample Oil Mills in Solapur City from 1990-91 to 2007-08.

(Figures in Tonnes)

Sr. No.	Year	Groundnut Oil-cake in Tonnes	Sunflower Oil-Cake in Tonnes	Safflower Oil-Cake in Tonnes	Total Oil-Cake in Tonnes
1.	1990-91	2189 (51.87%)	1424 (33.74%)	607 (14.39%)	4220 (100%)
2.	1991-92	2398 (51.69%)	1558 (33.58%)	683 (14.73%)	4639 (100%)
3.	1992-93	2461 (50.76%)	1751 (36.12%)	636 (13.12%)	4848 (100%)
4.	1993-94	2566 (50.56%)	1827 (36.00%)	682 (13.44%)	5075 (100%)
5.	1994-95	2605 (50.80%)	1835 (35.78%)	688 (13.42%)	5128 (100%)
6.	1995-96	2717 (57.56%)	2003 (42.44%)	--	4720 (100%)
7.	1996-97	2795 (58.16%)	2011 (41.84%)	--	4806 (100%)
8.	1997-98	2899 (57.57%)	2137 (42.43%)	--	5036 (100%)
9.	1998-99	2955 (56.26%)	2297 (43.74%)	--	5252 (100%)
10.	1999-00	3059 (56.71%)	2335 (43.29%)	--	5394 (100%)
11.	2000-01	3837 (58.19%)	2757 (41.81%)	--	6594 (100%)
12.	2001-02	4240 (60.57%)	2760 (39.43%)	--	7000 (100%)
13.	2002-03	4480 (60.61%)	2911 (39.39%)	--	7391 (100%)
14.	2003-04	4723 (58.89%)	3297 (41.11%)	--	8020 (100%)
15.	2004-05	4973 (58.08%)	3589 (41.92%)	--	8562 (100%)
16.	2005-06	5107 (57.50%)	3774 (42.50%)	--	8881 (100%)
17.	2006-07	5211 (57.64%)	3830 (42.36%)	--	9041 (100%)
18.	2007-08	5331 (57.54%)	3934 (42.46%)	--	9265 (100%)
	Total:	**64546 (56.68%)**	**46030 (40.42%)**	**3296**	**113872** (100%)

SOURCE: Calculated from Field Survey Primary Data.

The above table shows there is accelerating production of oil-cake in ascending manner in respect of groundnut and sunflower cakes. But the cake from safflower is not in the same ratio as that of groundnut and sunflower. The most of the oil mills manufactured the oil from groundnut and sunflower. But an occasionally, there is also the manufacture of oil from safflower. In the state of Maharashtra, there is prevention for the use of safflower by the oil mills from 1990. This prevention is motivated to grant some facilities and to promote the strength of the poor Teli community, who are manufacturing oil by ghanis.

However, the oil industries have the main purpose to produce oil. At this stage, it is noticed that after decorting the oilseeds, there is a large quantity of hulls. This is also though not exactly called as a product or by-product of the oil mills but it is also significant, that the hull is used in manufacture of cellulose, insulations, abrasives and as a fuel.

6.11 Capital Structure:

The capital includes machineries, tools and instrument, building and circulating capital. The larger the investment of the capital in the large scale industries, is most profitable. If the investment of capital is insufficient than that normally required for industry, there is every possibility of incurring loss. For the establishment and also for the keep running of the oil industries, there are some Co-operative Institutions and Nationalised Banks, which are extending the help by providing the loans for the formation of capital.

Very recently “Gramin Banks” has been established with a view to provide the financial aid to the villagers, for undertaking the

manufacturing activities under the system of cottage industries. Maharashtra state Finance Corporation has supplied 75% of the capital for the small scale and the large scale industries for the construction of buildings and to purchase machineries. Circulating capital is not supplied by the Maharashtra state Finance Corporation. Therefore, the circulating capital is supplied mainly by Commercial Banks. Co-Operative Banks are engaged in financing small scale industries by way of working capital and term finance. The R.B.I. has classified cottage and small scale industries in 22 broad groups. The eligible institutions get refinance accommodation for production and marketing activities. Refinance is provided at 2&½% to 3% below the Bank rate to the state Co-Operative Banks amounted to Rs.15,00,000/- in 1988-89.

In addition to this, if there is any need of more capital to the oil mill owners, they can obtain from the persons who are mainly dealing Hundi transactions. But for this, the mill owner must have the creditability in the market then only they can collect the capital by this mode. If there is more circulating capital or sufficient working capital, the financial position becomes sound. Especially in the oil business, the prices are fluctuating and there are also adverse consequences on account of Teji and Mandi. In the oil business the oil mill owners have to undergo and to bear the burden of the changing nature of production and market. The more capital is needed to face and to substain the effect.

The capital of oil mill can be divided into 2 broad categories:

a) Fixed Capital,

b) Working Capital or Circulating Capital.

a) Fixed Capital:

Fixed capital means the capital which is meant for meeting the permanent or long term needs of the business. It is the funds required for the acquisition of those assets that are to be used over for a long period.

To undertake the oil industries, there is the need of construction of buildings and also the machineries. It needs further godowns for storing the goods. Expenses which are incurred and which are investable in the form of investment for long duration, is called fixed and permanent capital. There are some oil mill owners who have their own place and land and in the same manner, the area plot wise are made available in the location of M.I.D.C., but this area is not in the heart of the Solapur city, but it is the adjacent area of the boundaries of the city. Some oil industries are established in the area of M.I.D.C. There is also 1 material fact in this respect that, for such oil mill owners of Solapur city the area is made available in the location of agro industries farm, wherein the plots are allocated to the oil mill owners upon reasonable and suitable conditions for the long duration on the nominal rent. It is essential to such industries, as the large open place is kept for drying the oilseeds, to dry the oilseeds is one of the important factors and it is essential to extract more oil.

For raising the fixed capital, 1 has to consider the nature, maximum operations and whole some capacity of machinery are to be taken into consideration. According to varying nature of the mills by larger or smaller some Co-operative Institutions and Nationalised Banks have taken the lead to provide the loans to meet the capital expenditure.

Considering these problems, the state government has established industrial offices and every district level in the Maharashtra state. In city Solapur, to provide the fixed capital either in 1 or other form, the loans are made available to the oil mill owners by the Nationalised Banks and Co-Operative Banks. At this place, it is essentially to be noted that, the loans are made available and supplied in the formation of capital for such purpose, for cottage and small scale industries by Khadi Gramodyog. For small scale and large scale industries 75% of the fixed capital has been supplied by the Maharashtra state Finance Corporation. In this way to the extent of Rs. 30,00,000/- amount has been supplied for the formation of fixed capital for such industries by the M.S.F.C.

In the business or industry everything can be done but the game of capital cannot be done. For the commencement of every industry, fixed capital to some extent is essential requirement. For the oil industries, there is also requirement of some other accessories except the main machineries and expeller, such as empty drums, weight balance and tankers, canes, to have all these 1 has to invest large amount in the form of fixed capital. For the oil industries, loan supplied by M.S.F.C. with the interest of 12% per annum. The repayment of the loan is to be made by the installments which have been determined and fixed taking into consideration the profit derived and also the fixed capital invested for the number of years, usually within 5 to 10 years period. The loans are to be refunded with interest as a security for the loans, the land, building and machineries have been accepted with M.S.F.C. Sometimes, 1 or more persons stand as guarantors whose credit worthiness is satisfactory.

From the above observation and also the factual position noticed at the time of my interviews, it is crystal clear that, for the

establishment of oil industries capital in the form of fixed capital and permanent capital is essential. Without such capital such mills cannot be undertaken.

b) Working Capital or Circulating Capital:

The working capital is essential as fixed for the oil industries, without such capital, these mills cannot be run. Working capital is the amount of funds necessary to cover the cost of operating the enterprises. It is that part of capital which is required for daily working of business. It is also known as circulating capital. The amount of working capital depends upon the nature of business, cash requirements, volume of sales, business cycle, production cycle, credit control, size of the firm etc. which is essential to determine the working capital.

For cottage industries, Rs. 50,000/- to Rs. 60,000/- or less capital is required. For small scale industries, working capital is required to the extent of Rs. 5,00,000/- to Rs. 10,00,000/-. For large scale industries, the working capital is required and that is to the extent of Rs.10,00,000/- to Rs. 20,00,000/-. The loan for the formation of working capital is provided by the commercial banks. For some firms, the oil mill owners have their own capital, but this is very rare and with a very few oil mill owners. The periodical loans are supplied by the banks to meet working capital. Sometimes, overdrafts system and facilities are made available by the banks to the extent of certain limits.[8]

This has greatly assisted and helped the oil mill owners to meet the problem of working capital. Mainly working capital is required to purchase the raw-materials and also day-to-day expenses of the running of oil mills. In this way, the oil mill owners have raised and formed their working capital for the oil mill industries.

The oil mill owners have tried to make the available capital required from the all possible sources, these sources are mainly through traders, by friends and relations, from money lenders, by the Commercial Banks and from the partners. Further the Co-Operative Societies and Government agencies are to provide the loan and some others. From all these sources, the oil mill owners take the required capital.

Table 6.7

Pattern of Financing for Oil-Industries

Sr. No.	Particulars	Percentage
1.	Traders	66.2
2.	Friends & Relatives	21.5
3.	Money Lenders & Shroffs	3.8
4.	Commercial Banks	1.5
5.	Partners	1.3
6.	Co-Operative Societies	1.0
7.	Government Societies	0.8
8.	Others	3.9
	Total:	**100.00**

SOURCE: 'Business Finance' by P. V. Kulkarni.[119]

The total investment for installation of 1 expeller (27" x 5") in city Solapur is calculated as follows. The calculations are based on the present value of the capital goods at the time of survey and the interviews.

Table 6.8

Total Investment for Installation of 1 Expeller (27” x 5”)

Sr. No.	Fixed Capital	Investment (In Rs.)	Percentage of Fixed Investment
A.	**Fixed Capital**		
1.	Oil Expeller Size 27” x 5”	2,00,000	16.61
2.	Boiler with pump	36,000	2.99
3.	Oil Filter Press	56,000	4.65
4.	Filter Cloth	70,000	5.81
5.	20 HP Elect. Motor	49,000	4.07
6.	Capacitor / A Meter, Walt Meter, Motor Rail	4,400	0.37
7.	Decorticator 300 Bags in 24 Hrs.	60,000	4.98
8.	Counter Shaft 2.5 with Bearing	48,000	3.99
9.	Counter Putties	13,000	1.08
10.	Pipes, Feets, Fittings	10,000	0.83
11.	Worms Set, Knief Bars	20,000	1.66
12.	Rotary Pump	8,000	0.66
13.	Boiler Chimney 10 Ft.	9,000	0.75
14.	Belts 150 Ft.	20,000	1.66
15.	Buildings	6,00,000	49.82
16.	Spanners Set Foundation	1,000	0.08
	Total:	**12,04,400**	**100.00%**
B.	**Working Capital**		
1.	Own	3,50,000	58.33
2.	Borrowed from Banks & Personal borrowings	2,50,000	41.67
	Total:	**6,00,000**	**100.00%**

SOURCE: By the ‘AMRUT ENGINEERING WORKS’ Shakti Oil Expellers Quotation Chamber size 27” x 5” Old Shakti Compound Behind Vihar Cinema, VADODARA.

Circulating capital varies according to season and the Bank Policy. The big oil mills usually purchased oilseeds in bulk during season and so they required more cash, whereas many small scale mill purchased oilseeds like groundnuts and sunflower in small quantities for weekly or even daily requirement and so they required less cash.

6.12 Labour Employment in Edible Oil Industry:

During the course of my study, it has been found that, 80% of the laborers are uneducated and illiterate in the oil mills. In the oil mills of Solapur city, there is no any permanent nature of labour, therefore, the labour organisation in the oil mills is unstable. In every oil mill, I have found that, laborers are classified in 2 groups.[10]

a) Skilled laborers, and

b) Unskilled laborers.

a) Skilled Laborers:

The workers have to do work of machinery repairs work. In a big oil mill a big boiler is essential to produce steam needed for softening the oilseed. According to government rules, a boiler attendant is to be appointed when it has more than 5 gallon capacity. Big oil mills have such boilers of more than 5 gallon capacity. So they have to appoint a boiler attendant who is a skilled worker. In small oil mills a boiler attendant is not appointed. A fitter is another skilled worker looking after the running of the machinery in the oil mill. He is essential both to the big and the small oil mills.[10]

In big oil mills an office is maintained and they employ office staff, such as Managers, Clerks and Accountants etc. In small oil mills, there is no office staff it is usually run by the oil mill owners.

b) Unskilled Laborers:

There are certain workers who are not skilled their work is of a manual labour in the nature to feed oilseeds to expeller and to remove the oil cake coming out of expeller. These workers are directly working with the running of the mill in the production. They carry to work of all sorts of nature.[10]

I found in the survey that, 1 baby expeller unit needs 3 unskilled workers and 1 fitter. If there are 2 baby expellers in a unit, then it requires only 1 fitter and 4 labourer. In the medium type of oil expeller units seek 4 unskilled workers and 1 fitter. A big mill does not require proportionately more labour according to its production. But it needs a boiler attendant and some office staff.

Considering the number of workers, it is noticed that there are permanent workers and temporary workers. In the small oil mill, there are 4 or 5 permanent workers, because, it depends upon, the nature of the work and oil mill. In a big oil mill 8 to 10 workers are permanent, while in a small mill, 5 workers are permanent. There are 3 unskilled temporary workers in small oil mills whereas in a big oil mill 4 to 5 workers are temporary.

The employment potential of 69 sample oil mills that I surveyed was found to be in all 645. The following table shows the total number of workers in 69 sample oil mills including male & female.

Table 6.9

Employment of Sample Oil Mills

Sr. No.	Size of the Mill	Male	Female	Total
1.	In Big Oil Mills	338	262	600
2.	In Small Oil Mills	27	18	45
	Total:	**355**	**270**	**645**

SOURCE: Calculated from Field Survey Primary Data.

Workers are classified into 2 groups.

i) Male workers

ii) Female workers

i) Male Workers:

The male workers are an important aspect in the production of oil mills. Usually, male workers are appointed to carry goods to the warehouse and from the warehouse and to keep the goods produced and to carry them for storing such as oil cake. In the oil mills at present there are 355 male workers out of the total 645 workers. 40 to 50 male and female workers are engaged in 20 sample tel-ghani units.

ii) Female workers:

If there are also a sufficient supply of female workers, the production is definite and in a large quantities. In India due to some crude culture and religious attitude, backwardness and a low standard of living and life, the female workers ordinarily do not found in the employment. But at present it is not a wholesome truth.

The total number of female workers is 270 out of 645 workers. Female workers are mainly employed for the feeding the oilseeds to the expellers and to remove the oil cakes, however, female workers do not do the heavy and bulky work. They are removing the empty bags and sweeping the oil mill and cleaning the same. Usually female workers are not educated and trained. The female workers are engaged recently from the last 4, 5 years in oil mills. It is continuously noticed that, female workers are also capable of doing the work of all kinds.

*** Working Hours of Labourers:**

During the survey, it is noticed that some oil mills are working for 2 shifts. Each shift is of 8 hours. Workers working in 2 shifts received wages accordingly. In India, there are many labour laws enacted, with some new changes sited to changing conditions.

In 1948 many changes in respect of the employed of the workers and also their working hours are restricted to 48 hours in a week. There is no any union of the workers of the oil mills. Whenever they require they come to the owner of the mill to get the work. Most of the oil mills are private mills owned by the oil mill owners. There are no any definite rules for the appointment. The experience of the workers is the only criteria for the appointment. The employment is given either on daily basis or monthly basis. In big oil mills, the works are determined normally 8 hours for a shift, including the interval of 45 minutes as a rest. When the electricity supply is cut off, even in the case, the workers have to work on the machinery and do some other works. Workers are also bringing the raw materials like oilseeds from godown to oil mill and some are doing the work of clearing the machineries and spare parts. They examine the bolts, after the expiry of the workers' hour of the day. The electricity if starts after working hours of the day, then in that case, the workers are not doing the work, because their duty hours are over. Usually the working hours are fixed as 8 hours in a day that is 48 hours in a week.[12]

*** Wages of Labourers:**

While considering the wages of the workers of the oil mills, it is classified on the basis of skilled and unskilled. The wages of skilled laborers are at Rs. 3,000/- per month and whereas it is at Rs.2,000/- per month in case of unskilled workers. In the small oil mills, the

workers are mostly on daily basis. In case of big oil mills, the daily workers are in a large number. A fitter who is skilled worker, is found to be receiving a monthly wages from Rs. 3,000/- to Rs.3,500/-. He is illiterate but he is an experienced person. He has a good deal of knowledge of the machinery. A boiler attendant receives wages from Rs. 2000 to Rs. 2,500/- monthly.

Unskilled laborers are always employed on daily wages. Male laborers receive Rs. 60/- to Rs. 70/- for each shift in a day, whereas in case of female workers they get their wages at the rate of Rs. 50/- to Rs. 60/- for each shift in a day. There are number of ghanis producing oil in city Solapur. Two ghanis as a unit for that 1 worker is employed who is usually working for 8 hours in a day. One unit ghani is working for 1 hour and produces 1 pair. For that he gets Rs. 5/-. So for 8 pairs, he gets Rs. 40/-. There are also female laborers working for grinding and cleaning the oilseeds. They work for 8 hours, for that, they get Rs. 50/- to Rs. 65/- per day. Sometimes, it is on the basis of the oilseeds bags. Labourers working in 1 shift are not usually allowed to work for the second shift, but normally in the season, there are 2 shifts in a day, then they are working for both the shift and they get their wages double.

Regularly, there is 1 weekly holiday. On that day also the unskilled laborers are coming to the place of employment and doing some work of cleaning and sweeping the oil mill and machinery. The weekly holiday is on Wednesday. It is a day, where there is no supply of electricity and also it is a Bazaar day of Solapur city. The wages are paid weekly on Wednesday.

6.13 Conclusion:

The business of edible oil production in Solapur city is increasing slowly and steadily. The number of oil mills increased from 66 to 98 during 1990-91 to 2007-08 respectively. It shows that the edible oil production business is developing in Solapur city. But at the same time the traditional tel-ghani production units are decreasing due to difficulties such as competition with big oil mill owners, difficulties in the supply of raw material, competition with solvent plants and the problem of finance and skilled laborers.

Though the total production of edible oil by oil mill owners is increasing but it is very slow. Therefore, there is imbalance in the demand and supply of edible oil related to the Solapur city.

The most of the oil mill owners are not using the modern technique, technology and machinery to extract the oilseeds. Therefore, they have to face the problem of increasing cost of production. Out of 69 sample oil mills 9 oil mills are small or baby oil mills and 60 are big size oil mills. Both 2 types of oil mill owners are facing the problem of skilled workers, and the problem of continuous supply of raw material.

The investment made by the oil mill owners may be fixed or working capital is very low. Therefore, it affects on the production of edible oil and oil cakes. The provision of finance from the different financial institutions such as KVIC, Co-Operative Banks, M.S.F.C., Nationalised Banks is not sufficient and satisfactory. Most of the oil mills are located in agro-area which is specially reserved by the Agricultural Produce Market Committee and therefore oil mill owners

cannot get the infrastructural facilities provided by the Government of Maharashtra through Maharashtra Industrial Development Corporation.

The oil mills in Solapur city are crushing only the groundnut, sunflower, and safflower oilseeds rather than the other oilseeds such as linseeds, sesame, cotton seed, mustard, and soybean due to non-availability of the above said oilseeds in the Market of Solapur city

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CHAPTER - VII

BUSINESS OPERATIONS OF SAMPLE OIL MILLS

This chapter consists the actual operations of sample oil mills related to processing, production, cost of production, prices of oil seeds, profit marging etc.

In the first phase the method of extraction of edible oil is explained and i the second phase the actual operations are analysed through the various primary data of 1990-91 to 2007-08.

7.1 Production Method and Process:

A) Ghani Method:

Unlike production technologies in oilseeds, the processing is very important, to obtain maximum oil and monetary benefits. Various steps are involved in processing of oilseeds.

In early days, it was with the help of manpower and animal power, the oil was extracted in the large quantity by the traditional ghanis and bullock driven ghanis. In the modern days, at present, the machineries have played an important role in the production of oil. The machines are to be operated by man. The proper knowledge of operations of the machinery is essentially required to the operator. However, there are different types of production of oilseeds. The use of machinery is not the only factor for improvement to extract more and more oil but at the same time, there are also the primary preparation process is effected on the oilseeds and there are many steps in such process, which are briefly discussed in following lines:[4 &13]

a) Criteria for Purchase of seed:

The criteria to be used and applied to purchase better seeds for extract of oil is essential thought. Generally, the purchase is

made on 2 criteria, locally known as Jawari and Ghatti in Maharashtra. The Jawari types are having comparatively thin soft, bolt and compact. On other hand Ghatti types are thick hulled. The market of oilseed is seasonal but the storing of oilseeds has assisted to keep continuous supply to enable to oil mill owners to operate the oil mills for all in season or out season.

b) Cleaning and Grading:

Before decortication, the seed is sieved and made free of dust, stones, foreign materials etc. The empty seeds and foreign materials, if any, are separated with the help of power winnower. Thus, clean seed is ready for decortication.

c) Decortication:

The oilseed is decorticated before processing in a stone grinder known as decorticator (chakki). The chakki is operated on power and about 160 kg. of seed is decorticated per hour.

d) Sieving and Winnowing:

The decorticated material is sieved with the help of electric screen set comprising of 4 types of sieves having 3, 6, 8 and 12 holes per 2.5 cm. square respectively. During this process, the sieves are moved with the help of power. Some quantity of hull still remains in the broken and unbroken oilseeds which are separated by means of winnower and thus they are made free hulls. About 48 to 50 kg. of oilseeds (Kernels) are obtained from 1 quintal of a good quality of seeds.

e) Watering:

The sufficient quantity of water is added in cleaned oilseeds, because of the water, it becomes easy to break them with some amount of pressure. Sometimes, the wet cleaned seeds are kept overnight for softening for about 10 to 12 hours.

f) Crushing and Extraction of Oil:

Under the ghani system, when the process is to be carried out for the extraction of oil, some handful of water is sprinkled on the upper part of facher and pestle. When the seeds are poured into the facher upto 1 third quantity remaining 2-third quantity spread over 1 try of ghani.[13]

g) Pulverisation:

In this stage and process the seeds are crushed and powdered to some extent.

(i) Some amount of water is sprinkled to act as cementing material and also to provide grip to the pestle. Under normal condition, the pulverisation will not take more than 1/3rd of the total time required for the entire process of oil extraction.

(ii) Effect of Water:

Correct watering is the most important of all the factors and can be mastered only after long experience. The quantity of water required depends largely on the variety of seed and to extent of which they are dried. The water required for the entire process is about 6% of the weight of seeds taken for pressing. It plays most important role in cake formation. This helps to remove the oil on the surface of the cake and also make the cake smooth and shining. Excess of water does not permit formation of hard and smooth cake.

(iii) Cooking:

Proper cooking of the meal is essential for coagulation of albuminoides and for flow of clear oil. Cooking is accomplished in the ghani itself by the action of water and heat. If cooking is incomplete some of the cells remain intact retaining the oil within themselves.

(iv) Role of Heat:

Heat is generated in the ghani by friction. To supplement this some artisans heat the meal with a burning torch. Some others remove the oil in the middle of the process, heat it and then pour in the ghani.

(v) Pressure:

Pressure plays a simple role of physically separating the oil from the meal. After the stage of cooking is over and the cake begins to form, the oil droplets are expelled due to displacement of water. At this stage, pressure brings about cohesion among the different drops of oil. Thus, its role in the final stage is highly significant. If during this stage, there is fall in the pressure an amount of oil is likely to be held back in the cake, for extraction of which the charge may have to be prolonged for some more time.

(vi) Thickness of Cake:

The proper thickness of cake is at about half inch at top and about an inch at the bottom. This cake retains more oil and takes longer time to lose moisture and hence becomes rancid soon.

(vii) Filtration and Keeping Quality of Oil:

During the process, water is added directly. The water acts as clarifying agent. In processing method itself must of the sediments are allowed to settle gradually and after 24 hours the oil is ready for sale. But even then the trace of moisture remains in the oil and this is a reason that the keeping quality of ghani oil is poor.

Thus the process of extraction of oil by old and simple ghani method has been discussed above but there are some

methods of oil extraction i.e. Expelling Method, Solvent Extraction Method.[20]

B) Expelling Method:

The oil produced by ghanis is preferred for edible purposes. But the yield is somewhat lower. The different types of machineries and expellers are used in the oil production, to obtain maximum oil. The machinery employed is expeller. An expeller consists of a cylindrical case (barrel) in which a helical worm shaft rotates. The flaked and cooked material adjusted to moisture content at about 5% is fed at 1 end of the expeller and is subjected to increasing pressure by the rotating worm shaft, which expels the cake through a constricted opening at the other end of the expeller. The modern expeller brings down the oil content in the pressed cake to about 4-8%. After that, suspended and colloidally dissolved matters are separated by first gravity settling and then by filtration through filter press. The oil is then packed in rectangular tin or barrel containers.[8]

a) Machinery and Equipments:

In the modern method of expelling, machinery and equipments which are used for the extraction of oil are as follows:

1) Baby expeller, medium size expeller and large size expeller.
2) Setting tank with conical bottom.
3) Cooking pan to worm the oilseeds by steam which is provided by boiler.
4) Filter press with pump and accessories.

The following are the machineries and equipments which are used in the expelling method.

(i) Decorticator:

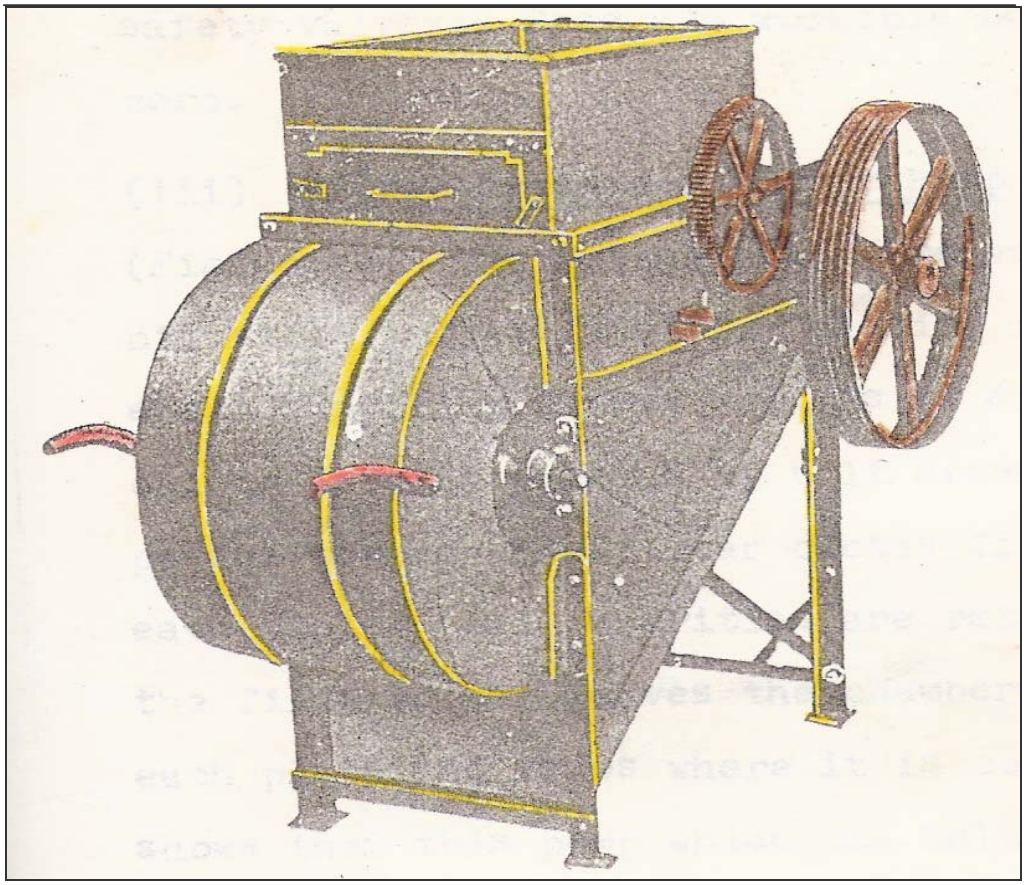
The (Figure 7.1) is a decorticator consists of wholly M.S. Plate fitted with angle iron. The fan is so arranged that can also run by the hands. Two men are required. It is run by electric power of 5 HP and it is in different models.

Model Number 1	:	1000 Bags in 24 hours
Model Number 2	:	300 Bags in 24 hours
Model Number 3	:	120 Bags in 24 hours

The seeds are decorticated before pressing.

Figure 7.1

Decorticator

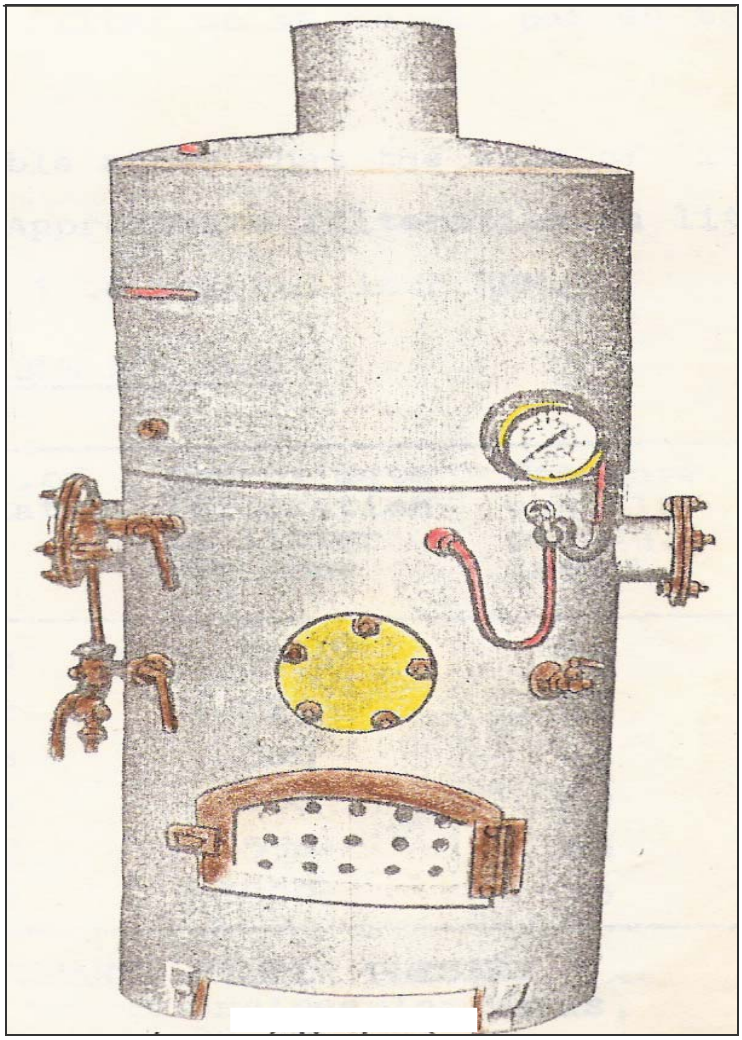


(ii) Boiler:

The (Figure 7.2) boiler has quick steaming capacities and simple construction. They are easy to operate with economy of floor space, low consumption, low cost. The most suitable fire is steam coal, wooden chips can also be used in the boiler. Boiler should not burn without water, feeding pump is in working order. The blow off cock is completely closed, the safety valve is free, workable and pressure gauge is at zero.

Figure 7.2

Boiler



(iii) Filter Press and Filter Pump:

The (Figure 7.3) and (Figure 7.4) the filter press are very extensively used in oil mills. It is used for cleaning oil drawn from the different expelling plants. It is of different capacities. The oil or liquids pressed by belt driven plunger pump and passes through the filter cloths fitted to either side of each plate. All impurities are retained by the filter cloth, the filtered oil leaves the chamber through cocks fitted to each plate and flows where it is collected. The Figure 7.4 shows that this pump which has belt driven plunger the oil is pressed by pump to the filter so as to oil passes to the filter cloth.

The following table shows that the size of filter press, number of plates, approximates filtration in litter per hours, pressure up to 1 bs. per sq. inch RPM.

Figure 7.3

Filter Press

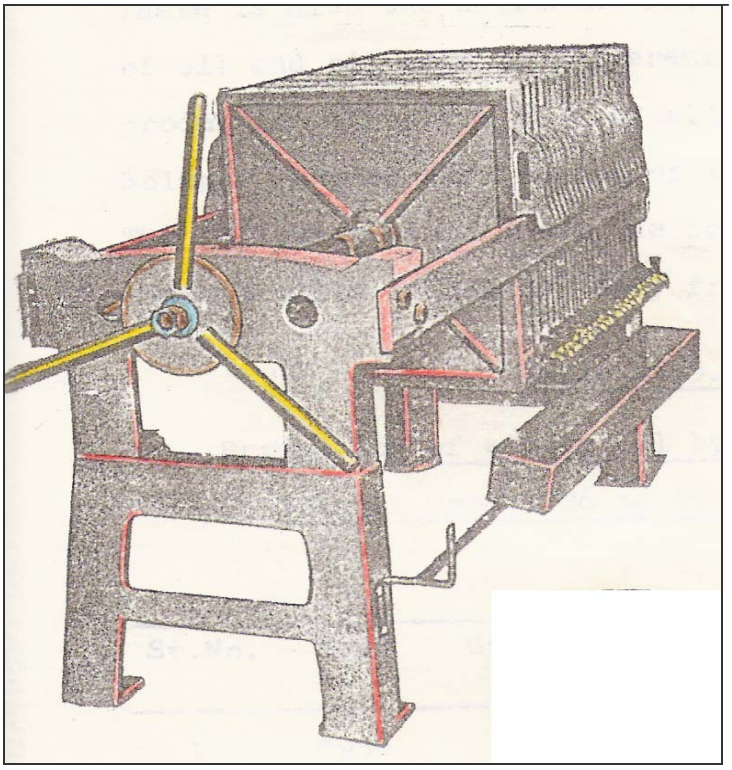


Figure 7.4

Filter Pump

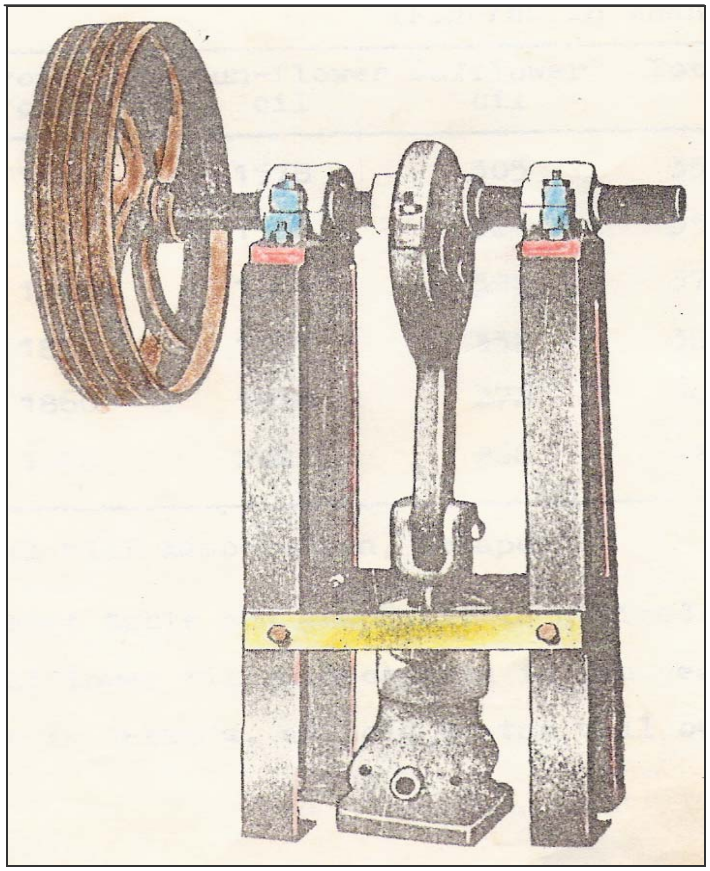


Table 7.1

Types of Filter Press

Sr. No.	Size of the Filter Plates	Number of Plates	Approxi-mate Filtration in Litres Per Hour	Pressure upto 1 bs. per sq. inch.	RPM
1.	9” x 9”	9	16	10	15
2.	12” x 12”	12	125	45	30
3.	17” x 17”	18	300	45	45
4.	23” x 23”	24	600	50	65
5.	30” x 30”	30	1550	65	78
6.	36” x 36”	36	3800	75	80

SOURCE: Prospectus of “SHAKTI FILTER PRESSES”, Manufactured by ‘Amrut Engineering Works, Pratapnagar, VADODARA – 390 004.

7.2 Market of Edible Oil and Oilcakes:

Marketing refers to the economic process by which goods and services are exchanged and their values determined in terms of money prices. It is the process through which goods produced are transmitted to the final consumer. The various activities involved in the process include transportation, storage, financing, risk bearing, standardisation and like.

It has been found in survey of the study, that the edible oil produced by the oil mills in city Solapur is almost sold in the market of Solapur city and also in the neighboring areas. Out of the total production of oil and oil-cake, 60% of such production is sold in the city of Solapur and surrounding area of different Talukas. The remaining 40% of such production is being sent to the outside place for sale. The oil mill owners sell the oil and oil-cake to the traders of such places, where there is higher price for such products.

Very rarely the cotton seed oil and its cakes are produced in city Solapur. The oil and cakes to the extent of 5% are sold in the local market and the remaining is sent to Punjab, Bengal and U.P. states. The cakes are sold in the market of Mumbai, Gujrat and Delhi. There are many whole-sellers and retailers dealing in the oil business in Solapur. They purchase the edible oil and cakes from the local market. Wholesellers purchase directly from the oil mill owners and retailers purchase from the whole-sellers.

A) Market System:

All the oil mill owners sell the oil and oilcakes in large quantity either to the whole-seller or to the traders outside the city. Some oil mill owners have established their own selling centers to sell the oil and the oilcakes produced from their mills. These selling centres are in the vicinity of thickly populated area. There are only 2 or 3 big market places and there are many shops of all kinds. In such a

locality the oil centres are opened. The big oil mill owners have their dealing in large volume. They sell the oil by Tankers and Tankers and also the oilcakes as a truck load. However, it is seen that the oil and oil cakes so produced by the oil mills are sold immediately either in the local market or into the state market.

The following are the marketing system and the nature of dealing of sale:

a) Wholesale:

70% of the total production of oil is sold under the whole-sale system. There are many whole-sellers dealing in oil. Such sales are effected by the agent, broker or commission agents. The commission of Rs. 20/- is charged for each barrel. Through whole-sellers, the oil is sold to the retailers. Sometimes the consumers purchase directly from the oil mill owners if the purchase is in a large quantity. On many festival occasions including the marriage ceremony the consumer directly purchase the oil from the mill owners.

b) Retail Sale:

Some retail shop-keepers purchase oil directly from the oil mill owners. 1/3rd of the total production of oil is sold to the retailers by the oil mill owners. There is an increasing tendency of the retailers and also the consumers to purchase oil directly from the oil mill owners because they consider by such sale they get pure and fresh oil daily.

c) Sale through Agent or Commission Agent:

10% to 15% of the total production of the oil is sold through agent or commission agents. They get commission. It is clearly noticed that 60% oil is sold to shopkeepers, 30% is sold to the consumers and retailers and 5% of the oil product is sold through the Commission Agents. Commission Agent (Adatya) is an important

person who knows the market condition well. He knows the sellers and buyers both. If the oil is stored and not sold immediately, then in that case the sale through commission agent is essential.

B) Kinds of Market:

The every product must find the place in the market. If the sales are not smart, the product becomes useless. No doubt, there is also some gap of time between the production and marketing of such product. During this time, the products are stored, the conditions of the markets whether favourable or not, are properly judged. The sale of the product into favourable market conditions is an important policy of every industry.[16]

The following are the different kinds of markets:

a) Local Market:

50% to 60% of the oil is usually sold in the local market. There is an increasing demand for the oil day by day in the local market. The sale into the local market is most useful because the selling expenses are less and moreover such sales are mostly as cash sales. Therefore, sale in the local market is favourable to the oil mill owners because they collect the sale proceeds immediately. This has helped much to the medium size oil mill owners. The oil mill owners who have little finance, they prefer to sale oil into the local market only.

b) The Sale into all over District:

Some big oil mill owners sell their oil into all over the district places, such sale is to the extent of 20% of their total product. In city Solapur there are certain Talukas where the marketing is quite developed. Under this system, the oil mill owners get advertised their business and naturally they find the better, large market and the oil mill owners get the good reputation for their oil industry.

c) Sale Outside the District:

20% to 25% of the total product of the oil is sold outside the district places. The big mills send most of their oil to Mumbai, Delhi, Nagpur, Kolkata and Pune. Small oil mill owners mostly sell their oil in local market, though a few of them send a part of their supplies to Mumbai. The sale proceeds are paid within 15 days from the date of sale. By selling outside the district, the oil mill owners get advertised their industries automatically.

d) Interstate Market:

10% of the oil is sold into market of different states. Sometimes, oil is sold to the traders of the Bijapur market in Karnataka state. After 15 to 20 days, the sale proceeds are paid. By selling oil into the market of other states, the oil mill owners get good reputation for their oil business.

e) International Market:

Oil industry is mostly small scale industry. Therefore, the oil mill owners of such industry do not find the international market for their products. The small scale industries have certain limitations. They produce in a small quantity, their financial position is also not sound, therefore, such owners do not have any interest in the international market. The very big oil mill owners, sometimes, sell the oil into the international market, but in city Solapur, there is no any such big oil mill interested in the international market.

C) Market Area and Godown Storage:

The market area for sell is Solapur city. There is no separate business area purely meant for sale of oil. Godowns or store-houses for storage of oil and oil-seeds mostly are in the vicinity of the oil mills. In the Solapur city, there are small mills and their owners are

not in a position to invest money for godowns. Unless the small oil mill owners are given financial sufficient aid, it is not possible for them to have their oil mills and godowns constructed in a separate place i.e. in outside city or in the M.I.D.C. Area. This is painful on the part of the small and medium type oil mill owners. This agony can be solved only by the government by paying loans to such oil mill owners at the low rate of interest for construction of godowns.

During the survey, it is found that, the storing facility with the oil mill owners is limited. There is a need of the number of godowns for storing the oil-seeds for oil mill owners.

In Solapur city, there is a department of Maharashtra state Warehousing Corporation (M.S.W.C.). Its head office is at Poona.

Main features of M.S.W.C.

a) Number of Godowns - 5

Storing capacity of each Godown - 1800 M.T.

Total storing capacity - 9000 M.T.

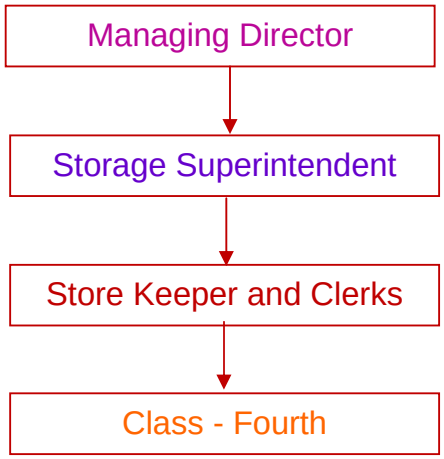
b) Rent -

Rs. 3.10 per bag per month for food grains.

Rs. 3.20 to Rs. 3.35, per bag per month for oil-seeds.

Rs. 3.45 per bag per month for pulses.

c) Management



d) Insurance:

For storing the seeds, M.S.W.C. charges 1.30 Rs. as a 'Insurance charge' for per month per M.T.

e) Advertisement:

The M.S.W.C. spends 10 Paise for advertisement. This helps to farmers, businessmen etc.

f) Basic Objectives:

i) The storing facility is most scientific.

ii) It supports to determine the stable price policy.

iii) It helps to control the prices.

iv) It assisted to the farmers, to enable them to make the sale of their products when prices are increasing. Thus, the farmers get the proper and reasonable price for their product.

v) It has also the sense of rendering the services to the public at large because that helps to stabilise the price and consumer's satisfaction.[11]

7.3 A) Purchase of Oilseeds by Sample Oil Mills in City of Solapur for 1990-91 to 2007-08:

For this research we have selected 69 sample oil mills. It is necessary to show the purchase of oilseeds by the sample oil mills during 1990-91 to 2007-08 to know the working of edible oil industries in Solapur city.

The following table 7.2 shows the purchase of groundnut, safflower and sunflower oilseeds by the owners of the sample oil mills from 1990-91 to 2007-08. It also shows the purchase of total oilseeds by the sample oil mills.

Table 7.2

Purchase of Edible Oilseeds of Sample Oil Mills in City of Solapur from 1990-91 to 2007-08

(Figures in Tonnes)

Sr. No.	Year	Groundnut Oilseeds	Sunflower Oilseeds	Safflower Oilseeds	Total Production of Oilseeds in Tonne	Percen-tage
1	**2**	**3**	**4**	**5**	**6**	**7**
1.	1990-91	3420	2055	2024	7499	--
2.	1991-92	3748	2248	2276	8272	10.30%
3.	1992-93	3845	2579	2120	8544	3.29%
4.	1993-94	4010	2638	2272	8920	4.40%
5.	1994-95	4070	2648	2292	9010	1.00%
6.	1995-96	4245	2890	--	7135	-20.81%
7.	1996-97	4368	2902	--	7270	1.89%
8.	1997-98	4530	3083	--	7613	4.72%
9.	1998-99	4731	3314	--	8045	5.67%
10.	1999-00	4780	3369	--	8149	1.29%
11.	2000-01	5995	3979	--	9974	22.40%
12.	2001-02	6625	3983	--	10608	6.36%
13.	2002-03	7000	4200	--	11200	5.58%
14.	2003-04	7380	4757	--	12137	8.37%
15.	2004-05	7770	5179	--	12949	6.69%
16.	2005-06	7980	5445	--	13425	3.68%
17.	2006-07	8143	5526	--	13669	1.82%
18.	2007-08	8330	5676	--	14006	2.47%
	Total:	**100970**	**66471**	**10984**	**178425**	

SOURCE: Calculated from Field Survey Primary Data.

The table 7.2 shows the purchase of oilseeds in Tonnes.

We get the following conclusions in this regards.

1. In the year 1990-91 there were total 66 oil mills in Solapur city. The total purchase of oilseeds was 7499 tonnes in the year 1990-91. The purchase increased to 8272 tonnes i.e. by 10.30% in the year 1991-92 because of an increase in number of oil mills i.e. 73 oil mills. From the year 1992-93 to 1999-2000 there was no drastic change in the number of oil mills. Therefore the yearly percentage of purchase of oilseeds ranges from 1 to 5.67%. From 2000-01 the number of oil mills increased from 78 to 98 in the year 2007-08. Due to this the purchase of oilseeds also increased from 9974 tonnes during the year 2000-2001 to 14006 tonnes during the year 2007-08.

2. After 1990-91 particularly after 2000-01 due to globalisation the edible oil industry in India come forth and they had an opportunity to develop their oil business. Therefore from 2000-01 to 2007-08 the number of oil mills increased very fastly. At present i.e. 2007-08 there are 98 oil mills, 69 sample oil mills show an increasing trend of purchase of oilseeds which are shown in the above table.

3. The above table shows from 1995-96 to 2007-08 the purchase of safflower oilseed is nil. From 1995-96 the government restricted to crush safflower oilseed for the protection of rural cottage, edible oil tel-ghanis. Therefore from 1995-96 oil mills in Solapur city are purchasing only the groundnut and sunflower oilseeds for the extraction of oil.[12]

7.3 B) Purchase of oilseeds in Rupees by Sample Oil Mills from 1990-91 to 2007-08:

The following table 7.3 shows the purchase of oil seeds by 69 sample oil mills during 1990-91 to 2007-08. It is calculated by the yearly prices of different types of oilseeds and through the purchase of oilseeds in tonnes in domestic and state market.

Table 7.3

Purchase of Edible Oilseeds in Rupees by Sample Oil Mills in City Solapur from 1990-91 to 2007-08

(Figures in Tonnes)

Sr. No.	Year	ground-nut Oilseeds in Tonnes	Price in Rs. for 1 Tonne	Total Purchase of Ground-nut Oilseeds in Rs. in Crore	Sun-flower Oilseeds in Tonnes	Price in Rs. for 1 Tonne	Total Purchase of Sun-flower Oilseeds in Rs. in Crore	Safflower Oilseeds in Tonnes	Price in Rs. for 1 Tonne	Total Purchase of Safflower Oilseeds in Rs. in Crore	Total Purchase of Oilseeds Rs. in Crore	% Increase in Purchase of Oilseeds
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	1990-91	3420	11550	3.95	2055	13000	2.67	2024	11000	2.23	8.85	--
2.	1991-92	3748	11250	4.22	2248	14120	3.17	2276	12000	2.73	10.12	14.35%
3.	1992-93	3845	14600	5.61	2579	15800	4.07	2120	14150	3.00	12.68	25.30%
4.	1993-94	4010	16700	6.70	2638	14900	3.93	2272	12600	2.86	13.49	6.39%
5.	1994-95	4070	15920	6.48	2648	16980	4.50	2292	13200	3.03	14.01	3.85%
6.	1995-96	4245	18890	8.02	2890	15770	4.56	--	11450	--	12.58	10.20%
7.	1996-97	4368	21730	9.49	2902	18200	5.28	--	12890	--	14.77	17.41%
8.	1997-98	4530	25050	11.35	3083	20260	6.25	--	13550	--	17.60	19.16%
9.	1998-99	4731	24800	11.73	3314	22890	7.59	--	12600	--	19.32	9.78%
10.	1999-00	4780	26140	12.50	3369	24420	8.23	--	13200	--	20.73	7.30%
11.	2000-01	5995	27000	16.19	3979	25770	10.25	--	14090	--	26.44	27.54%
12.	2001-02	6625	29900	19.81	3983	27600	10.99	--	14580	--	30.80	16.49%
13.	2002-03	7000	25630	17.94	4200	22670	9.52	--	13040	--	27.46	-10.84%
14.	2003-04	7380	25540	18.85	4757	24670	11.74	--	13940	--	30.59	11.40%
15.	2004-05	7770	35380	27.49	5179	32250	16.70	--	17880	--	44.19	44.46%
16.	2005-06	7980	39000	31.12	5445	38000	20.69	--	25000	--	51.81	17.24%
17.	2006-07	8143	41000	73.39	5526	36000	19.89	--	22000	--	53.28	2.84%
18.	2007-08	8330	41000	34.15	5676	40000	22.70	--	26000	--	56.85	6.70%
	Total:	**100970**		**278.99**	**66471**		**172.73**	**10984**		**13.85**	**465.57**	

SOURCE: Calculated from Field Survey Primary Data.

We get the following conclusions from the above table 7.3

1. The column no. 4, 7 and 10 reflect the prices of groundnut, sunflower, and safflower oilseeds for 1 tonne respectively. From 1990-91 to 2007-08 the prices of oilseeds of groundnut, sunflower and safflower are increasing. This table also shows an increase in purchase of oilseeds by sample 69 sample oil mills from 1990-91 to 2007-08. Column no. 12 shows the total purchase of oilseeds in Rs. in Crores by sample oil mills during 1990-91 to 2007-08.

2. The above table also shows an increasing trend of purchase of oilseeds which is measured in the form of crores rupees. In the year 1990-91 the total purchase of oilseeds was Rs. 8.85 crores reached upto Rs. 56.85 crores in the year 2007-08. It shows the purchase of oilseeds by sample oil mills increased by 642.37% within 18 years. The purchase of oilseeds increased fastly particularly from 2000-01 due to an increase in number of oil mills in Solapur city and due to the effect of global market.

3. The above table shows the purchase of groundnut oilseeds is higher than the purchase of sunflower oilseeds by the sample oil mills. Therefore we can say most of the oil mills from 69 sample oil mills are extracting the groundnut oilseeds rather than the sunflower oilseeds. The total purchase of groundnut oilseeds increased from Rs.3.95 crores to Rs. 34.15 crores from 1990-91 to 2007-08 respectively. The purchase of sunflower oilseeds increased from Rs. 2.67 crores to Rs.22.70 crores during 1990-91 to 2007-08 respectively. This shows maximum number of sample oil mills is crushing groundnut oilseeds.

4. The column no. 13 shows percentage increase in purchase of oilseeds by sample oil mills. It was 14.35% in 1991-92 increased upto 25.30% in the year 1992-93. From the year 2000-01 the percentage of purchase of oilseeds is increasing. It shows an increasing demand for edible oil consumption.

7.3 C) Cost of Production and the Total Purchase Value of Edible Oilseeds by the Sample Oil Mills in City Solapur from 1990-91 to 2007-08:

For this research work the cost of production of edible oil is calculated and presented the total purchase value of oilseeds by sample oil mills during 1990-91 to 2007-08. It is shown in the following table 7.4.

Table 7.4
Cost of Production and Total Purchase Value of Edible Oilseeds by Sample Oil Mills in City of Solapur from 1990-91 to 2007-08

Sr. No.	Year	Total Production of Oilseeds in Tonnes	Cost of Production of Oilseeds in Rs. for 1 Tonne	Cost of Production of Oilseeds in Rs. in Crores	Purchase of Oilseeds in Rs. in Crores	Total Purchase Value in Rs. in Crore
1	2	3	4	5	6	7
1.	1990-91	7499	250	0.19	8.85	9.04
2.	1991-92	8272	250	0.21	10.12	10.33
3.	1992-93	8544	250	0.21	12.68	12.89
4.	1993-94	8920	250	0.22	13.49	13.71
5.	1994-95	9010	250	0.23	14.06	14.24
6.	1995-96	7135	250	0.18	12.58	12.76
7.	1996-97	7270	250	0.18	14.77	14.95
8.	1997-98	7613	500	0.38	17.60	17.98
9.	1998-99	8045	500	0.40	19.32	19.72
10.	1999-00	8149	500	0.41	20.73	21.14
11.	2000-01	9974	500	0.50	26.44	26.94
12.	2001-02	10608	500	0.53	30.80	31.33
13.	2002-03	11200	500	0.56	27.46	28.02
14.	2003-04	12137	500	0.61	30.59	31.20
15.	2004-05	12949	1000	1.29	44.19	45.48
16.	2005-06	13425	1000	1.34	51.81	53.15
17.	2006-07	13669	1000	1.37	53.28	54.65
18.	2007-08	14006	1000	1.40	56.85	58.25
	Total:	**178425**		**10.21**	**46.55**	**475.78**

SOURCE: Calculated from Field Survey Primary Data.

We get the following conclusions from the above table.

1. In the field survey it is found that the cost of production of edible oil is increasing from 1990-91 to 2007-08. The cost of production of 100 kg. oilseed was Rs. 25 i.e. 250/- for 1 tonne in 1990-91 and remained constant upto 1996-97. The cost of production increased from Rs. 250 to Rs. 500 for the crushing of 1 tonne oilseeds. The cost of production remained as it is i.e. Rs. 500 from 1997-98 to 2003-04. It increased upto Rs. 1000 from 2004-05. At present the cost of production of 100 kg. oilseeds is Rs. 1000/-.

2. The table 7.3 shows the purchase value of oilseeds of 69 sample oil mills from 1990-91 to 2007-08. By adding the yearly cost of production with the net purchase value we get the total purchase value of oilseeds by the sample oil mills during 1990-91 to 2007-08. In the year 1990-91 the total purchase value of oilseeds by sample oil mills was Rs. 9.04 crores. It increased upto Rs. 58.25 crores in the year 2007-08. The column no. 7 also shows an increasing trend of purchase value of oilseeds due to an increasing purchase of oilseeds and an increasing cost of production.

3. The cost of production of edible oilseeds increased four times during the 18 years that is from Rs. 250 per tonne to Rs. 1000 per tonne. Therefore the total cost of production for the total purchased oilseeds increased from Rs. 0.19 crores to Rs.1.40 crores by the sample oil mills in the period from 1990-91 to 2007-08.

7.4 Sale Price and Profit of Sample Oil Mills in City Solapur:

For this research work the net sale price of output of sample mills is calculated by the field work. It is found that the total

production of oil and oil cake is totally sold by the sample oil mills within a very short period of production. The profit which goes in the hands of the oil mill owners is calculated by the net sales price and the net purchase price. It is shown in the following table 7.5

Table 7.5

Sale Price and Profit of Sample Oil Mills in city of Solapur from 1990-91 to 2007-08

Sr. No.	Year	Net Purchase Value in Rs. in Crore	Net Sale Value in Rs. in crore	Gross Profit in Rs. in Crore	Percentage of Gross Profit to Net Sales
1	2	3	4	5	6
1.	1990-91	9.04	9.88	0.84	8.50%
2.	1991-92	10.33	11.35	1.02	8.99%
3.	1992-93	12.89	14.26	1.37	9.61%
4.	1993-94	13.71	15.23	1.52	9.98%
5.	1994-95	14.24	15.79	1.55	9.82%
6.	1995-96	12.76	13.53	1.27	9.38%
7.	1996-97	14.95	16.65	1.70	10.21%
8.	1997-98	17.98	20.16	2.18	10.81%
9.	1998-99	19.72	20.51	2.09	10.19%
10.	1999-00	21.14	23.19	2.05	8.84%
11.	2000-01	26.94	29.52	2.58	8.74%
12.	2001-02	31.33	34.58	3.25	9.40%
13.	2002-03	28.02	30.74	2.72	8.85%
14.	2003-04	31.20	32.45	3.25	10.01%
15.	2004-05	45.48	49.44	3.96	8.01%
16.	2005-06	53.15	57.34	4.19	7.31%
17.	2006-07	54.65	59.59	4.94	8.29%
18.	2007-08	58.25	64.00	5.75	8.98%
	Total:	**475.78**	**518.21**	**42.43**	

SOURCE: Calculated from Field Survey Primary Data.

We get the following conclusions from the above table..

1. The column no. 4 shows the net sale value of output of sample oil mills from 1990-91 to 2007-08. It was Rs. 9.88 crores in the year 1990-91, increased upto Rs. 64.00 crores in the year 2007-08. It also shows an increasing trend of sale value due to an increase in the production and an increase in prices of edible oil and oilcakes.

2. The column no. 5 shows the gross profit of 69 sample oil mills of Solapur city from 1990-91 to 2007-08. It also shows an increase trend of gross profit due to an increase in number of oil mills and an increase in the production of oilseeds and also increasing prices of edible oil. It was 0.84 crores in 1990-91 increased upto Rs. 5.75 crores in the year 2007-08. It also shows the opportunity of development of edible oil industry in Solapur city.

3. The above table shows an increasing gross profit of sample oil mills within 18 years the gross profit was 8.50% in the year 1990-91 increased upto 10.81% in the year 1997-98 and further from the year 2004-05 the percentage of gross profit decreased upto 8.98% in the year 2007-08. Though the percentage of gross profit is decreasing, the oil mill owners are getting the total good profit due to an increase in the prices of oilseeds and oils.

7.5 Sale of Edible Oil and Oilcakes:

The located oil mills in Solapur city supply their products such as oil and oilcakes in domestic and state market. As groundnut loses about 70% of its weight in the production of oil, it is cheaper to transport oil rather than groundnut to the outside markets. The bigger oil mills send most of their oil to Mumbai, Delhi, Nagpur, Kolkata and Pune. Small oil mill owners mostly sell their oil in the local market, though a few of them send a part of their supplies to Mumbai. This oil is used in these big cities as a raw material for vegetable ghee industry, refined oil industry, soap industry and a small part of it for direct consumption.

For local consumption people mostly use safflower oil as plenty of karadi seed is cultivated in the surrounding areas. Karadi seed is not crushed in the mills due to certain technical difficulties. So karadi oil is produced and supplied by the local ghanis.[20]

The oil produced by the oil mills is mostly of groundnut and sunflower. The sale of such oil is partly done in the outside market. Sometimes oil is sold at the place of industry also.

Oilcakes:

Oil cake is a joint product of oil mill industry. It is used for 2 purposes:

(a) Feeding the livestock,

(b) As a manure.

For both these purposes, the mills sell their oil cakes in Solapur and Pune districts, though a small part of it goes to Mumbai to be de-oiled. The oil cake contains 7 to 8% of oil and it is reported that it is less suitable as manure because when land is irrigated, an oil-filament is formed on the surface of the oil. De-oiled cake is superior to it in 2 respects. One, it contains much less oil and

secondly it has more nitrogen content. But it should be noted that chemical fertilizers have even more nitrogen content than de-oiled cake and are cheaper than it. Even then farmers use de-oiled cake because it needs less water.

7.6 Method of Distribution and Supplies of Oil and Oilcakes:

There are different methods of distribution of oil and oilcakes. It depends upon the quantity of production. In case of small units, the oil and cakes are sold at the place of industry only. But in case of small scale industries the part of the oil and oilcakes are sold at the place of the oil mills and the remaining is sold into the markets. Sometimes, oil is sold through the agents on commission. The daily produced oil finds a very good market. The sale prices are not stable and constant. The prices are flexible. Even-though there is an association of oil mill owners still it has no any effective control over the prices of oil and oilseeds.

The following table 7.6 shows the average market price of different edible oilseeds in Solapur city.

A) Market Prices of Edible Oilseeds:

Table 7.6

The Average Market Prices of Edible Oil-Seeds in City Solapur (From 1990-91 to 2007-08)

(For 100 kg.)

Sr. No.	Years	Average Yearly Market Price in Rs.					
		Groundnut Rs.	Safflower Rs.	Sunflower Rs.	Mustard Rs.	Sesame Rs.	Nigarseed Rs.
1	1990-91	1155 (--)	1100 (--)	1300 (--)	700 (--)	1500 (--)	1100 (--)
2	1991-92	1125 (-2.60%)	1200 (9.09%)	1412 (8.62%)	812 (16.00%)	1619 (7.93%)	1150 (4.95%)
3	1992-93	1460 (29.78%)	1415 (17.92%)	1580 (11.90%)	720 -(11.33%)	1554 -(4.01%)	1265 (10.00%)
4	1993-94	1670 (14.38%)	1260 -(10.95%)	1490 -(5.70%)	915 (27.08%)	1620 (4.25%)	1335 (5.53%)
5	1994-95	1592 -(4.67%)	1320 (4.76%)	1698 (13.96%)	827 -(9.62%)	1829 (12.90%)	1449 (8.54%)
6	1995-96	1889 (18.66%)	1145 -(13.26%)	1577 -(7.13%)	927 (12.09)	2021 (10.50%)	1578 (8.90%)
7	1996-97	2173 (15.03%)	1289 (12.58%)	1820 (15.41%)	745 -(19.63%)	2129 (5.34%)	1550 -(1.77%)
8	1997-98	2505 (15.28%)	1355 (5.12%)	2026 (11.32%)	635 -(14.77%)	2245 (5.45%)	1610 (3.87%)
9	1998-99	2480 -(1.00%)	1260 -(7.01%)	2289 (12.98%)	700 (10.24%)	2316 (3.16%)	1689 (4.91%)
10	1999-00	2614 (5.40%)	1320 (4.76%)	2442 (6.68%)	512 -(26.86%)	2425 (4.71%)	1710 (1.24%)
11	2000-01	2700 (3.29%)	1409 (6.74%)	2577 (5.53%)	419 -(18.16%)	2565 (5.77%)	1754 (2.57%)
12	2001-02	2990 (10.74%)	1458 (3.48%)	2760 (7.10%)	305 -(27.21%)	2624 (2.30%)	1780 (1.48%)
13	2002-03	2563 -(14.28%)	1304 -(10.56%)	2267 -(17.86%)	1115 (265.57%)	1951 -(25.65%)	1575 -(11.52%)
14	2003-04	2554 -(0.35%)	1394 (6.90%)	2467 (8.82%)	754 -(32.38%)	1800 -(7.74%)	1371 -(12.95%)
15	2004-05	3538 (38.53%)	1788 (28.26%)	3225 (30.73%)	857 (13.66%)	3600 (100%)	1955 (42.60)
16	2005-06	3900 (10.23%)	2500 (39.82%)	3800 (17.83%)	1500 (75.03%)	3600 (0.00%)	2000 (2.30)
17	2006-07	4100 (5.13%)	2200 -(12.00%)	3600 -(5.26%)	1000 (33.33%)	3600 (0.00%)	2000 (0.00%)
18	2007-08	4100 (0.00%)	2600 (18.18%)	4000 (11.11%)	1400 (40.00%)	3600 (0.00%)	2100 (5.00%)

SOURCE: **"**Annual Report of Agriculture Produce Market Committee, Solapur" (1990-91 and 2007-08).

In fact, every oil mill owner has freedom for the production and distribution of oil. There are no any restriction either social or of the government for the production and for the supply of oil. In fact, there is no any common advertising system for the sale of oil. The oil mill owners upon the self-confidence and also on the basis of the self-calculations of market conditions undertake the production and distribution of the oil as they desire. The profit depends upon the cost of production.

Taking into consideration the suitable market condition of the outside places and accepting the rise in the prices of the oil, the oil and oilcakes are sent to the outside surrounding markets through the agents. In such case, the agents are mainly responsible. The agents are the middlemen between the purchaser and the oil mill owners. They get some commission from both the purchasers and sellers.

B) Commission:

All transactions in respect of the oil industries either of the purchase of raw-materials or of the sale of finished products such as oil and oilcakes are carried out through the middlemen who are called the Agents. These agents are getting their remuneration by way of commission. Agents are appointed either for certain markets or for certain territorial jurisdiction. How much commission is to be given is also determined by the parties.[1]

In case of 1 quintal of oil-seeds Rs. 5 are paid as a commission. It is paid by the oil mill owners and also by the purchasers. In case of sale of oil and oil cakes through agents the rate of commission is fixed by them. While oil is sold by barrel containing 180 kg. of oil, Rs. 20 as commission is paid to the agents.

This above is in respect of local market and also urban areas. In case of oil is sold by barrel to the outside markets through agents, commission at Rs. 25 to Rs. 30 is paid to the agents.

In case of the sale of oil cakes in local market, the agents get the commission of Rs. 3 to Rs. 4 for per bag. When it is sold into the outside markets, the commission is paid Rs. 5 to Rs. 6 per bag to the agent. The agents are discharging their duties as middlemen. In addition to that, they render the useful information about the market conditions and also the flexibility of the prices

Such an important function is so discharged by the agents. The rate of commission is sometimes higher. In absence of the role of the agents, it becomes very difficult to the oil mill owners to sell the oil and cakes at the proper places of markets at a proper price and so on. This is how the above factors must be taken into account for determining the mode of distribution and supply of oil and oil cakes by the oil mill owners.

7.7 Marketing Cost Analysis:

The oil and oil cakes produced by the oil mills are sold either in local market or in the outside markets therefore, they are to be transported. The transport charges are to be incurred. When the oil and oil cakes are sold in the local market, they are to be transported by the mini trolley. For this also the small amount is spent as a transport charges. For carrying 1 barrel of oil from the place of the oil mill to the local markets, transport charges of Rs. 50 are to be paid. In case of oil cake Rs. 5 to Rs. 6 are to be paid as a transport charges for each bag.

When the oil and cakes are sent for the sale into the outside markets, they are to be carried by Goods-truck. The transport charges are paid and loading and unloading charges are also to be

paid. Coolie charges are to be borne. In that case, the oil and oil cakes are to be carried by mini trolley from the place of industry to the railway station. Who is to bear these expenses is to be decided by the terms of the contract of sale between the sellers and purchasers.

Considering such terms of contract, the prices of sales are determined by the parties to the contract. The oil mill owners discharge some activities for keeping the goods ready for transport for sale, such as filling the bags, filling the barrels, stitching bags and marking them and also weighing. Such expenses for all such activities are to be borne by the oil mill owners. In that case, the sale prices are inclusive of all such expenses. So I found that there are such essential expenses for marketing, and supplies of the oil and oil cakes.

There are 98 oil mills in city Solapur. They produce oil and oil cakes. Part of their product is sold into the local market and remaining into the outside market. The goods are to be carried to the market places. There is also value added tax on purchase of oilseeds and sale of oil respectively. There are certain expenses like coolie charges, market cess, transportation charges etc. on the purchase and sale of the products.

7.8 Problems of Purchase and Sales (Marketing Problems):

The marketing of oil is the main problem of oil industry. The demand is more than the supply. The edible oil is an essential commodity for daily consumption. The raw materials for the oil industries are not easily available for all the period. The oilseeds are the seasonal products but whereas the oil industry is to be carried on for all the period of the year. The production of oil industries is oil and oil cake. Unless there is an effective organised market for the sale of oil and oil-cake, the oil industry cannot develop. The effective

sale is the foundation and the backbone of the success of every industry and business. Therefore, the oil mill owners are facing many marketing problems for the sale of their products. The following are the major defects and problems of the marketing oil.

a) Lack of organisation among the oil mill owners;

b) There is multiplicity of agency. Several agencies are engaged in the purchase and sales of the product of the oil industries. They are the middlemen and commission agents.

c) There is an unorganised marketing for the sale of oil and oil cakes. That has resulted in the big difference between the price release by the oil mill owners and the price paid by the consumers;

d) The oil is liquidated product and perishable nature and cannot be stored for a long time. The sales are immediately to be effected. Due to the secular conditions the oil mill owners are faced problems to sale their edible oil even though such sale may not be advantageous to them;

e) There is no any grading and standardisation of the product of the oil industry. Lack of storage and transport facilities have made the market problems more serious.

In city Solapur edible oil produced by the oil mill owners is mostly sold in the local market and the remaining part is sold into the outside markets. Before sales take place, there are many process of marketing which are to be carried out. There must be sufficient transport facilities to take the goods into the markets. The packing and packages must be done properly. The oil mill owners have to bear some expenses for their effective sales. They must advertise for their products and for their industry. The goods must be insured in transit. The sample of oil must be a branding in the marketing

senses means any letter, word, name, symbol or device, identify the source of manufacture of product.

Very recently there is a trend of getting 'AGMARK' the oil before sale. Where sales are made directly to the consumers or retailers in small quantities, the oil packages 1 kg. or 2 kg. are prepared and it bears the seal and symbol of Indian Standards Institutions. This has resulted into create a confidence in respect of the qualities and purity of the oil. For such sales the prices are little higher.

The edible oil marketing is not an organised market. There are no rules and regulations to govern the sales transactions. Sometimes, the monopoly forces have adversely effected and prices are unnecessarily increased or decreased by artificial factors. But, in fact, the oil mill owners are not benefited by that. Due to non availability of oilseeds of land, the speculative nature of market, the prices of the edible oil are most flexible.[16]

7.9 Insurance:

In every business in the form of production or in the form of distribution whether in industry or any other form of organisation, there is a great business risk on account of some un-speculated incidence and events. Therefore, there must be an assurance to compensate such loss and damages. In this respect, the insurance scheme has a great importance in the oil industries. The oilseeds and oil are easily subjected to the fire therefore, as a prevention and protection, every prudent oil mill owner gets insured his mill and properties including oilseeds and oil.

There are 2 types of insurance under the oil industries:

i) Insurance of expellers and machineries

ii) Insurance of stock of materials such as raw materials and finished goods.

i) Insurance of Machinery and Expellers and Machineries:

The machineries of oil industries are such as

a) Oil expellers,

b) Oil filter,

c) Boiler,

d) Electric motor

It is in the interest of the oil mill owners to get insured all these machineries, because if there is any damage of the machinery on account of some accidental event during the period under the insurance, the insured mill owner is entitled to get the compensation from the Insurance Company.

During my survey, it is noticed that all oil mills with machinery have been insured. This is how the insurance has created confidence in the mind of the oil mill owners for the establishment of oil industries and to operate them. The insurance has thus played an important role for the development of the oil industries.

ii) Insurance of Materials:

Under this form of policy there are 2 different classes which must be specially to be noted, that they are:

a) Insurance of raw materials,

b) Insurance of finished goods

a) Insurance of Raw Materials:

The oil mill owners are purchasing the oilseeds during all the periods and days of year. For oil industries, there is no any possible mode of purchasing annually. These

oilseeds, i.e. raw materials are stored in warehouses and they obtain the delivery from the warehouse according to their needs. If there is any accident causing, the damage to the raw-materials, in that case the Insurance Company gives the compensation. To illustrate, fire in the warehouse or theft of raw-materials from godown, in such case, the Inspector of the Insurance Company visits the place of incidence and after careful examination and verification, he comes to the conclusion of the true facts of the incidence and after calculating the actual loss sustained on account of accident to that extent only, the compensation is paid to the oil mill owner.

During the survey it is found that there are only 48 oil mill owners who have the large capacity of storing raw materials. They have taken the insurance policy. In respect of remaining other oil mill owners who have limited storing capacity have no any warehouse or godown for storing, so the required day to day raw materials are stored and kept in the same building where the oil mill is established. Under such circumstances, they took the policy for the machineries and raw materials both together.

b) Insurance of Finished Goods:

The insurance for oil and oil cake is known as the 'Insurance for Finished Goods' in respect of oil industries. It is seen that, the oil produced is not sold immediately at 1 time. It takes some time to sell the finished goods still then they are to be stored. If there is any accident causing the damage to the finished goods

and the insurance policy is in force, the insurance company gives the compensation to the extent of actual damage. In the city of Solapur, some big oil mills produce a large quantity of finished goods daily. The oil and oil cake are sold outside the Solapur city. When oil is carried by Tanker and the oil cake by trucks, there is every danger of the accident in the transit period. In this case also, such goods are insured during the period of transit. In transit, if there is any loss or damage to goods, the compensation is paid by the Insurance Company. In this way, the insurance assisted greatly for the development of oil industries and oil business.

7.10 Ownership and Rented Premises:

A) Ownership:

The ownership of the oil mill is also the material factor, for the establishment of oil mills. During the survey, it is found that, the pattern of ownership is either individual ownership or partnership firm. It was found that some owners had also rented out their oil mills to others. There were 2 modes of hiring a mill. One was to give the mill on yearly fixed rent which varied from Rs. 60,000 to Rs. 1,00,000 according to the size of the mill and secondly, letting on the basis of monthly fixed rent ranging from Rs. 5,000 to Rs. 7,000, as per the size of the oil mill. The person hiring the oil mill had to bear all the maintenance cost of the oil mill. In other case where oilseeds of the customers are crushed on labour charges, the maintenance costs were borne by the oil mill owner himself. This contract was for a certain minimum number of bags to be crushed. The following table will show the pattern of ownership:

Table 7.7

Pattern of Ownership

Limited Co.	Partnership	Individual	Rented	Total
Nil	**28**	**60**	**10**	**98**

SOURCE: **"**Annual Report of Agriculture Produce Market Committee, Solapur" (2005-06).

B) Rented Premises:

The main problem of oil industries is to select the proper place for establishment. Before 10 years, the oil mills in the city of Solapur are established within the area of the city. They were established mostly on the land and building belonging to the oil mill owners themselves. But from the last 10 years, the oil mills are increased in number, and have established at the adjacent area of the city. However, during the last 10 years the boundaries of the Municipal area of the city have been extended. The industrial zone and industrial area has been demarked and mapped under town planning. So on the lease-hold basis, the required land has been made available in the near vicinity of the agro-industrial area for the purpose of the oil-mills. The leases are for a long term and the oil mill owners are paying the rent for land. 75% of the oil mills have been established in the place and premises of the oil mill owners and the remaining oil mills are established on the rented premises. Of course, they pay higher rent, ranging from Rs. 2000 to Rs. 5000 Rupees per month.

7.11 Cost of Production:

In the course of survey for the oil industries in the city of Solapur, we deeply worked out to find the cost of production. The cost of production has a relation with profit or loss. In any business profit or loss is basically determined by the cost of production, minimisation of the cost of production leads to create the profit and excess cost of production minimise the profit or leads to create the loss. Therefore, the cost of production is an important weapon in the hands of the oil mill owner which determine the profit or the loss. In the open competitive market no producer can get the higher profit by increasing the price of his product. Producers have to accept the market price. Therefore to get more profit cost of production is the only 1 way which creates surplus.

In business getting more profit is the main aim of any producer, and it depends upon the minimisation of the cost of production. But minimisation of the cost of production depends upon the modernisation in production sector and modernization is the outcome of an increasing investment. So an increasing capital output ratio is necessary to modernise the production sector to minimise the cost of production which further create profit. It is observed that the oil mill owners in Solapur city are not using the modern techniques and technology in the process of production. Therefore, the oil mill owners of Solapur city are facing the problems in the competitive market with the big companies of edible oil production.

Ordinarily, the following are the main factors of cost of production in oil extraction process:

a) The cost of raw materials;

b) Labour charges;

c) Electricity charges;

d) Rent;

e) Repairs and maintenance, etc.

Normally 15 to 16 quintals of oilseeds are crushed by the oil mills having a medium type of expeller in 1 shift. For this, it is noticed that, the process cost is at Rs. 80 to 100 for per quintal.

The following is the table, showing details of cost of production under different heads of expenditure excluding cost of raw-materials for the crushing 15 quintals of oilseeds in a day in 1 shift, by the oil mill of 27" x 5" expeller.

Table 7.8

Details of Cost of Production under different Heads

Sr. No.	Particulars	Amount (Rs.)
1.	Labour charges for 3 male workers at Rs. 100 each	300.00
2.	Labour charges for 2 female workers at Rs. 60 each	120.00
3.	100 units of electricity (@ Rs. 5.50 per unit)	550.00
4.	Husk (2 bags @ Rs. 80 per bag)	160.00
5.	Repairs and maintenance charges	150.00
6.	Rent per day	120.00
7.	Cess (including supervision charges of market committee)	100.00
	Total:	**1500.00**

SOURCE: Calculated from Field Survey Primary Data.

The cost of production is at Rs. 100 per quintal of oilseeds.

At present, in the city of Solapur, sunflower and groundnut are used mainly as raw-materials by the oil mill owners. Per quintal sunflower or groundnut prices are ranging from at the rate of Rs.3000 to Rs. 3500 or Rs. 3500 to Rs. 4200 respectively. However, there are ups and downs in the prices of the oilseeds. There are also some expenses such as cartage and commission for bringing the oilseeds from market to the place of the oil mill. It is normally at Rs.10 to Rs. 15 per quintal. There is also Value Added Tax (VAT) which is separately recovered. It is at the rate of 12.5%. The labour charges, insurance charges, electricity charges, the maintenance of machinery and also the rent are the other heads of expenditures of oil mills.

7.12 Profit:

In the city of Solapur, the oil industries are classified in 3 groups on the basis of its nature and the productive activities. They are (a) Cottage Industry, (b) Small Scale Industry and (c) Large Scale Industry.

There is a different margin of profit among all these industries. The idea and the object behind every business activity including trade, commerce and industry are to earn more and more profit. The element of profit is a very effective factor for pricing of goods.

In economics, the term profit means, as the net income of a business after all the other costs, rent, wages and interest etc. They have been deducted from the total income. Profit is, therefore, uncertain and may vary from person to person and from firm to firm.

It may become zero, when costs are equal to income, and if the costs are higher, profit may actually be converted into loss.

Pure profit is the reward of entrepreneurial functions. Pure profit is an amount which accrues to the entrepreneur for assuming the risk inseparable from business. It is a reward for assuming, the final responsibility, which cannot be shifted to anybody else. No person undertakes any activity either in production or in distribution, without an object of getting profit. With the same object the oil mill owners are carrying on the oil industries. So it is very clear that profit is varying according to the size of production and the modern techniques followed by the different types of oil mills either small or large.

A) Profit Margin in Oil Industries:

In Solapur city, the oil industries are classified into 3 groups:

a) Cottage Industry,

b) Small Scale Industry

c) Large Scale Industry

a) Cottage Industry:

The production of oil is also done under the form of cottage industry. In this, with the help of animal power the oil is produced by ghanis. The production cost is more. Therefore, the margin of profit is less. To keep the animals and to feed them is costly. Hence, the electric power has been used in the place of animal power for the production of oil. Therefore, the cost of production is minimised and it has resulted, to have the more margin of profit. However, the cottage industry itself is a very small industry having a limited capacity of production and ultimately, the margin of profit under such industry is less and low. Sometimes, the owners suffer loss instead of getting profit, considering all this, yearly Rs. 48,000 are earned as

profit in such industry. The profit is 4 to 5% because, the wages and other expenses and cost are always high, therefore, the profit is minimum.

b) Small Scale Industry:

In city of Solapur, there are some oil industries in the form of small scale industry. They run with the power. There is a good profit under such industries, because the production is undertaken, considering the existing demand into the market. 20 to 22 quintals oilseeds are crushed within 24 hours, by the 9 bolts expeller. Therefore, the cost of production is low.

For example, the production is 7 to eight times more than the production of cottage industry. No doubt, the labour expenses are also more. For the cottage industry, it is more by 1½ times than that of small scale industry. Ultimately and comparatively, the total production is more. So there is a large and increasing profit in the small scale industry. Even there are some expenses to bring the raw materials from the outside places still the margin of profit is more, because the capacity of the small scale industry is more than that of the cottage industry. Therefore, 10% to 12% of the profit is earned by the oil mill owners i.e. the profit of Rs. 1,00,000 to Rs. 1,50,000 in a year. It is the net profit after deducting all expenses and the cost of production.

c) Large Scale Industry:

In city of Solapur, there are some oil industries which are in a large scale form. They are having 2 to 3 expellers under 1 roof and less than 1 management, therefore, the total production is in a large quantity. There is 1 oil mill with a double chamber expeller. Once the oilseeds are poured the final product is automatically of crushing of such expeller is 150 bags in a day. The oil mill owners have a large purchasing capacity. They purchase in a large quantity at a

low price. The expenses for bringing oilseeds to the oil mill are also less. They sell their goods to such markets and they are able to bear the transport expenses. Considering the large quantity for sale, the transport expense in that ratio is minimum and low. The production is more by three times than the production of small scale industry. Therefore, there is always a large margin of profit in such industry. They get 12 to 15% profit and finally 3 to 4 lakh amount of profit is earned in a year.

B) Profit Margin in By-Products Production:

a) Profit margin on oil.

b) Profit margin on oil cakes.

a) Profit Margin on Oil:

In every oil industry, the oil and oilcakes are produced. There is a production of 37 kg. of oil and 61 kg. of oil cake from 1 quintal oilseeds. When the small owners purchase the oilseeds, they try to purchase good quality of oilseeds. They also consider and think over the oil capacity of the oilseeds, this is called as “Outen”. In the market, there is an increasing demand for oil, but the supply of oil is less. There is no any control and the restriction of Government on the profit earnings. The oil mill owners among themselves determine the prices of the oil, therefore, there is a large and more amount of the profit. Sometimes, the oil refined by the refining process and that oil is pure and hygienic. The sale price of such oil is always more by 1 or 2 Rupees for per kg. than the usual price of heavy nature. Its capacity is also large. Its machineries are heavy therefore it requires large capital to establish.[20]

In Solapur city, at present, there is no such refine oil industry. The oil mill owners taking into consideration of market situation and considering the increasing demand for oil, they have their own pricing policies and, therefore, there is every likely, the sale price of

the oil is high it is on account of the artificial position of the market. The prices are not stable and certain. They are always flexible. The prices are determined by the monopoly tendency. Due to the shortage of oil, the prices are increasing day by day. The oil is sold either in the local market or in the state market. In the small scale industry, there is a profit of 3% to 4% on the oil and whereas it is 4% to 5% profit in case of large scale industry.

b) Profit on Oilcake:

The oil cake is produced by each and every oil industry in Solapur city. After the extraction of oil, the remaining part is called on oilcake. While purchasing the oilseeds, the oil mill owners consider, how much oil and how much oil cake is likely to be produced from such seeds. When there is a high demand for the oil cake in the market, naturally, the margin of profit on the oil cake is more. 2% to 3% profit is earned as an average profit on oil cake. In the big industries, such as a solvent plant the oil is produced from the oilcakes. They purchase the oil cakes to extract the oil from oilcake. It is normally 6 to 7%. The oil cake is put into the chemical process and pressed by the heavy machineries with high pressures. Therefore, the oil is extracted from the oil cakes. In such industry, there is a large margin of profit.

In the direct survey through questionnaire, it is found that some oil mill owners are getting more profit and some are less and some are bearing the loss, because of an appropriate management system or mismanagement. In Solapur city, oil mill owners are not using the modern management, modern techniques and technology and further they are not operating all the market and related functions efficiently and effectively. Therefore, the edible oil industry in Solapur city is lagging behind.

7.13 Conclusion:

In the direct survey through questionnaire it is found that the govt. of Maharashtra restricted the production of safflower oilseeds to the oil mill owners from 1995-96 to protect traditional tel-ghani business. Oil mills in Solapur city crush mainly one groundnut and sunflower oilseeds. It is also found that upto 2000-01 almost all the oil mills were using old machineries and old technique of filtration of edible oil. From 2000-01 most of the oil mills renewed the production method and elaborated modern machineries consists a slide change in the extraction process of edible oil.

Before the extraction of safflower oilseed the owners of tel-ghanis used the primary process such as cleaning & grading, decortication, sieving and winnowing, watering etc. tel-ghani units use old method of extraction of oil such as direct heating, pressure by ghani, natural filtration system etc.

Oil mill owners used decorticator, boiler, filter press, filter pump and expellers for the extraction of oilseeds and oil cakes. The extraction of the expelling method is superior to the ghani method. Therefore it gives more quantity of oil and oil cakes.

It has been found in survey of the study that the edible oil produced by the oil mills in city Solapur is almost sold in the market of city Solapur and also in the neighboring areas. Out of the total production of oil and oil-cake, 60% of such production is sold in the city of Solapur and surrounding areas of different Talukas. The remaining 40% of such production is being sent to the outside place for sale. The oil mill owners sell the oil and oil cakes to the traders of such places, where there is higher price of such products.

The edible oil is sold in wholesale and retail market directly and through commission agents. Oil industry in Solapur is mostly

small scale industry therefore the oil mill owners of such industry do not find the international market for their products. They produce in a small quantity. Their financial position is also not sound therefore such owners do not have any interest in the international market.

The prices of oilseeds are not stable because it depends upon rainfall and agricultural yield productivity and also depend upon the cultivation area under oilseeds. If the cultivation area under oilseeds increases it leads to decrease the prices of oilseeds in the market and vice versa. In survey it is also found that the prices of oilseeds increased from 1990-91 to 2007-08. It is not due to decrease in the area under cultivation of oilseeds but an increasing demand for edible oil.

The cost of extraction of edible oil is increasing due to use of the old machinery and small capacity of oil extraction machineries. In Solapur city owners are not using modern management modern techniques and further they are not operating in all the markets and related functions efficiently, therefore, the edible oil industry in Solapur city is facing many problems. Therefore the oil mill owners are not getting the expected profits from this business.

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CHAPTER - VIII

PERFORMANCE EVALUATION BASED ON RATIO ANALYSIS

8.1 Introduction:

In present research work all the 69 sample oil mills analysed and evaluated their financial systems through different ratios. In Solapur city there are total 98 big and small oil mills out of which 60 big oil mills and 9 small oil mills are taken for the study as sample oil mills. The total production, cost of production, gross profit, net profit, total assets, total liabilities, debts, total sales, current assets, current liabilities, fixed assets etc. are analysed in this chapter through ratios. The performance of sample oil mills is evaluated and presented through the different ratios from 2000-01 to 2007-08.

This chapter includes the different types of the graphs related to the results of concerned ratios. The elaborated graphs show the performance of sample oil mills during the years 2000-01 to 2007-08 in Solapur city. These graphs also help to know the ups and downs of the financial and the economic positions of sample oil mills in the Solapur edible oil market. The ratios also show the working of financial position, economic situation and other operations of oil mill business in Solapur city.

8.2 Ratio Analysis:

Ratio analysis is the one of the powerful tools of the financial analysis. A ratio can be defined as the indicated quotient of 2 mathematical expressions", and as "the relationship between 2 or more things". Ratio is, thus, the numerical or an arithmetical relationship between 2 figures. It is expressed where 1 figure is divided by another. If 4,000 are divided by 10,000, the ratio can be expressed as.4 or 2:5 or 40%. A ratio can be used as a yardstick for evaluating the financial petition and performance of a concern,

because the absolute accounting data cannot provide meaningful understanding and interpretation. A ratio is the relationship between 2 accounting items expressed mathematically. Ratio analysis helps the analyst to make quantitative judgment with regard to concern's financial position and performance.

Absolute figures are valuable but they standing alone convey no meaning unless compared with another. Accounting ratios show inter-relationships which exist among various accounting data, when relationships among various accounting data supplied by financial statements are worked out, they are known as accounting ratios.

Accounting ratios can be expressed in various ways such as:

i) a *pure ratio* say ratio of current assets to current liabilities is 2:1 or

ii) a *rate* say current assets are two times of current liabilities or

iii) a *percentage* say current assets are 200% of current liabilities.

Each method of expression has distinct advantages over the other. The analyst will select that data made which will best suit his convenience and purpose.

8.3 Importance of Ratio Analysis:

Ratio analysis stands for the process of determining and presenting the relationship of items and gravity of items in the financial statements. It is an important technique of financial analysis. It is a way by which financial stability and health of a concern can be judged. The following are the main points of importance of ratio analysis.

(i) Useful in Financial Position Analysis:

Accounting ratios reveal the financial position of the concern.

This helps the banks, insurance companies and other financial institutions in lending and making investment decisions.

(ii) Useful in Simplifying Accounting Figures:

Accounting ratios simplify, summarise and systematise the accounting figures in order to make them more understandable and in lucid form. They highlight the inter-relationship which exists between various segments of the business as expressed by accounting statements. Often the figures standing alone cannot help them convey any meaning and ratios help them to relate with other figures.

(iii) Useful in Asserting the Operational Efficiency:

Accounting ratios help to have an idea of the working of a concern. The efficiency of the firm becomes evident when analysis is based on accounting ratios. They diagnose the financial health by evaluating liquidity, solvency, profitability etc. This helps the management to assess financial requirements and the capabilities of various business units.

(iv) Useful in Forecasting Purposes:

If accounting ratios are calculated for a number of years, then a trend is established. This trend helps in setting up future plans and forecasting. For example, expenses as a percentage of sales can be easily forecasted on the basis of sales and expenses of the past years.

(v) Useful in Locating the Weak Spots of the Business:

Accounting ratios are of great assistance in locating the weak spots in the business even though the overall performance may be efficient. Weakness in financial structure due to incorrect policies in the past or present are revealed through accounting ratios. For example, if a firm finds that increase in

distribution expenses is more than proportionate to the results expected or achieved, it can take remedial steps to overcome this adverse situation.

(vi) Useful in comparison of performance:

Through accounting ratios comparison can be made between 1 departments of a firm with another of the same firm in order to evaluate the performance of various departments in the firm. Manager is naturally interest in such comparison in order to know the proper and smooth functioning of such departments. Ratios also help him to make any change in the organisation strucutre.[10]

Through accounting ratios comparison can be made between 1 departments of a firm with another of the same

8.4 Limitations of Accounting Ratios:

Ratio analysis is very important in revealing the financial position and soundness of the business. But, in spite of its advantages, it has some limitations which restrict its use. These limitations should be kept in mind while making use of ratio analysis for interpreting the financial statements. The following are the main limitations of accounting ratios:

1) False results if based on incorrect accounting data:

Accounting ratios can be correct only if the data (on which they are based) are correct. Sometimes, the information given in the financial statements is affected by window dressing, i.e., showing position better than what assets is. For example, if inventory values are inflated or depreciation is not charged in fixed assets, not only will 1 have an optimistic view of profitability of the concern but also of its financial position. So

the analyst must always be on the look-out for signs of window dressing, if any.

2) No Idea of Probable Happenings in Future:

Ratios are an attempt to make analysis of the past financial statements; so they are historical documents. Now-a-days keeping in view of complexities of the business, it is important having an idea of the probable happenings in future.

3) Variation in Accounting Methods:

The 2 firms' results are comparable with the help of accounting ratios only if they follow the same accounting methods or bases. Comparison will become difficult if the 2 concerns follow the different methods of providing depreciation or valuing stock. Similarly, if the 2 firms are following 2 different standards and methods analysis by reference to the ratios would be misleading. Moreover, utilisation of inbuilt facilities, availability of facilities and scale of operation would affect financial statements of different firms. Comparison of financial statements of such firms by means of ratios is bound to be misleading.

4) Price Level Changes:

Changes in price levels make comparison for various years different. For example, the ratio of sales to total assets in 2002 would be much higher than in 1982 due to rising prices, fixed assets being shown at cost and not at market price.

5) Only 1 Method of Analysis:

Ratio analysis is only a beginning and gives just a fraction of information needed for decision-making. Therefore, to have a

comprehensive analysis of financial statements, ratios should be used along with other methods of analysis.

6) No Common Standards:

It is very difficult to lay down a common standard for comparison because circumstances differ from concern to concern and the nature of each industry is different. For example a business with current ratio of more than 2:1 might not be in a position to pay current liabilities in time because of an unfavorable distribution of current assets in relation to liquidity. On the other hand, another business with a current ratio of even less than 2: 1 might not be experiencing any difficulty in making the payment of current liabilities in time because of its favourable distribution of current assets in relation to liquidity.

7) Different Meanings Assigned to the Same Term:

Different firms in order to calculate ratio may assign different meanings. For example, profit for the purpose of calculating a ratio may be taken as profit before charging interest and tax or profit before tax but after interest or profit after tax and interest. This may affect the calculation of ratio in different firms and such ratio when used for comparison may lead to wrong conclusions.

8) Ignores Qualitative Factors:

Accounting ratios are tools of qualitative analysis only. But sometimes qualitative factors may surmount the quantitative aspects. The calculations derived from the ratio analysis under such circumstances may get distorted. For example, though credit may be granted to a customer on the basis of information regarding his financial position, yet the grant of

credit ultimately depends on debtor's character, honesty, past record and his managerial ability.

9) No Use if Ratios are Worked Out for Insignificant and Unrelated Figures:

Accounting ratios may be worked for any 2 insignificant and unrelated figures as ratio of sales and investment in government and unrelated figures as ratio of sales and investment in government securities. Such ratios may be misleading. Ratios should be calculated on the basis of cause and effect relationship. One should be clear as to what cause and what effect before calculating a ratio between 2 figures.

8.5 Current Ratio:

This ratio is a test of the ability of the firm to meet its short term commitments in time. It is the ratio obtained by selling the current assets against the current liabilities. Current liability means those repayable in a year's time. Current Asset means assets convertible and meant to be converted into cash within a year time.

Current ratio may be defined as the ratio of current assets to current liabilities. It is also known as working capital ratio, or 2:1 ratio. Current ratio shows the relationship between total current assets and total current liabilities, expressed as formula the current ratio is as follows:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Significance:

Current ratio is an index of the firm's financial stability i.e. an index of technical solvency and an index of the strength of working

capital, which means excess of current assets over current liabilities. The logic behind current ratio is that cash need not be immediately available to meet all current liabilities on a particular date but there should be good prospects for an adequate in flow of cash indicated by the amounts of individual components of current assets. A high current ratio is an assurance that the firm will have adequate funds to pay current liabilities and the current payments. The main limitation of current ratio is that it fails to indicate the liquidity of individual components of current assets. For example, a high current ratio due to large inventories may not be regarded as an index of current ratio due to large inventories may not be regarded as an index of liquidity as 1 which is due to huge cash and bank balances.

Even if the ratio is favourable, the firm may be a financially favourbale because of more stock and work in progress which are not easily convertible into cash and therefore may have less cash to pay off current liabilities. Hence, it is suggested that the current ratio should not be used as the sole index of short term solvency.[6]

In present research work for the study of performance of all sample oil mills, the current assets, and the current liabilities are calculated for to get the current ratio of all 69 sample oil mills.

The following table 8.1 shows the total current assets and total current liabilities of all 69 sample oil mills during the period 2000-01 to 2007-08. The current ratio is calculated by the above equation.

Table 8.1

Current Ratio of 69 Sample Oil Mills in Solapur City

During the years 2000-01 to 2007-08

Sr. No.	Year	Current Assets Rs. in Crores	Current Liabilities Rs. in Crores	Current Ratio in Time
1	2	3	4	5
1.	2000-01	17.73	10.73	1.65:1
2.	2001-02	18.98	11.27	1.68:1
3.	2002-03	20.23	12.68	1.59:1
4.	2003-04	21.83	13.99	1.56:1
5.	2004-05	22.85	12.40	1.84:1
6.	2005-06	22.74	11.57	2.01:1
7.	2006-07	24.33	11.70	2.08:1
8.	2007-08	25.13	11.34	2.21:1

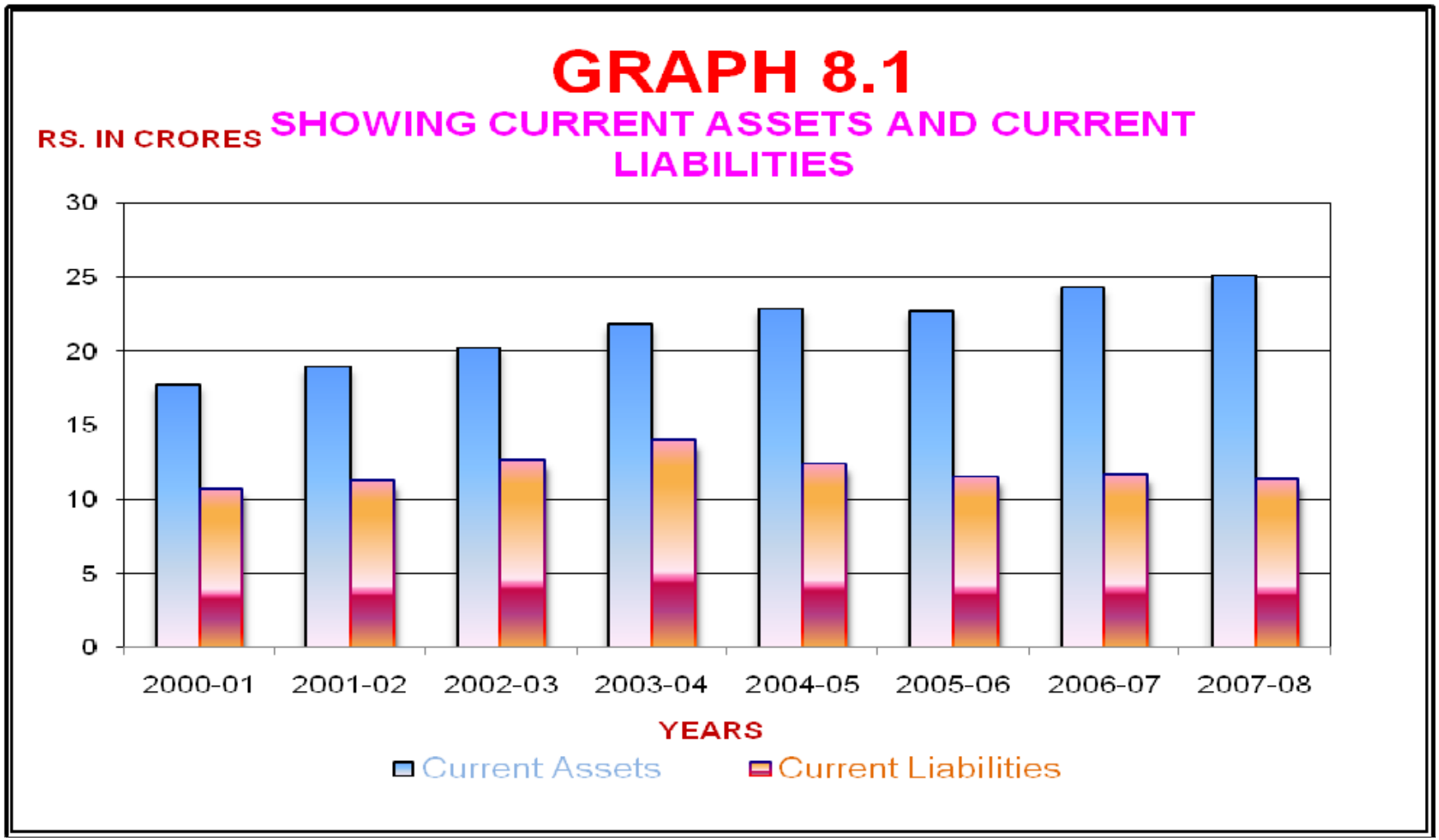
SOURCE: Calculated from Field Survey Primary Data.

In the year 2000-01 the amount of current assets of sample oil mills is Rs. 17.73 crores. It increased upto Rs. 25.13 crores in the year 2007-08. The amount of current liabilities also increased from Rs. 10.73 crores to Rs. 11.34 during the year 2000-01 to 2007-08.

The current ratio in the year 2000-01 was 1.65:1 in the year 2001-02. It decreased to 1.59:1 and 1.56:1 in the year 2002-03 and 2003-04 respectively. From the year 2004-05 to 2007-08 the current ratio increased from 1.84:1 to 2.21:1.

The above table shows the performance of current ratio of total 69 sample oil mills is increasing. Only in the year 2002-03 and 2003-04 this current ratio decreased. The overall position of current ratio is satisfactory in all years under study.

The following graph 8.1 shows current assets and current liabilities of 69 sample oil mills in Solapur city during 2000-01 to 2007-08.



8.6 Gross Profit Ratio:

Gross profit ratio is the ratio of gross profit to net sales expressed as a percentage. It expresses the relationship between gross profit margin and sales. The basic components for the computation of this ratio are gross profit and net sales. Gross profit would be the difference between net sales on cost of goods sold. Generally the expenses charged to profit and loss account or operating expenses are excluded from the calculation of cost of goods sold.[11]

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

For e.g. If gross profit is Rs. 42,000 and net sales are Rs.3,00,000 the gross profit ratio will be 14% (i.e. Rs. 42,000 / Rs.3,00,000 x 100).

Significance:

Gross profit ratio may indicate to what extent the selling prices of goods per unit may be reduced without incurring losses on operations. It is useful to ascertain whether the average of the norms on the goods sold is maintained. There is no standard gross profit ratio for evaluation. Trend observed may be used for the analysis. However, the gross profits earned should be sufficient to recover all operating expenses, and to build up reserves after all fixed interest charges and dividends.

The most of the writers expressed their views about the standard gross profit ratio. According to them it should be 20%. If a particular firm or company or the industry is having gross profit ratio less than 20%, it indicates weak performance of the industry and vice versa.

The following table 8.2 shows the gross profit ratio of all the 69 sample oil mills during the years 2000-01 to 2007-08

Table 8.2

Gross Profit Ratio of all 69 Sample Oil Mills in Solapur City

During the years 2000-01 to 2007-08

Sr. No.	Year	Net Sales Rs. in Crores	Gross Profit Rs. in Crores	Gross Profit Ratio
1	2	3	4	5
1.	2000-01	29.52	2.58	8.73%
2.	2001-02	34.58	3.25	9.40%
3.	2002-03	30.74	2.72	8.85%
4.	2003-04	32.45	3.25	9.43%
5.	2004-05	49.44	3.96	8.01%
6.	2005-06	57.34	4.19	7.30%
7.	2006-07	59.59	4.94	8.29%
8.	2007-08	64.00	5.75	8.98%

SOURCE: Calculated from Field Survey Primary Data.

We get the following conclusions from the above table.

1) The column no. 3 from the above table shows increasing net sales of 69 sample oil mills. In the year 2000-01 the net sales were Rs.29.52 crores it increased upto Rs.64.00 crores in the year 2007-08.

2) The table also shows an increasing gross profit of 69 sample oil mills. In the year 2000-01 it was Rs.2.58 crores increased upto Rs.5.75 crores in the year 2007-08.

3) In the further period upto 2007-08 more or less the gross profit ratio remained constant. The gross profit of sample oil mills increased every year along with increasing sales. By the column no. 3 and 4 we get the gross profit ratio of 69 sample oil mills.

The standard gross profit ratio is 20%. Under the study it is found the gross profit ratio of 69 sample oil mills is ranging from 7.30% to 9.43% within the years 2000-01 to 2007-08. It shows low gross profit ratio of oil mills. It also shows weak performance of sample oil mills concerned to the gross profit ratio.

Reasons:

The gross profit ratio of oil mills in Solapur city is low as compared to the standard gross profit ratio due to the following reasons.

1) It is observed that the supply of oilseeds which is raw material of oil mills is low as compared to the demand. The oil mill owners purchase oilseeds in the APMC market of Solapur by high prices because of large no. of purchasers and low supply of oilseeds in the market. Therefore the gross profit of oil mill owners always remain low, so the gross profit ratio remained low as compared to the standard gross profit ratio.

2) The gross profit ratio of oil mill owners is low also due to an increase in cost of production. Oil mill owners are using old machineries and old techniques as compared to the big oil extraction companies. Therefore, the gross profit of oil mill owners is remained low. This is also one of the reasons of low gross profit ratio.

3) It is also observed there is competition among the oil mill owners to sale the produced edible oil and oil cake in Solapur edible oil market. Therefore they cannot achieve good prices for their products. This leads to decrease in the gross profit of Solapur oil mill owners. This also tends to remain low gross profit ratio.

Measures:

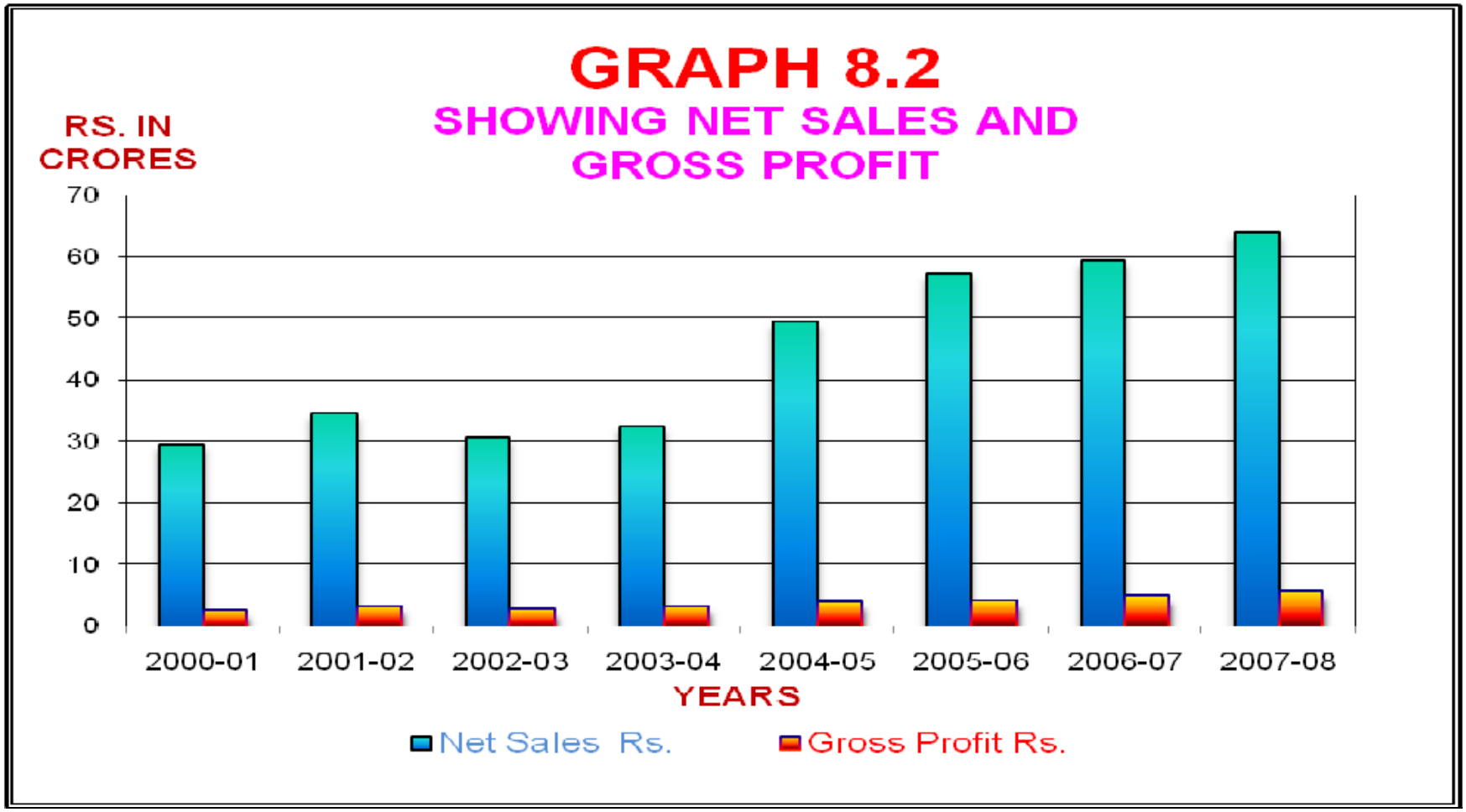
To remove out the low gross profit ratio or to increase gross profit ratio, the following measures are useful which are also suitable to adopt oil mill owners of Solapur city.

1) oil mill owners of Solapur city should adopt the modern techniques for crushing oilseeds. It leads to decrease the cost of production and further it helps to increase the gross profit, using modern technology and modern machinery leads to increase the gross profit ratio.

2) The oil mill owners of Solapur city should purchase the oilseeds not only in Solapur market but also in other state markets where the prices of oilseeds are always low. They are also expected to purchase directly rather than through the commission agents. Due to this they will have the raw material at lower prices which leads to increase the gross profit ratio.

3) To get the better gross profit ratio and to get higher gross profit the oil mill owners of Solapur city should sale their final product such as oil and oil cake to the better prices by using modern techniques of market such as advertisement, use of brand, use of market plans to find out new market etc. This leads to increase the gross profit ratio.

The following graph 8.2 shows net sales and gross profit of 69 sample oil mills in Solapur city during 2000-01 to 2007-08.



8.7 Net Profit Ratio:

This is the ratio of net income or profit after taxes to net sales. Net profit, as used here, is the balance of profit & loss account which is arrived at after considering all non-operating income such as interest on investments, dividend received etc. and non-operating expenses like loss on sale of investment, provision for contingent liabilities etc.

$$\text{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100$$

This is used as measure of overall profitability and it is useful to the owners. It is both an index of efficiency as well as profitability when used along with gross profit and operating ratio.

This ratio differs from the operating profit ratio in as much as it is calculated after deducting non-operating expenses, such as loss on sale of fixed assets etc. from operating profit and adding non-operating income like interest on dividends on investment, profit on sale of investments or fixed assets etc. to such profit. Higher the ratio, the better it is because it gives idea of improved efficiency of the concern.[5]

The following table 8.3 shows the net profit ratio of 69 sample oil mills during the years 2000-01 to 2007-08.

Table 8.3

Net Profit Ratio of all 69 Sample Oil Mills in Solapur City

During the years 2000-01 to 2007-08

Sr. No.	Year	Net Profit Rs. in Crores	Net Sales Rs. in Crores	Net Profit Ratio
1	2	3	4	5
1.	2000-01	1.60	29.52	5.41%
2.	2001-02	2.03	34.58	5.87%
3.	2002-03	1.60	30.74	5.21%
4.	2003-04	2.01	32.45	6.19%
5.	2004-05	2.71	49.44	5.48%
6.	2005-06	3.02	57.34	5.27%
7.	2006-07	3.72	59.59	6.23%
8.	2007-08	3.92	64.00	6.13%

SOURCE: Calculated from Field Survey Primary Data.

We get the following conclusions from the above table.

1) The column no. 3 shows the net profit of sample oil mills. It was Rs. 1.60 crores in the year 2000-01 and increased to Rs.3.92 crores in the year 2007-08. Column no. 4 shows increasing sales of all 69 sample oil mills during the years 2000-01 to 2007-08.

2) The net profit ratio of all 69 sample oil mills was 5.41% in the year 2000-01. It increased to 5.87% in 2001-02. In the year 2003-04 the net profit ratio was 6.19% and in the year 2007-08 it was 6.13%. The net profit ratios of all sample mills were more or less ranging from 5% to 6%. It is due to fluctuating prices of oil and oil cake.

This ratio is moderate in all 8 years under study.

According to the most of the writers of Account, Management Books the net profit ratio should be progressive, only it shows the better performance of firm or industry.

It is observed that the net profit ratio of all sample oil mills is not increasing so fast and it remains from 5.21% to 6.23% within 8 years from 2000-01 to 2007-08.

Reasons:

The following are the reasons of low net profit ratio and slow growth of net profit ratio.

1) The gross profit and net profit are the 2 sides of the same coin. The net profit is calculated from the gross profit by deducting the administration expenses from the gross profit, the net profit arise. If the gross profit is low automatically the net profit will also low. In this study it is found that the gross profit of 69 sample oil mills is low as compared to the standard gross profit ratio. Therefore the net profit ratio is also low within 8 years i.e. from 2000-01 to 2007-08.

2) The administration expenses of oil mills in Solapur city is high and increasing, therefore the net profit remain low and increasing slowly. This is also one of the reasons of low net profit ratio.

3) For the better net profit ratio better prices of final products are required. The oil mill owners in Solapur city sell their maximum products in local market. Therefore they cannot get higher prices for their product, due to this the net profit ratio remain low.

4) An increasing cost of production is one of the easons to remain low net profit ratio of all 69 sample oil mills in Solapur city.

5) The oil mill owners are not in modern competitive market where different edible oil companies are selling their products

by using the modern market technology. Therefore oil mill owners in Solapur city are not getting higher prices for their products. This also leads to decrease the net profit to the oil mill owners. This also leads to remain low net profit ratio within 8 years i.e. from 2000-01 to 2007-08.

Measures:

To get the better net profit ratio the oil mill owners in Solapur city should adopt the following measures.

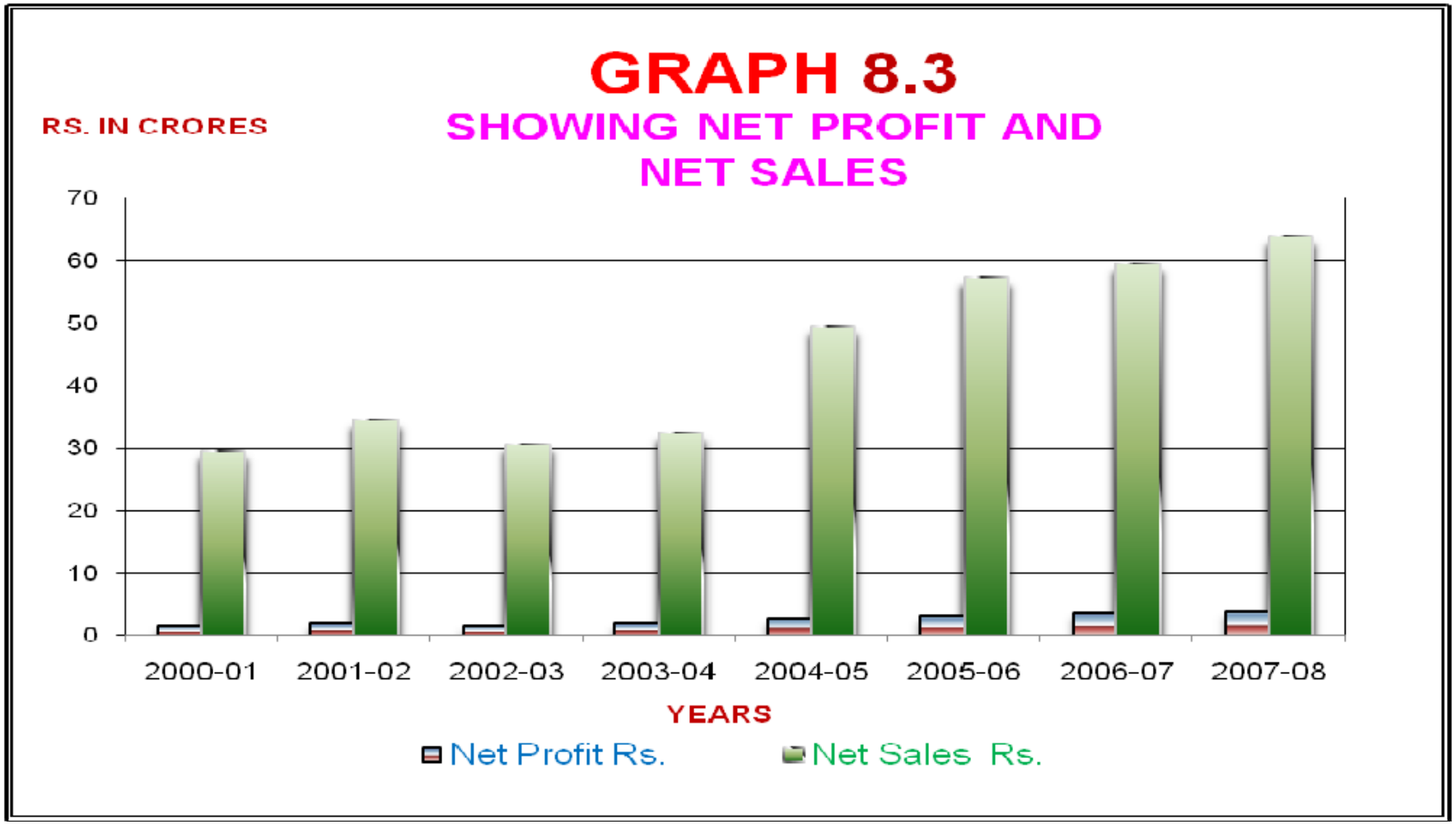
1) The oil mill owners in Solapur city should purchase the higher quality oilseeds in those markets where it is made available rather than only in Solapur market. It leads to increase the total gross profit and net profit, further it leads to increase the net profit ratio which shows the better performance of oil mills.

2) The oil mills in Solapur city are employing unskilled labours and technicians for processing of oilseeds and extraction of oilseeds this also leads to decrease the final product. Therefore, the gross profit and net profit remained low. The oil mill owners in Solapur city should employ educated technicians and skilled labours which lead to create better performance of final product.

3) The administration expenses determine the net profit. The administration cost of Solapur oil mills is high and increasing, therefore the net profit remains low. The oil mill owners should adopt the modern techniques in administration, which leads to increase the net profit and net profit ratio.

4) The oil mill owners in Solapur city should also adopt the modern techniques of promotion and modern machineries which leads to decrease the cost of production. Further they should adopt modern techniques of transportation and modern techniques of market plan this also leads to expand the net profit.

The following graph 8.3 shows net profit and net sales of 69 sample oil mills in Solapur city during 2000-01 to 2007-08.



8.8 Operating Ratio – (OR):

This is the ratio of cost of goods sold plus operating expenses to net sales. This is closely related to the ratio of operating profit to net sales. For example, if the operating ratio is 80% then the operating profit ratio would be 20%.

This ratio indicates the proportion that the cost of sales bears to sales. Cost of sales includes direct cost of goods sold as well as other operating expenses, administration expenses, selling and distribution expenses which have matching relationship with sales. It excludes income and expenses which have to bearing on production and sales, i.e. non-operating incomes and expenses as interest and dividend received on investment, interest paid on long-term loans and debentures, profit or loss on sale of fixed assets or long term investments. It is calculated as follows:

$$\text{Operating Ratio} = \frac{\text{Cost of goods sold + Operating exps.}}{\text{Net Sales}} \times 100$$

OR

$$\text{Operating Ratio} = \frac{\text{Operating Cost}}{\text{Net Sales}} \times 100$$

Cost of goods sold = Opening stock + Purchases + Direct exps.
+ Manufacturing exps. – Closing stock or
Sales – Gross profit

Operating expenses = Administrative exps.
+ Selling and distribution expenses

For example, if cost of goods sold Rs. 3,10,000, operating expenses Rs. 2,00,000 and net sales Rs. 6,80,000 are given, then operating ratio will be 75%. (i.e. Rs.3,10,000 + Rs.2,00,000 ÷ Rs.6,80,000 x 100).

Lower the ratio, the better it is. Higher the ratio, the less favourable it is because it would have smaller margin of operating profit for the payment of dividends and the location of reserves. This ratio should be analysed further to throw light on the levels of efficiency prevailing in different elements of total cost.[12]

Table 8.4

Operating Ratio (OR) of all 69 Sample Oil Mills in Solapur City

During the years 2000-01 to 2007-08

Sr. No.	Year	Cost of Goods Sold + Operating Expenses Rs. in Crores	Net Sales Rs. in Crores	Operating Ratio
1	2	3	4	5
1.	2000-01	22.03	29.52	74.63%
2.	2001-02	25.59	34.58	73.99%
3.	2002-03	23.02	30.74	74.88%
4.	2003-04	23.78	32.45	73.29%
5.	2004-05	37.04	49.44	74.47%
6.	2005-06	42.72	57.34	74.51%
7.	2006-07	43.51	59.59	73.020%
8.	2007-08	46.61	64.00	72.83%

SOURCE: Calculated from Field Survey Primary Data.

We get the following conclusions from the above table.

1) The column no. 3 shows operating cost which increased from Rs. 22.03 crores in the year 2000-01 to Rs.46.61 crores in the year 2007-08.

   Column no. 4 shows an increase in Net Sales from Rs.29.52 crores in the year 2000-01 to Rs.64.00 crores in the year 2007-08. The ratio between these 2 is calculated which is the operating ratio.

2) Column no. 5 shows the ratio between operating cost and net sales which is called operating ratio. In the year 2000-01 operating ratio was 74.63%, it decreased to 73.99% in the year 2001-02. It decreased to 72.83% in the year 2007-08, it means the performance of all sample oil mills is better. There is no drastic change in the operating ratio during the years 2000-01 to 2007-08. This shows the stability of oil mill business in Solapur city.

According to the experts decreasing and low operating ratio shows the better performance of the firms. In this study it is observed that the operating ratio of 69 sample oil mills is more or less remained constant within 8 years i.e. from 2000-01 to 2007-08. The reasons of this are as follows:

Reasons:

1) The high cost of production and low prices of the product are the major reasons of high operating ratio. The oil mills in Solapur city are not getting better prices for their products. Their products are sold in local market rather than in state and national market. Therefore the operating ratio generally remained constant within 8 years i.e. from 2000-01 to 2007-08.

2) In this study it is observed that the net sales of the oil mills increasing in the same proportion. Therefore there is no

drastic change in the net sales. Oil mill owners are not adopting any modern techniques to expand the sales of their products therefore the operating ratio remained constant.

3) The oil mill owners in Solapur city are not using modern heavy machineries, therefore the average cost of production always remains high which leads to high operating ratio.

Measures:

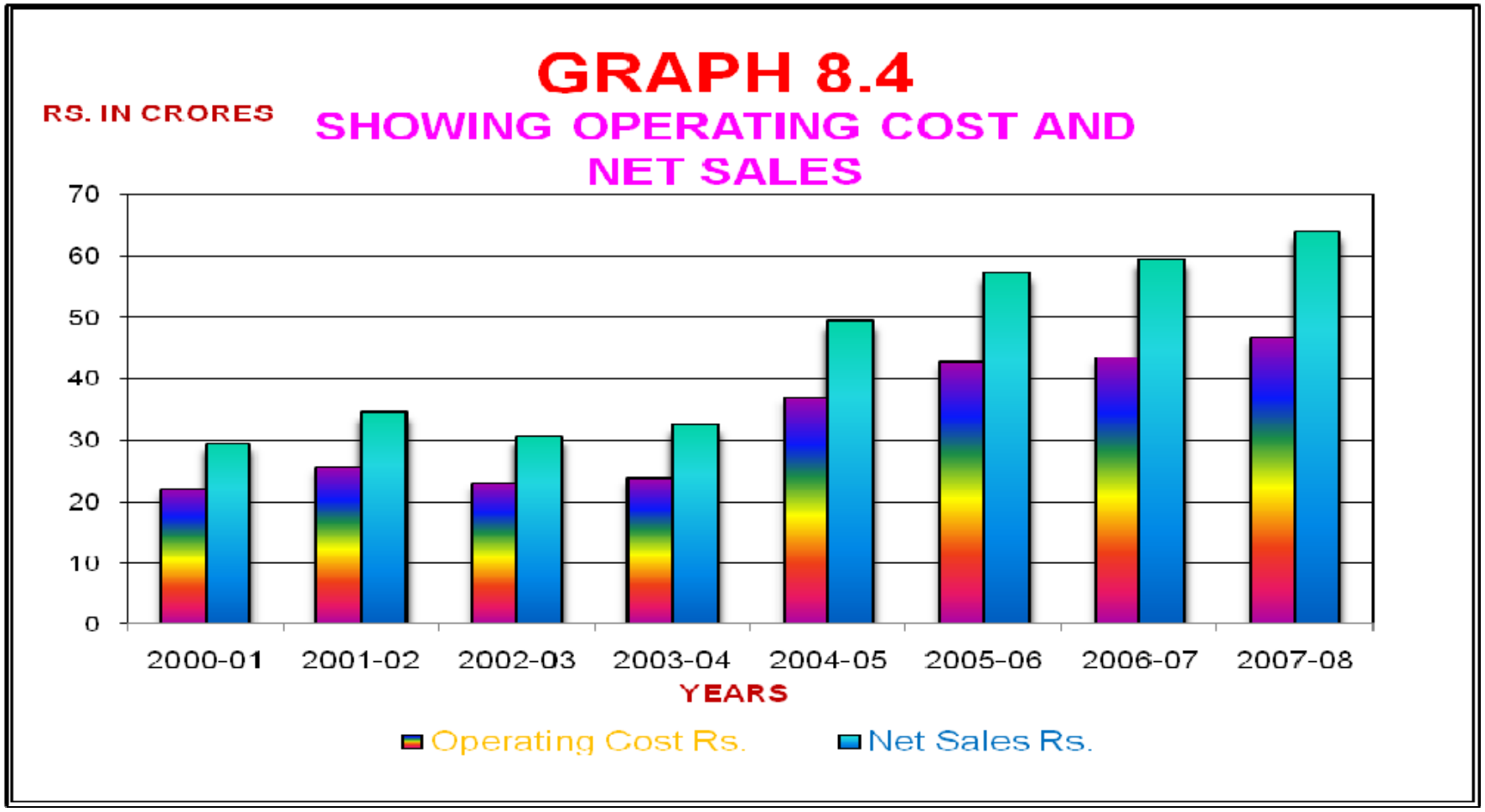
The following are the measures to overcome the difficulties of stagnant operating ratio of oil mills in Solapur city within 8 years i.e. from 2000-01 to 2007-08.

1) The oil mill owners in Solapur city should adopt modern technique and technology for the extraction of oilseeds which leads to decrease the cost of production further helps to increase the operating ratio.

2) For to get lower operating ratio the expansion of sales is also necessary. The oil mills in Solapur city should adopt some new marketing technology for the expansion of sales of their products such as market plan, use of brand name, attractive packing, maintenance of quality of products, to find out new market etc. This leads to decrease the operating ratio.

3) The edible oil and oil cake products of Solapur city are sold at higher prices as compared to the company's edible oil. Therefore, the sale of these oil mills remained low but due to high cost of production and high sold prices the operating ratio is high. Therefore the oil mill owners should try to decrease the prices of their products to expand the sales which lead to decrease of operating ratio.

The following graph 8.4 shows operating cost and net sales of 69 sample oil mills in Solapur city during 2000-01 to 2007-08.



8.9 Operating Profit Ratio:

This ratio establishes the relationship between the operating profit and sales and is calculated as follows:

$$\text{Operating Profit Ratio} = \frac{\text{Operating Profit}}{\text{Net Sales}} \times 100$$

Where Operating Profit = Net profit + Non-operating exps.

\- Non-Operating Income

OR

= Gross profit – Operating exps.

Operating profit ratio can also be calculated with the help of operating ratio as follows:

Operating profit ratio = 100 – Operating ratio

This ratio indicates the portion remaining out of every rupee worth of sales after all operating costs and expenses have been met. Higher the ratio, the better it is.[8]

The following table 8.5 shows the operating profit and net sales of all 69 sample oil mills. It also shows the operating profit ratio during 2000-01 to 2007-08.

Table 8.5

Operating Profit Ratio of all 69 Sample Oil Mills in Solapur City

During the years 2000-01 to 2007-08

Sr. No.	Year	Operating Profit Rs. in Crores	Net Sales Rs. in Crores	Operating Ratio
1	2	3	4	5
1.	2000-01	7.49	29.52	25,37%
2.	2001-02	8.99	34.58	26.01%
3.	2002-03	7.72	30.74	25.12%
4.	2003-04	8.67	32.45	26.71%
5.	2004-05	12.62	49.44	25.53%
6.	2005-06	14.62	57.34	25.49%
7.	2006-07	16.08	59.59	26.98%
8.	2007-08	17.39	64.00	27.17%

SOURCE: Calculated from Field Survey Primary Data.

We get the following conclusions from the above table.

1) The above table shows operating profit and net sales of all 69 sample oil mills. In the year 2000-01 the operating profit was Rs.7.49 crores increased to Rs.17.39 crores in the year 2007-08. This shows an increasing trend of operating profit of all 69 sample oil mills during 2000-01 to 2007-08.

2) Column no. 4 shows an increasing trend of net sales during the years 2000-01 to 2007-08. It was Rs.29.52 crores in the year 2000-01 increased to Rs.64.00 crores in the year 2007-08.

3) The ratio between operating profit and net sales gives us operating profit ratio. In the year 2000-01 the operating profit ratio was 25.37% it increased to 27.17% in the year 2007-08. Column no. 5 shows an increasing trend of operating profit ratio. Operating profit ratio increased during the year 2000-2001 to 2007-08. Therefore we can say the performance of sample oil mills is better.

The operating profit ratio of 69 sample oil mills increased slowly during the period 2000-01 to 2007-08. The growth rate of operating profit ratio is slow because of the following reasons.

Reasons:

1) Purchase of oilseeds by the oil mill owners in Solapur city is one of the important reasons. In the period of 2000-01 to 2007-08 the gross profit is increased slowly and operating expenses increased more so the operating profit is less. The operating profit ratio increased from 25.37% in 2000-01 to 27.17% in 2007-08.

2) The cost of goods sold and operating expenses decreasing slowly therefore it affects on slow increasing of operating profit ratio.

3) The sale of the final product of oil mills in Solapur city increasing but slowly compared to the other edible oil products produced by the different companies entered during 2000-01 in Solapur city. This affects on the slow growth of sales of the product of the oil mills. Therefore the operating profit ratio also increased slowly during the period 2000-01 to 2007-08.

Measures:

Increasing operating ratio shows the good performance of any firm. Therefore, the following measures are to be adopted by the oil mill owners of Solapur city.

1) For to achieve good and an increasing operating profit ratio yearly, oil mill owners should try to expand the sale of their product at higher prices by using modern market technology. This function leads to increase the gross profit, further it leads to increase the operating profit ratio.

2) The purchase of oilseeds is a key feature of the oil mills to achieve higher and higher profit. By crushing quality oilseeds, oil mill owners can achieve a good average production further it leads to increase the total surplus. This automatically helps to increase the operating profit ratio. Therefore, the oil mill owners should purchase quality oilseeds for better performance.

3) The administration expenses – operating expenses should be minimised by the producers to achieve higher surplus. The operating expenses in all the processing fields of oil production such as drying, scrutiny, crushing, packing, advertisement, display, use of market plans, etc. If the expenses on all these are minimised and operated worthily the oil mill owners can get the good surplus which further leads to increase operating profit ratio.

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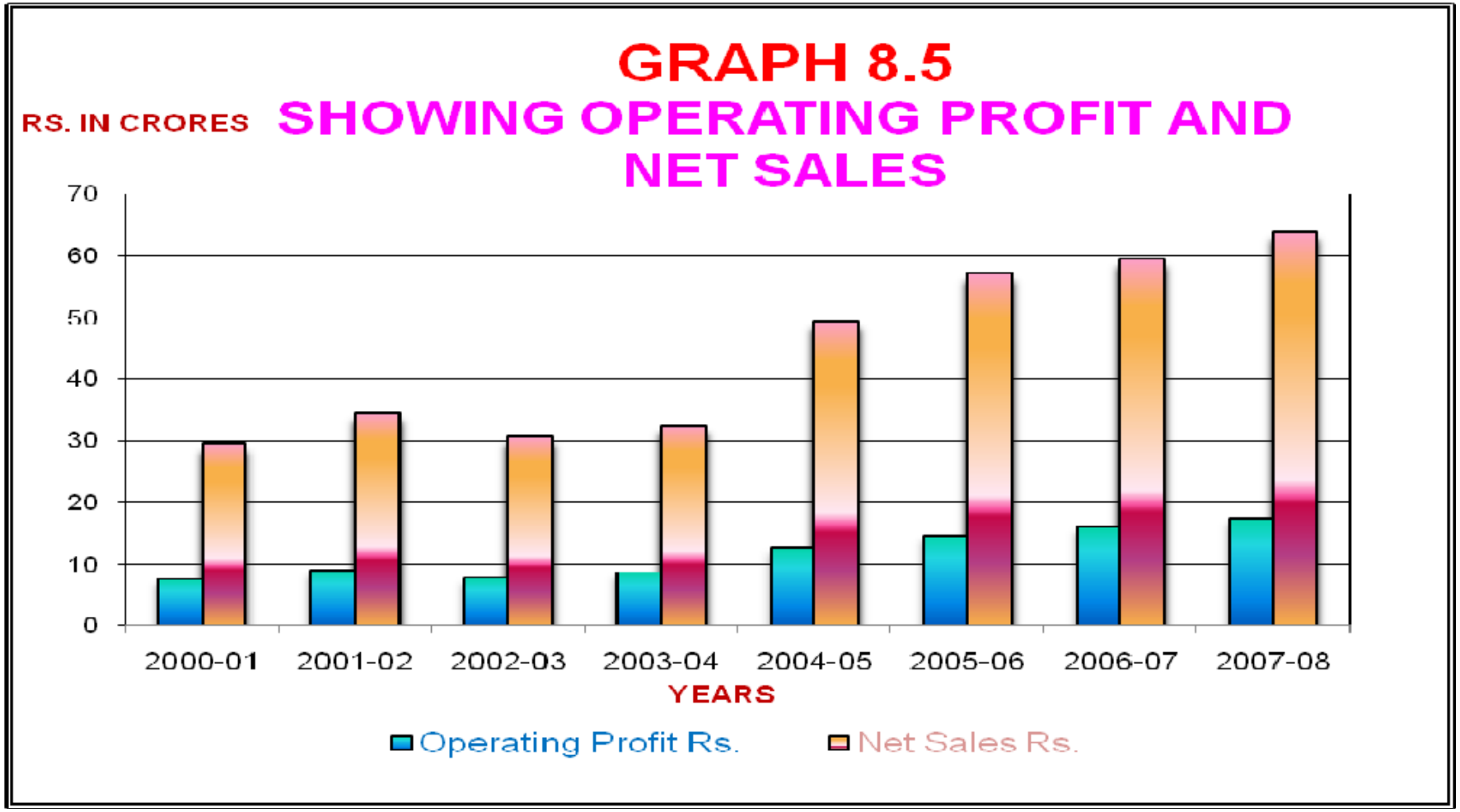
The following graph 8.5 shows operating profit and net sales of 69 sample oil mills in Solapur city during 2000-01 to 2007-08.



8.10 Working Capital Turnover Ratio:

This ratio indicates whether or not working capital (which relates to current assets and current liabilities) has been effectively used in making sales. It is calculated as follows:

$$\text{Working Capital Turnover Ratio} = \frac{\text{Net Sales}}{\text{Net Working Capital}}$$

For the sake of convenience the figure of net working capital (current assets – current liabilities) at the end of the year should be considered. This ratio makes it clear whether the business is being carried on with small or large amount of working capital in relation to sales. A low working capital turnover ratio may reflect an adequacy of net working capital as a result of low turnover of inventory or receivables. In other words, a high ratio may be due to high turnovers of inventory or receivables. Considerable caution should be exercised while interpreting this ratio.[7]

The following table 8.6 shows the working capital ratio of all 69 sample oil mills during the year 2000-01 to 2007-08.

Table 8.6

Working Capital Turnover Ratio of all 69 Sample Oil Mills in Solapur City During the years 2000-01 to 2007-08

Sr. No.	Year	Net Sale Rs. in Crores	Net Working Capital Rs. in Crores	Working Capital Ratio in Time
1	2	3	4	5
1.	2000-01	29.52	7.00	4.22:1
2.	2001-02	34.58	7.71	4.48:1
3.	2002-03	30.74	7.55	4.07:1
4.	2003-04	32.45	7.84	4.14:1
5.	2004-05	49.44	10.45	4.73:1
6.	2005-06	57.34	11.16	5.14:1
7.	2006-07	59.59	12.63	4.72:1
8.	2007-08	64.00	13.78	4.65:1

SOURCE: Calculated from Field Survey Primary Data.

Interpretation:

From the above table it can be seen that working capital turnover ratio is changing significantly over various years. This ratio was 4.22:1 in the year 2000-01, it increased to 4.48:1 in the year 2001-02. It was due to increase in net sales and net working capital. Similarly, this ratio was increased to 5.14:1 in the year 2005-06. It is also due to increase in sales.

In the year 2007-08 the working capital ratio was 4.65:1. It shows an increasing trend of working capital ratio upto 2005-06. More or less working capital ratio increases slowly due to an increase in net sales.

By the experts and the authors of different types of books of Business Management and Managing Accounting the standard working capital turnover ratio is 5:1.

The above table shows slow increasing trend of working capital turnover ratio of sample oil mills in Solapur city. But this ratio is less than the standard ratio of 5:1. It is also observed that the research work the working capital turnover ratio though is not satisfactory but then also it is not bad because it ranges from 4.07:1 to 5.14:1 during 2000-01 to 2007-08.

Reasons:

The following are the different reasons of low working capital turnover ratio.

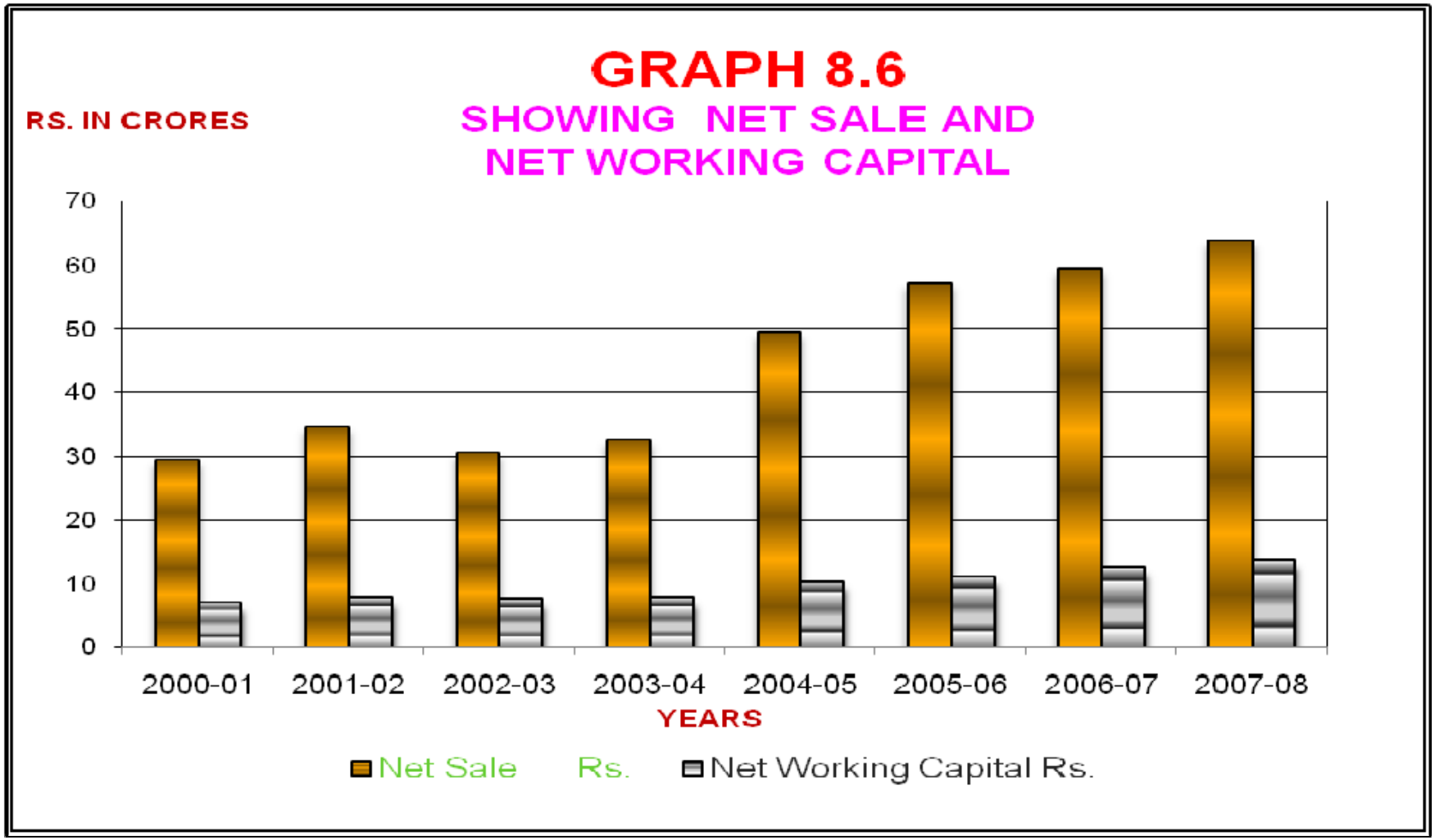
1) The lack of continuous supply of electric power.
2) The deficiency of the skilled labours and technicians.
3) An increase in rate of interest.
4) Competition in purchase and sale in the market.
5) The oil mills depend upon the agricultural output of oilseeds and the agricultural yield depends upon the monsoon.
6) Lack of infrastructure facilities.
7) The traditional and backward tendency of oil mill owners in the business.

All these reasons work as an obstacle in the expansion of the sale of the products of edible oil mills in Solapur city. Therefore working capital turnover ratio remains low during the period 2000-01 to 2007-08.

Measures:

To overcome the above difficulties oil mill owners should adopt modern processing method, employment of skilled workers, use of substitute power for continuous production etc. This leads to increase the sale of the product and further it leads to increase the working capital turnover ratio.

The following graph 8.6 shows net sale and net working capital of 69 sample oil mills in Solapur city during 2000-01 to 2007-08.



8.11 Fixed Assets Turnover Ratio:

This ratio indicates the extent to which the investments in fixed assets contributed towards sales. If it is compared with a previous period it indicates whether the investment in fixed assets has been judicious or not. The ratio is calculated as follows:

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Net Sales}}{\text{Fixed Assets (Net)}}$$

for e.g.

Particulars	1997	1998
Fixed assets at written down value	1,50,000	3,00,000
Sales Less Returns	6,00,000	8,00,000

$$\Rightarrow \quad \text{Fixed Assets Turnover Ratio} = \frac{\text{Net Sales}}{\text{Fixed Assets (Net)}}$$

1997

= 6,00,000 ÷ 150000 = four times

1998

= 8,00,000 ÷ 350000 = 2.6 seven times

There has been a decline in the fixed assets turnover ratio though absolute figures of sales have gone up. It means, increase in the investment in fixed assets has not brought about commensurate gain. However, the results for next 2 or 3 years must also be seen before commencing on judiciousness or otherwise of increase in investments in the fixed assets.

The fixed assets turnover ratio can further be divided into turnover of each item of fixed assets to find out to the extent each fixed assets has been properly used. For example,

$$\text{Plant and Machinery to Turnover} = \frac{\text{Net Sales}}{\text{Plant and Machinery (Net)}}$$

$$\text{Land and Buildings to Turnover} = \frac{\text{Net Sales}}{\text{Land and Buildings (Net)}}$$

Significance:

The ratio measures the efficiency in the utilisation of fixed assets. This ratio indicates whether the fixed assets are being totally utilised.

It is an important measure of the efficient and profit earning capacity of the business. A high ratio is an index of the overtrading while a low ratio suggests idle capacity and exercise investment in fixed assets. Normally a standard ratio is taken as five times.[8]

The following table 8.7 shows fixed assets turnover ratio of all selected 69 sample oil mills.

Table 8.7

Fixed Assets Turnover Ratio of all 69 Sample Oil Mills in Solapur City During the years 2000-01 to 2007-08

Sr. No.	Year	Net Sales Rs.	Fixed Assets (Net)	Fixed Assets Turnover Ratio in Time
1	2	3	4	5
1.	2000-01	29.52	14.54	2.03:1
2.	2001-02	34.58	13.72	2.52:1
3.	2002-03	30.74	14.48	3.07:1
4.	2003-04	32.45	15.12	2.15:1
5.	2004-05	49.44	15.98	3.09:1
6.	2005-06	57.34	16.43	3.49:1
7.	2006-07	59.59	16.66	3.58:1
8.	2007-08	64.00	17.05	3.75:1

SOURCE: Calculated from Field Survey Primary Data.

We get the following conclusions from the above table.

1) The above table shows that the sales of the sample oil mills increased from Rs. 29.52 crores in the year 2000-01 to Rs.64.00 crores in the year 2007-08. The sales of the sample oil mills increased due to increase in production and changing prices.

2) The fixed assets of sample oil mills shown in the column no. 4. There is a slight change in the fixed assets of the oil mills in every year as compared to the sales the change in fixed asset is less.

3) Column no. 5 shows the fixed assets turnover ratio in times. From the years 2000-01 to 2003-04 the fixed assets turnover ratio is varying, from the years 2004-05 to 2007-08 the fixed assets turnover ratio is ranging from 3.09:1 to 3.75:1. It means from the year 2004-05 the oil mill owners utilising the fixed assets efficiently but not satisfactory as compared to the standard fixed assets turnover ratio i.e. 5:1.

The fixed assets turnover ratio of all sample oil mills are less than the standard ratio 5:1. This ratio is increasing slowly but not satisfactorily due to the following reasons.

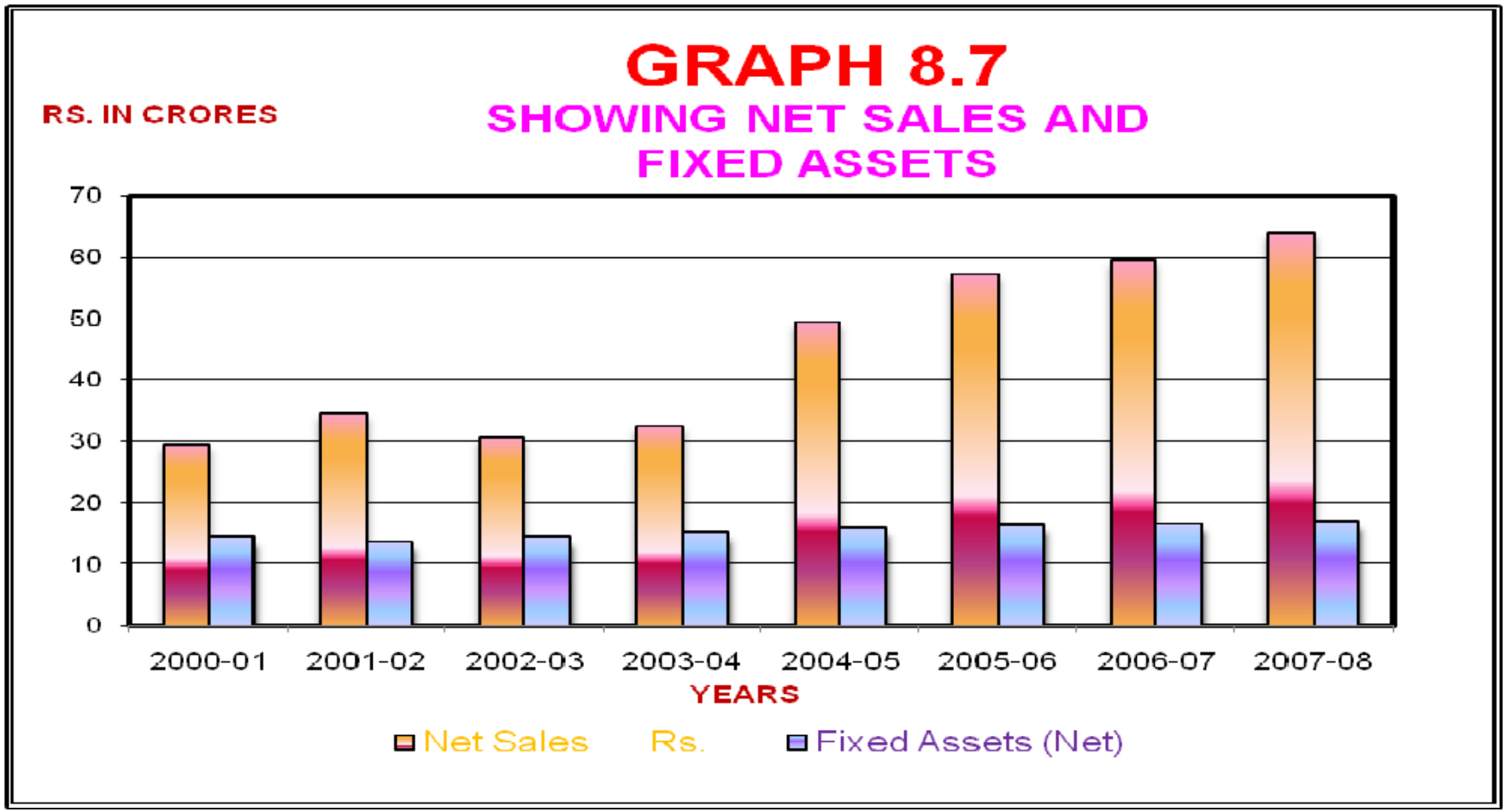
Reasons:

The major reason is this industry is the agro based industry. The production of oilseeds is uncertain. So, therefore there is fluctuating supply of oilseeds in the market. Further the prices are also fluctuating. Due to this it is not possible to run the oil mills continuously throughout the year by the oil mill owners, therefore the fixed assets turnover ratio is low as compared to the standard ratio i.e. 5:1.

Measures:

To overcome the above major difficulty and to achieve satisfactory fixed assets turnover ratio it is necessary to expand the agricultural area under the oilseeds crops. It is also important to make the provision of storage facility of oilseeds. By expanding the agricultural land under irrigation it is possible to continuous supply of oilseeds for the oil mill owners. These measures are not in the hands of oil mill owners but it is a policy matter of the government.

The following graph 8.7 shows net sales and fixed assets of 69 sample oil mills in Solapur city during 2000-01 to 2007-08.



8.12 Total Assets Turnover Ratio:

This ratio is arrived at by dividing sales by the total assets i.e.

$$\text{Total Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Total Assets}} \times \text{Number of times}$$

The ratio indicates the sales generated per rupee of investment in total assets. Thus, it aims to point out the efficiency or inefficiency in the use of total assets or capital employed. Increase in ratio indicates that more revenue is generated per rupee of total investment in assets. Some analysis takes only tangible assets and in that case the ratio will be arrived at by dividing sales by tangible assets only i.e. Goodwill, Patents, Trade Marks, etc. are not taken into account. Normally a standard ratio is taken two times.

The following table 8.8 shows the total assets turnover ratio.

Table 8.8

Total Assets Turnover Ratio of all 69 Sample Oil Mills in Solapur City during the years 2000-01 to 2007-08

Sr. No.	Year	Net Sales Rs.	Total Assets (Net)	Total Assets Turnover Ratio in Time
1	2	3	4	5
1.	2000-01	29.52	32.28	0.91:1
2.	2001-02	34.58	32.71	1.06:1
3.	2002-03	30.74	34.72	0.85:1
4.	2003-04	32.45	36.95	0.88:1
5.	2004-05	49.44	38.83	1.27:1
6.	2005-06	57.34	39.16	1.46:1
7.	2006-07	59.59	40.99	1.45:1
8.	2007-08	64.00	42.17	1.52:1

SOURCE: Calculated from Field Survey Primary Data.

Interpretation:

The above table shows the ratio between sales and total assets of the 69 sample oil mills during the years 2000-01 to 2007-08. The total assets turnover ratio is varying. It is ranging from 0.91:1 to 1.5:1 two times within 8 years i.e. from 2000-01 to 2007-08. From 2004-05 to 2007-08 fixed assets are utilised more as compared to the previous years. It is due to favourable agricultural conditions for agro-based industries. Total assets turnover ratio is not attained upto the norms throughout the 8 years i.e. 2000-01 to 2007-08.

The following are the reasons for low total assets turnover ratio.

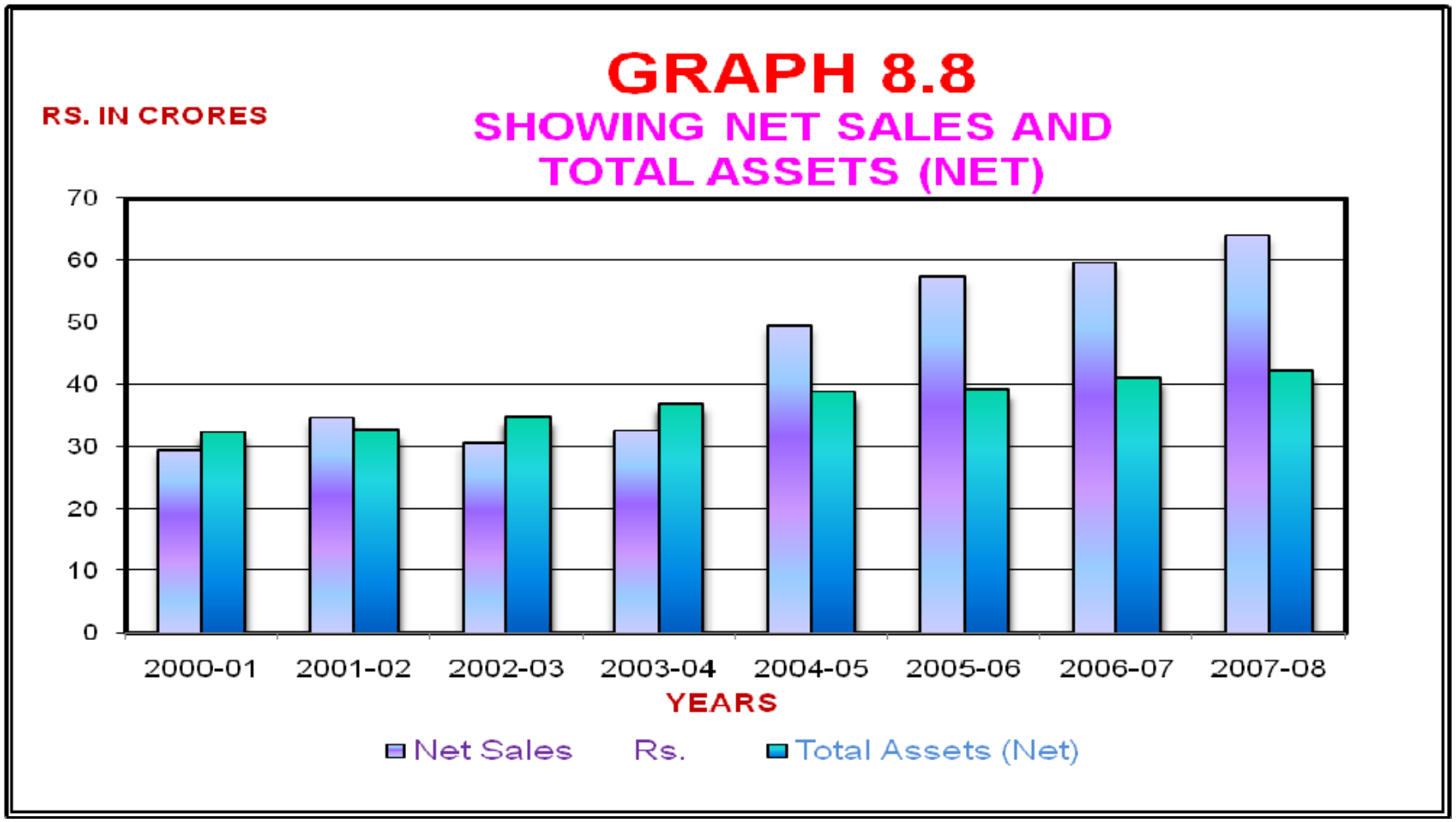
Reasons:

The oil mill owners in Solapur city are using only traditional machineries and equipments. And due to competition by big oil mill industries they cannot make up their minds to generate their rupee in new modern technology and machineries. The oil industry is based on agriculture and it is seasonable. As the turnover of these oil mills stagnant, the oil mill owners are not investing in the assets of their mills which leading to lower total assets turnover ratio.

Measures:

The only measure is to generate the oil mill owners rupees in latest modern technique and technologies, which lead to maximise the turnover by increasing their production simultaneously leading to increase in total assets turnover ratio.

The following graph 8.8 shows net sales and total assets (net) of 69 sample oil mills in Solapur city during 2000-01 to 2007-08. .



8.13 Current Assets Turnover Ratio:

This is calculated through the sales and current assets of production units. If the ratio of these 2 increase it is better for the production unit and vice versa. The current asset is the part of the total assets. It may increase or decrease because it depends upon the size of production or sales of output.[13] It is calculated as follows.

$$\text{Current Assets Turnover Ratio} = \frac{\text{Total Sales}}{\text{Current Assets}}$$

The following table 8.9 shows the current assets turnover ratio of all 69 sample oil mills in Solapur city during 2000-01 to 2007-08.

Table 8.9

Current Assets Turnover Ratio of all 69 Sample Oil Mills in Solapur City During the years 2000-01 to 2007-08

Sr. No.	Year	Total Sales Rs.	Current Assets Rs.	Current Assets Turnover Ratio in Time
1	2	3	4	5
1.	2000-01	29.52	17.73	1.66:1
2.	2001-02	34.58	18.98	1.86:1
3.	2002-03	30.74	20.23	1.52:1
4.	2003-04	32.45	21.83	1.49:1
5.	2004-05	49.44	22.85	2.16:1
6.	2005-06	57.34	22.74	2.52:1
7.	2006-07	59.59	24.33	2.45:1
8.	2007-08	64.00	25.13	2.55:1

SOURCE: Calculated from Field Survey Primary Data.

Interpretation:

The above table shows the ratio between total sales and current assets of all 69 sample oil mills during the years 2000-01 to 2007-08. The current assets turnover ratio is ranging from 1.66:1 times to 2.55:1 times from the years 2000-01 to 2007-08, along with the increasing current assets the sales are also increasing. The ratio between these 2 increased from 2.16:1 to 2.55:1 times from 2004-05 to 2007-08.

But it is not upto the standard norm i.e. 3:1. Therefore, the performance of sample oil mills is not satisfactory.

The current assets turnover ratio of all sample oil mills is low during the period compared with the standard current assets turnover ratio i.e. 3:1 due to the reasons as follow:

Reasons:

1) The purchase of oilseeds is made by the maximum utilisation of current assets by all the oil mills in Solapur city is low due to seasonable supply of oilseeds.
2) The sale of products of oil mills is low during the period 2000-01 to 2007-08. Therefore the current assets turnover ratio is low.
3) The sale of products is made more on credit to sundry debtors as compared to turnover and hence the current assets turnover ratio is low.

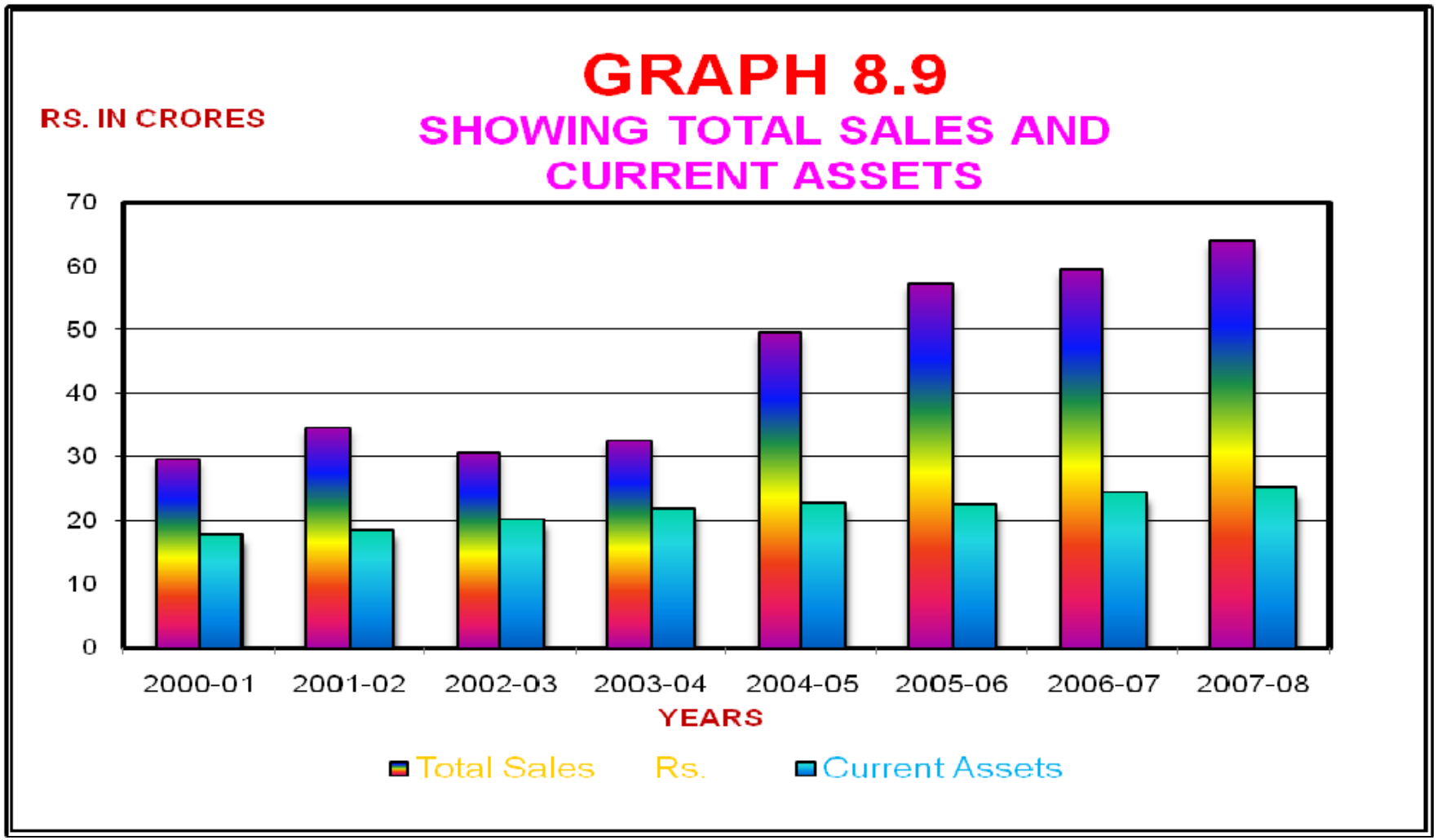
Measures:

1) The sale of products of oil mill should be increased by supplying the products in local markets and state markets by utilising modern technology with increased production which may lead to result in better current assets turnover ratio.

2) The sale of oilseeds should be made by proper utilisation of full available resources and new modern market techniques more on cash basis which leads to minimise sundry debtors simultaneously leading to better current assets turnover ratio.

3) It is observed that the current assets turnover ratio is increasing slowly in the period 2000-01 to 2007-08, but it is not upto the standard norm. For this purpose the oil mill owners should adopt number of facilities for processing and crushing oilseeds by the state govt. and WMDC. In the other words they are expected to achieve tax facilities, storage facilities transportation facilities, market facilities, supply of capital at low rate of interest. All this leads to expand the sale of the product in the market further it leads to increase the current assets turnover ratio.

The following graph 8.9 shows total sales and current assets of 69 sample oil mills in Solapur city during 2000-01 to 2007-08.



8.14 Conclusion:

All the selected 69 sample oil mills are analysed by the different ratios such as current ratio, gross profit ratio, net profit ratio, working capital turnover ratio, fixed assets turnover ratio, operating ratio, operating profit ratio, current assets turnover ratio, total assets turnover ratio etc.

The performance of edible oil industry depends upon the no. of the factors such as the agricultural situation, the consumption of edible oil, process of production, modernization in production system, transportation facility, financial assistance, sources of finance, govt. policies etc. Therefore the edible oil industry runs on the basis of fluctuations of all these factors. So the results of performances of sample oil mills are varying during 2000-01 to 2007-08.

The relation between current assets with current liabilities is analysed through the current ratio. The current ratio of sample oil mills slowly increasing from 2000-01 to 2007-08. It was 1.65:1 in the year 2000-01, increased to 2.21:1 in the year 2007-08. It shows an increasing trend of current ratio of sample oil mills, because of an increasing sales from Rs. 17.73 crores in the year 2000-01 to Rs.25.13 crores in the year 2007-08.

The gross profit ratio of sample oil mills is analysed by the net sales and gross profit. Gross profit ratio of sample oil mills slowly increased and in some period it decreased. It generally remained constant from 8.73% to 8.98% from 2000-01 to 2007-08.

The net profit of sample oil mills shows slow increasing trend from 2000-01 to 2007-08. It is ranging from 5.41% to 6.13%. It shows the slow growth of working of sample oil mills from the year 2000-01 to 2007-08, it is due to fluctuating prices and low supply of edible oilseeds and changing cropping pattern.

The operating ratio, operating profit ratio, working capital ratio, fixed assets turnover ratio, total assets turnover ratio, current assets

turnover ratio are undertaken for analyzing the performance of sample oil mills. The results of all these ratios show a slow growth of sample oil mills in Solapur city during the year 2000-01 to 2007-08.

By the above conclusions we indicate the performance of sample oil mills in Solapur city during the period 2000-01 to 2007-08 in brief as follows:

1) The overall position of current ratio is satisfactory during the period 2000-01 to 2007-08.
2) The gross profit ratio is not satisfactory as compared to standard gross profit ratio.
3) The net profit ratio is moderate in the years under study.
4) The operating ratio is more or less remained constant within 8 years of the study.
5) The growth rate of operating profit ratio is slow during the period of the study.
6) The working capital turnover ratio of sample oil mills during the study period increased slowly but not satisfactory because it is not upto the standard norm.
7) The fixed assets turnover ratio is low due to idle capacity of fixed assets, so it is not satisfactory.
8) The total assets turnover ratio is not upto the norms throughout the period under study.
9) The current assets turnover ratio is not upto the standard norm so it is unsatisfactory.

By the above evaluation of working of sample oil mills through the above ratios we can say the overall performance of oil mills in Solapur city is not satisfactory. The oil mills are developing but not upto the standard norm. Under the study it shows almost all the oil mills are weak in the sense of purchase, sales, finance, processing, modernising etc.

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CHAPTER - IX

MILL OWNERS PROBLEMS AND REACTIONS

9.1 INTRODUCTION:

Government and politicians always blame to the oil businessmen for the disturbances of oil market. The press also neglects the real problems of the oil industry. The real problems of this industry are yet to be studied. It is necessary therefore to identify the real and important problems of this industry.

There are some common problems from the consumers' point of view. They are mainly the price fluctuations and adulteration. Similarly, there are some other problems of this business from the businessmen's point of view.

9.2 MILL OWNERS PROBLEMS:

1) The prices of the edible oils and edible oilseeds are not stable. Number of times they fluctuate within a year. Therefore it is difficult to run the oil mill to the oil mill owners. The prices of oilseeds depend upon the agricultural yields of oilseeds and the speculators. The agricultural output is uncertain. Due to this and speculators there are always fluctuations in the prices of oilseeds and oils. This is a serious problem before the oil mill owners.

2) In the recent days oil mills are facing the problem of low supply of oilseeds as a raw material. After 1991 due to the globalization and free market the international traders, even big agriculturists are exporting the edible oilseeds. This leads to create the low supply of oilseeds. After 2001-02, particularly there is a rapid change in cropping pattern in agricultural sector. Most of the farmers cultivate their farms for

commercial crops, particularly for fruits, sugar cane, etc. This also leads to remain low supply of oilseeds to the edible oil mills.

3) Oil mills in Solapur city are facing the problem of capital. They cannot make easily the provision of sufficient capital for storage of raw material and as working capital. They are not getting sufficient borrowed capital from different financial institutions such as nationalised and co-operative banks, private credit finance companies, money lenders and indigenous bankers easily. Therefore mills cannot store sufficient oilseeds to run the oil mills in un-season period. Small oil mills in Solapur city run only in the season period, further they are not having their own sufficient working capital and also they are not having the solid security to deposit to the banks.

4) It is noticed the superiority of electric motor over the diesel engine. At present, all oil mills are using electric power. As the oil mills are scattered in the city, there are certain technical and financial difficulties in providing an electric current to the oil mills. If an electric current is provided without fixing a transformer, it increases the load on the line and affects the supply in the area. If a transformer has to be fixed, it involves lot of capital expenditure. But this cannot be undertaken in the absence of a definite industrial planning of Solapur.

There is a problem of non-continuous supply of electric power nearly half of the day which affects adversely on the size of the production.

5) Most of the oil mill owners in Solapur city are using the old and out-dated machineries rather than the modern machineries – expellers. Therefore, the oil percentage remain in oil cake is 7 to 8%. Due to lack of capital they cannot use modern expellers in which the oil percentage in oil cake remains 4 to 5%. It has affected unknowingly both quality and quantity of production. In the present days in big cities like Mumbai, Kolkata, Jalana, Chitradurga oil mill owners are using the heavy expellers.

6) Most of the oil mills in Solapur city are located in different areas in the city. The minimum 10 thousand sq. ft. area is required for processing and 10,000 sq.ft. area is required for crushing the oilseeds. Numbers of oil mills are not having required area for processing and crushing. So, mills are facing the difficulties in the process of drying and cleaning oilseeds. This is one of the problems before the oil mills in Solapur city.

7) The oilseeds being the agricultural products are not available for all the months of the year. They are seasonal and yield depends upon the rainfall. So the oil mill owners cannot buy the oilseeds in required quantities as and when they need.

8) There are no sufficient warehouses for storing the oilseeds. The oil mill owners of Solapur city are also having low storage capacity and small godowns. Hence the oil mill owners failed to purchase large quantity of oilseeds

9) There is a scarcity of skilled workers in processing and crushing of oilseeds. Most of the available labours in Solapur city are engaged in power loom and bidi industry. Some labours are migrated from Solapur to big cities like Pune, Nagpur, Nashik and Mumbai etc. So the oil mills are facing the problem of skilled and unskilled labours.

10) The central govt. and state govt. of Maharashtra imposed heavy taxes as excise duty, and purchase and sales tax in the form of VAT. The oil mill owners have to pay the tax on the purchase of oilseeds and again on the sale of the final products such as oil and oil cakes. This creates heavy burden on the oil mill owners and curtail the percentage of profit.

11) The edible oil industry needs clean and purified water for processing and crushing of oilseeds. There is no any facility of such water in Solapur city for oil mill owners. So the oil mill owners have to face the problem of quality production of oil. The bore well water damages the boiler and other parts of the crushing machineries. This is also one of the problems before the oil mill owners.

12) The oil mill owners in Solapur city are facing the problem of competition with the solvent plants in the market. The solvent plants produce refined oil with attractive packings in the market. The oil mill owners cannot follow the packing system easily to sale the edible oil in the market due to non-refined and pressible oil. Without refining, the oil mill owners cannot store the oil for a long period.

13) ‘The edible oil is one of the adulteration commodity’ this wrong assumption is in the mind of consumers and also the govt. officials. There are no protection under the Prevention of Food Adulteration Act and Rules. Therefore, the oil mill owners are in trouble.

14) There is no any centre where research can be done on processing and production of edible oil at district level. The Research Centres provide new techniques and technology through the research for processing and crushing of edible oilseeds. Hence the oil mill owners cannot produce the quality edible oil which is necessary for national and international market.

15) Till today India is facing the shortage of edible oil, as there is no any concrete govt. policy to motivate the oil mill owners for the expansion of their production and sale. The govt. of Maharashtra should provide a special package giving facilities and subsidies to develop the oil mills in the state. Therefore the oil mill owners of Solapur city are facing the problems such as increasing cost of production, strict control of the govt., cutthroat competition in the market and the burden of heavy taxes etc.

16) The transport fare of railway is cheaper as compared to the road transport. There is no rail transport facility particularly for edible oil in Solapur. Therefore mill owner of Solapur city have to bear the heavy road transportation fares. This is one of the problems before the oil mill owners.

17) Some problems were put to the businessmen of this industry for their opinion. 69 sample oil mill owners were interviewed and the following problems raised by them.

1) Idle capacity and scarcity of raw materials.
2) Price fluctuations.
3) Losses and closing of firms.
4) Adulteration in oil.
5) Government controls.
6) Uncertain and unstable government policy.
7) Heavy tax burden.
8) Modernisation of oil mills.

The open alternates with above problems also were given of which there found only 2 problems as open opinions, (1) Tax evasion and (2) Corruption, including these 2 alternates, there are thus, total 10 problems that need deeper analysis.

Table 9.1 shows the weightage of problems in percentage as per opinions stated by 69 businessmen.

Table 9.1

Weightage of Problems in Percentage as per Sample Oil Mills in Solapur City

Sr. No.	Problem	Total Preference	Percentage
1.	Idle capacity & scarcity of raw material	57	82.22
2.	Government controls	57	82.22
3.	Price instability	46	66.61
4.	Heavy taxation	40	57.78
5.	Uncertain and unstable govt. policy	37	53.33
6.	Tax evasion	25	35.56
7.	Adulteration	20	28.81
8.	Corruption	14	20.00
9.	Losses and closing of mills	12	17.71
10.	Modernisation of mills	2	2.22

SOURCE: Calculated from Field Survey Primary Data.

Out of the 10 problems, (1) Idle capacity with scarcity of raw material and (2) Government controls seem to be the main problems as per opinion given by businessmen. Both the problems accounted equal importance of 82.22 percent. Heavy tax burden and unstable government policy are also seem major problems which accounted for 57.78 percent and 53.33 percent weightage respectively. Tax evasion, adulteration, corruption, losses and closing of mills are also the major issues recognised as problems of oil industry. Incidentally, the modernisation of oil mill plants is no more a serious problem for the industry as per respondents' opinion.

9.3 MILL OWNERS REACTIONS:

1) The oil mill owners of Solapur city raised their reactions about the price fluctuations of edible oil and oilseeds. For the continuous supply of edible oilseeds the central and state govt. should implement some motivating plans for the oilseed growers and farmers. The govt. should also implement some concrete actions to control the activities of the speculators of oilseeds. This leads to make available more and continuous supply of oilseeds to the oil mills. Automatically this controls the price fluctuations of edible oils and oilseeds.

2) The central and state governments should implement a concrete export, import programme for oilseeds. The govt. should control the export of edible oilseeds for continuous supply of raw material i.e. oilseeds to the domestic oil mills. The mill owners raised their view about the changing cropping pattern. The state govt. should implement programmes for the fixation of minimum area under cultivation of oilseeds. This leads to make the continuous supply of oilseeds to the edible oil mills.

3) The oil mill owners of Solapur city suggested that a special provision of finance should be made available by the state govt. The state govt. should establish a special financial corporation to provide easy finance at cheap rate of interest for the different purposes such as storage of raw material, construction of building, elaboration of machinery, transportation and crushing etc. to the oil mill owners. It creates the better performance of edible oil mills.

4) The edible oil mill owners raised their views about the continuous supply of electric power. They suggest that electric transformers should be provided through which they can get worth and continuous supply of electric power. The load shading of electric power should be minimised which leads to increase the size of oil production.

5) The oil mill owners of Solapur city raised their views about the application of modern machineries for crushing edible oilseeds. A special fund should be made available for the building, machineries and for modernisation of processing and crushing of oilseeds.

6) The oil mill owners raised their views about the area of processing and crushing of oilseeds. According to them a state govt. should form a special agro-based industrial zone through a special industrial corporation. The corporation should provide sufficient area of land on lease basis at a very cheap rent.

7) According to the oil mill owners for the continuous supply of oilseeds the area of agriculture under cultivation should come into the irrigation and also the large area of agricultural land should be undertaken for oilseed crops. For this the farmers are to be motivated for changing cropping pattern which further leads to create continuous supply of oilseeds to the edible oil mills all the months in the year.

8) The oil mill owners expressed their view about the deficiency of storage facility of raw material. A sufficient storage facility be made available by the Maharashtra State Warehousing Corporation. The Corporation should provide the storage facility at cheap rent not only to the farmers but also to the oil mill owners. So that the oil mill owners can purchase in bulk quantity of oilseeds.

9) The Solapur Oil Mill Association should establish a special training centre for the oil mill workers. The Solapur Oil Mill Association should provide some facilities and amenities to the workers to attract towards edible oil industry.

10) The central govt. and state govt. should not impose heavy taxes on purchase and sale of oilseeds and oil, oil cakes respectively. The edible oil is one of the basic intakes of human creature. There is a shortage of edible oil in the nation in such a situation govt. should motivate the producers by evasion of taxes.

11) The Solapur Municipal Corporation should make a special provision of supply of clean purified and sufficient water throughout the year continuously at lower cost. It further leads to expand the size and quality of production.

12) The Ministry of Industry of the state should give the permission to form a Refinery unit to the oil mill owners in Solapur city on the co-operative basis. It helps to remove the difficulty of competition in the market with the solvent plants and also the refined oil can be stored for a long period of time.

13) For the problem of adulteration of edible oil there should be a special district Adulteration Office. The officers should make the provision of testing of edible oil every year at the district centre. And the purity of edible oil should be declared earliest to the customers in the market with the name of the oil mill owners.

14) According to the oil mill owners the Research Centres of edible oil should be established at district level by the govt. of Maharashtra. It helps to use modern techniques and technology which further helps to produce quality edible oil. This helps to enter the oil mill owners in the national and international market. In the state of Gujrat the govt. established Research Centres at district levels which provides the new findings and technology to the oil mill owners.

15) The govt. of Maharashtra should give a special package providing subsidies, tax evasion, concession in electric charges etc. This helps to develop the edible oil industry and helps to overcome the difficulty of shortage of edible oil in the nation.

16) The railway goods transport fare is cheaper than the road transport. So, the railway junction of Solapur city should make available the facility of transportation of edible oil at least once in a week. It helps the oil mill owners to enter in the state and national market easily.

9.4 CONCLUSION:

In the survey, it is tried to touch upon the important economic aspects of the edible oil mill industry in Solapur city. The survey has revealed the difficulties faced by the industry. Over capacity, existence of value added tax (VAT), lack of electricity and water supply, shortage of capital, difficulties of railway transport are the main problems faced by the industry. If they are tackled properly, the industry will be stabilized and may have a chance of further growth. This may also result in the establishment of some of the new industries linked with this industry in Solapur city.

CHAPTER - X

CONCLUSIONS AND SUGGESTIONS

10.1 INTRODUCTION:

In this chapter we present the summary of the research work and conclusions of the study. This chapter also consists the suggestions to strengthen and recover the economic performance of oil mills in Solapur city. The total 5 hypothesis are also tested in this chapter.

10.2 SUMMARY:

In present research work we analysed the working of edible oil industry in Solapur city during 1990-91 to 2007-08. We studied the different aspects of oil industries in total 10 chapters.

India is one of the important largest agricultural countries in the world. In the year 2007-08 the Indian population reached to 110 crores approximately. An increasing population needs more edible oil in balanced food. The average required edible oil is 11 kg. per year. But the Indian people are consuming average 9 kg. per year. There is a shortage of edible oil for consumption in India. Therefore India imports 5 to 6 million tonnes edible oil every year.

Solapur is one of the biggest cities in Maharashtra having an increasing trend of edible oil business. Recently the edible oil industry in Solapur city is developing but at the same time facing different problems. Therefore, the study of the working of this industry has given more importance.

Solapur is located on the boundary of 3 states such as Andhra, Karnataka and Maharashtra. From Andhra and Karnataka states, the edible oil industry in Solapur can easily avail the raw

material. Therefore this industry is established and slowly developing in Solapur city.

Under the study it is found that the edible oil industry in Solapur city is developing in the sense the number of oil mills increased fastly after 2001-02. But due to the LPG programme and competition of the big edible oil companies these oil mills are facing no. of problems. So now they are weak in production, finance, marketing etc.

Oil mills in Solapur city are undertaken for the study at micro level, through, the different indicators such as finance, production, processing, marketing, employment, market competition, modernization etc. The performance of oil mills is also studied through the ratio analysis. The study revealed the performance of oil mills in Solapur city is not satisfactory. In this study the weakness of oil mills are analysed by the raised problems and reactions of the oil mills owners.

Overall the study reveals the working and performance of oil mills are not satisfactory. The findings and conclusions show that edible oil industry in Solapur city is in critical condition particularly in the recent competitive market. At the end the suggestions are made for strengthening the oil mill business in Solapur city.

10.3 TESTING OF HYPOTHESIS:

In present research work the analyisis and performance of oil mills in Solapur city are studied. The present position of oil mills, market situation for oilseeds and oils, the financial position, employment situation, the overall working of oil mills in Solapur are studied in detail with the help of the various statistical data and the detailed information.

For this research work the accepted hypothesis are undertaken for testing by the following various statistical data and tables.

1. Hypothesis Number 1:

"Oil mill business motivates to increase the crop under oilseed cultivation in Solapur district".

In present research work it is found that the oilseeds cultivation is increased. The area under various oilseeds crops are surveyed for this research work. The data is collected from the district statistical office and agricultural development office of Solapur district. The following table shows an increasing area of oilseed cultivation.

Table 10.1

An increased Area under Various Crops in Solapur District During 2003-04 to 2007-08

(Area 100 Hectares)

Crops	2003-04	2004-05	2005-06	2006-07	2007-08
(A) Oilseeds:					
Groundnut Kharif	88	62	64	73	86
Summer	63	71	278	312	346
(B) Sunflower					
Kharif	325	127	251	294	332
Rubi	185	182	359	412	474
(C) Safflower	614	583	608	739	907
Other Oilseeds	85	57	75	88	96
Total OilSeeds Area:	**1360**	**1082**	**1635**	**1918**	**2241**

SOURCE: Abstract – District Statistical Office and Agricultural Development Office in Solapur district.

The above table shows that the area under groundnut oilseed was 88 hundred hectares and 63 hundred hectares in the year 2003-04 kharif and summer respectively. The area under cultivation in summer season increased upto 346 hundred hectares in the year 2007-08 from 63 hundred hectares in 2003-04. It shows the area under cultivation of groundnut oilseed crop increased.

The area under sunflower oilseed was 325 hundred hectares and 185 hundred hectares in the year 2003-04 kharif and summer respectiely. The area under cultivation in rubi season increased upto 474 hundred hectares in the year 2007-08 from 185 hundred hectares in 2003-04. This shows the area under cultivation of sunflower oilseed crop mostly increased in rubi season.

The area under safflower crop increased upto 907 hundred hectares in 2007-08 from 614 hundred hectares in 2003-04.

The total area under oilseeds increased upto 2241 hundred hectares in the year 2007-08 from 1360 hundred hectares in 2003-04.

By the above table it is proved that oil mill business motivates to increase the crop under oilseed cultivation in Solapur district.

2. Hypothesis Number 2:

“Edible oil industry can give further employment potential to the workers”.

In present research work it is found that the no. of oil mills increased from 66 to 98 in the year 1990-91 to 2007-08. Due

to increased no. of oil mills we find increasing employment opportunities to the labour of Solapur city.

The following table proved that the oil mill business in Solapur city leads to increase the employment opportunity.

Table 10.2

Employment in Oil Mills in Solapur City

During the year 2003-04 to 2007-2008

Sr. No.	Year	Number of Oil Mills	Direct Employment in Oil Mills	
			Male Workers	Female Workers
1	2003-04	92	460	276
2	2004-05	96	480	288
3	2005-06	98	490	294
4	2006-07	98	492	296
5	2007-08	98	499	301

SOURCE: Calculated from Field Survey Primary Data.

The above table shows that in the year 2003-04 there were 92 oil mills consisting 460 male workers and 276 female workers. The no. of workers increased from 460 to 499 in the year 2003-04 and 276 to 301 in the year 2007-08 male and female workers respectively.

The above employment is the direct employment, it means workers actually engaged in the production of oils & oil cakes in the oil mills.

The oil mill business in Solapur city also creates employment opportunities in the field of traders, commission agents, brokers, as a munim and gumasta. The following table shows an increasing indirect employment.

Table 10.3

An Increasing Indirect Employment in Trading/Commission Agencies and in Oil Mills in Solapur City During the year 2003-04 to 2007-2008

Sr. No.	Year	Number of Brokers and Commission Agents	Indirect Employment in Trading/ Commission Agencies and in Oil Mills		Total Indirect Employees in Trading/ Commission Agencies and in Oil Mills
			Number of Munim or Gumasta	Number of Labour/ Porters	
1.	**2003-04**	9	27	45	72
2.	**2004-05**	12	36	72	108
3.	**2005-06**	18	54	90	144
4.	**2006-07**	22	66	132	198
5.	**2007-08**	27	81	162	243

SOURCE: Calculated from Field Survey Primary Data.

The oilseeds as a raw material to the oil mills in Solapur city are mostly supplied through brokers and commission agents. Along with the increasing no. of oil mills the no. of brokers and labours, agents also increased from 9 to 27 in the year 2003-04 to 2007-08. Every broker and commission agent needs munim/gumasta and porters for trading. The no. of porters increased from 45 to 162 from 2003-04 to 2007-08. The no. of gumasta or munim increased from 27 to 81 in the year 2003-04 to 2007-08. All this shows the indirect employment is

increasing. This indirect employment is basically depends upon the oil mill business.

Table 10.4

An Increasing Indirect Employment in Transportation in Solapur City During the year 2003-04 to 2007-08

Sr. No.	Year	Number of Pvt. Godowns	Indirect Employment in Pvt. Godowns	Number of Maharashtra Warehousing Corpn. Godowns	Indirect Employment in Maharashtra Warehousing Corpn. Godowns	Total Indirect Employ-ment in Godowns
1.	**2003-04**	18	108	2	40	148
2.	**2004-05**	36	216	2	62	278
3.	**2005-06**	54	324	4	175	499
4.	**2006-07**	60	360	6	210	570
5.	**2007-08**	80	480	8	245	725

SOURCE: Calculated from Field Survey Primary Data.

The above table proved that the indirect employment in transportation and storage of raw material of oil mills from godowns to oil mills and from place of brokers to godowns increased. Through this way of godowns the total indirect employment increased from 148 to 725 in the year 2003-04 to 2007-08.

The indirect employment also increased in the field of agricultural sector in Solapur district. The area under crop of oilseeds in Solapur district increased. This leads to increase the indirect employment in agricultural sector.

The following table shows an increasing indirect employment in agricultural sector in Solapur district.

Table 10.5

An Increasing Indirect Employment in Agricultural Sector in Solapur District During the year 2003-04 to 2007-08

(Area Hundred Hectares)

Sr. No.	Year	Total Area under Oilseed Crop	Indirect Employment in Agricultural Sector		Total Indirect Employment in Agricultural Sector
			Number of Male Workers	Number of Female Workers	
1.	2003-04	1360	4080	8160	12240
2.	2004-05	1082	3246	6492	9738
3.	2005-06	1635	4905	9810	14715
4.	2006-07	1918	5754	11508	17262
5.	2007-08	2241	6723	13446	20169

SOURCE: Calculated from Field Survey Primary Data.

The above table shows that the indirect employment in agricultural sector in Solapur district increased from 12240 to 20169 in the year 2003-04 to 2007-08. This employment arises only in the rubi and kharif seasons for 1 to 2 months for rural male and female workers in the agricultural field particularly in the harvesting of oilseed crops.

The oil mill business in Solapur city creates direct and indirect employment. Today 499 total male workers and 301 female workers are engaged in directly in the oil mill business. This oil mill business also creates indirect employment in the field of brokers and agriculture. The total direct employment

increased from 736 to 800 in the period 2003-04 to 2007-08 and total indirect employment increased from 12460 to 21137 in the year 2003-04 to 2007-08. By the above tables 10.2 to 10.3 it is proved that the oil mill business in Solapur city creates employment opportunity.

3. Hypothesis Number 3:

"The business performance of oil mills in Solapur city is satisfactory enough".

In present research work all the 69 sample oil mills analysed and evaluated their financial systems through different ratios such as current ratio, gross profit ratio, net profit ratio, operating ratio, operating profit ratio, working capital turnover ratio, fixed assets turnover ratio, total assets turnover ratio and current assets turnover ratio etc. In this study it is found that the performance of oil mills in Solapur city is not satisfactory. The results obtained through the ratio analysis are not upto the standard norm. Therefore the performance of oil mills is weak and not satisfactory. So the govt. of Maharashtra should provide a special programme and policies for the development of oil mills in Solapur.

4. Hypothesis Number 4:

"Oil mills are facing number of problems since globalisation".

In present research work the problems faced by the oil mills are studied through the direct survey and interaction with the oil mill owners, traders, brokers and workers. It is found that oil mills in Solapur city are facing number of problems related to processing, finance, sale of final products, storage of raw

material, problem of cut-throat competition in the market with the edible oil companies, problem of infrastructure, burden of tax, an increasing cost of production, controlled govt. policies, problem of skilled workers, problem of transportation etc.

In this study we mentioned the problems raised by the oil mill owners in the chapter IX. The oil mill owners in Solapur city are facing number of problems particularly after 1990-91. Due to the LPG programme number of big companies entered in this oil mill business. Therefore particularly since 1990-91 the oil mill owners in Solapur city are facing an increasing number of problems. This hypothesis is proved by the analysis presented in the chapter IX in which the real problems raised by the oil mill owners.

5. Hypothesis Number 5:

"Industrial development is must for economic development of the economy in general and a region or a locality in particular".

In present research work it is observed that the different types of industries such as chaddar industry, bidi industry, leather industry, soap industry, textile industry, spinning industry etc. are developing in Solapur city. Along with these industries the edible oil industry in Solapur city is also developing in the form of number.

The following table shows an increasing number of oil mills in Solapur city during the year 1990-91 to 2007-08.

Table 10.6

An Increasing Number of Oil Mills in Solapur City

During the year 1990-91 to 2007-08

Sr. No.	Year	Number of Oil Mills
1.	1990-91	66
2.	1995-96	70
3.	2001-02	81
4.	2003-04	92
5.	2007-08	98

SOURCE: Calculated from Field Survey Primary Data.

The above table shows an increasing number of oil mills in Solapur city during the year 1990-91 to 2007-08. This increased no. of oil mills leads to increase the employment opportunities to the unemployed workers. This also helps to increase the development of infrastructure, market, transportation, agriculture and the level of money income of the people in the society. This business motivates the establishment of the other secondary business such as trading, commission agents, transportation etc. This proved development of oil business to economic development of a particular region of Solapur city.

The growth of oil mill business in Solapur city is slow and steady. If the required developmental facilities are provided to this business in future period then only it helps to increase fastly overall economic growth rate of Solapur city.

10.4 MAJOR CONCLUSIONS:

Our study reveals following major conclusions.

1. Maharashtra state is fourth in the production of oilseeds and acreage in India whereas Madhya Pradesh is first in India. Though India is largest area under cultivation of oilseeds in the world, India is not in a position to meet its entire requirement of edible oils indigenously.

2. It is also observed that out of the total states in India Gujrat, Andhra Pradesh, Tamilnadu and Karnataka are the major states producing the groundnut oilseeds in large quantity. The oilseed soybean is largely cultivated by the states of Madhya Pradesh, Maharashtra and Rajasthan whereas the oilseed safflower and sunflower is cultivated largely in the state of Karnataka, Andhra Pradesh and Maharashtra.

3. It is found that in India presently there are 9026 oil mills producing 6.6 million tonnes oil per year. The Maharashtra is one of the important states in India producing oilseeds and edible oil. Out of total oil mills in India 14% i.e. 1150 oil mills are in Maharashtra. And out of this 40% oil mills are located in the 4 major districts namely Solapur, Latur, Amravati and Jalana in Maharashtra. It shows Solapur is one of the important cities in the production of edible oil in India and in Maharashtra.

4. It is observed that India is facing the deficiency of edible oil. The average required edible oil is 11 kg. per capita per year. But the Indian people are consuming average 9 kg. per capita per year. There is a shortage of edible oil for consumption in India. Therefore, India imports 5 to 6 million tonnes edible oil every year.

5. In the research work it is found that people of different states consume different types of edible oil. The people of Kashmir consume more oil than ghee. At Bengal and Tamilnadu states people are using coconut as edible oil. People of Maharashtra, Gujrat, Karnataka and Andhra states are using groundnut, sunflower and safflower oil. Most of the people of North India are using sesame oil. However, it is true that in almost all the states of India, the people are consuming the oil in large quantity.
6. It is noticed that the monthly per capita consumption expenditure of edible oils increased in Rural and Urban areas in India. It is near about double within 15 years i.e. from 1993-94 to 2007-08. The average consumption of edible oil in urban area increased fastly than the average consumption of edible oil in rural area in India.
7. It is observed that per capita expenditure on edible oil has increased at a faster rate than per capita consumption expenditure on food items and total consumption expenditure in India. As a result the share of edible oils in total consumption expenditure has shown a consistent increase in 70s and 80s. In the total food consumption expenditure the percentage of edible oil consumption expenditure is increasing during 1990-91 to 2007-08.
8. It is observed that the prices of oilseeds are fluctuating in India. In the period of harvest the prices remain low and in the off season the prices go up. This happens due to the activities of the speculators and traders. These people store the oilseeds in bulk quantity in the period of harvesting and d-hourd in the off season. Therefore maximum profit goes in the hands of the speculators and traders.
9. It is observed that lack of adequate irrigation facilities for

oilseeds crops, poor adoption of improved technology of oilseeds production, lack of improved varieties suited to specific conditions, lack of suitable varieties for mixed cropping, non-availability of quality seed of improved varieties to farmers etc. are the reasons of low production of oilseeds in Maharashtra.

10. It is observed that city Solapur is one of the biggest cities in Maharashtra having an increasing trend of edible oil business. But since 10 years the edible oil industry in Solapur city is facing some problems.

11. Present research work reveals that Solapur is the sixth largest manufacturing city in Maharashtra. The industries of Solapur consists textile mills, oil mills, bidi factories, footwear manufacturing, sugar factories, bakeries and furniture etc. Solapur is located at the Boundaries of 3 states such as Andhra Pradesh, Karnataka and Maharashtra. Therefore the oil mill industry is developing in Solapur due to easy availability of oilseeds from the other states.

12. It is observed that the govt. of India and the state Governments implemented the programmes and policies to increase the productivity and the production of oilseeds, the oilseed provided under the scheme of subsidy has effected to have more and more yield of oilseeds. The policies motivate to cultivators of Solapur district to cultivate their land under the groundnut oilseeds. So, the crop of oilseeds is increasing in Solapur district, but the area under oilseed crop is limited compared to the other crops in Solapur district.

13. Proper government controls is implemented in public distribution system so that there would not be any corruption in providing good quality of edible oil to the poor people of the state and so as to the nation.

14. There were 37 small and big oil mills registered with the municipal corporation of Solapur city in 1967-68. It is observed that most of the oil mills were working only in season period. The number of oil mills in Solapur city increased particularly in the period of 1990-91 to 2007-08. It is also observed that an increasing trend of number of oil mills in Solapur city. It reveals that most of the oil mill owners were having big size oil mill machineries with intention to get more percentage of extraction of edible oil from the oilseeds.

15. Out of the total oil mills in Solapur city some oil mills were established under the scheme of unemployment because of its nature as small scale industry. It is also observed that these oil mills are not hereditary but most of them have established by the new and younger generation of today.

16. In the city of Solapur all the oil mills have not the same production capacity and also they do not have the same production machinery. Some mills are having expellers of 4 bolts, some are having 6 to 9 bolts machinery and some are having the large size machinery consisting 12 bolts expellers. It is also seen that these oil mills are not producing the same kind of oil from the same kind of oilseeds. They produce different kinds of edible oil such as groundnut oil, safflower oil and sunflower oil etc.

17. Present research work reveals that in the beginning of the 20th Century edible oil is supplied only by tel-ghani units in Solapur. But recently due to the development of infrastructure in the state and the nation and development in the extraction of edible oil, the tel-ghani production failed in the field of this business. Therefore at present there are only 20 tel-ghani units are in working.

18. Recently in India the maximum edible oil is produced by the modern extraction method such as pressure extraction and solvent extraction. The oil mill owners in Solapur city follow pressure extraction by the expellers machinery.

19. The solvent extraction method is followed by the big edible oil companies. In Solapur city there were no any solvent extraction plants.

20. It is also observed that the traditional tel-ghani units are producing only safflower oil by crushing the safflower oilseeds rather than the groundnut, sunflower and other oilseeds. The production of edible oil through ghanis is very low as compared to the edible oils produced by the expellers.

21. Present study reveals the production capacity of different types of oil mill expellers such as a) 18" x 4", b) 24" x 4", c) 27" x 5" d) 33 x 6". The most of the oil mill owners in Solapur city are using the 'D' type of expellers with intention to produce more edible oil by crushing large quantity of oilseeds in a day.

22. It is observed that the number of oil mills increased from 66 to 98 during 1990-91 to 2007-08 respectively. The increase in number of oil mills in Solapur city was slow and steady. It shows that the edible oil production business is developing slowly. The traditional tel-ghani units are decreasing due to the difficulties such as competition with big oil mill owners, difficulties in the supply of raw material, competition with the branded, imported palm and packed edible oils of the companies in the market, the problem of finance and skilled labours.

23. It is observed that most of the oil mill owners in Solapur city are not using the modern technique, technology and

machinery to extract the oilseeds. Therefore, they are facing the problem of increasing cost of production.

24. It is noticed that in fixed and working capital the investment made by the oil mill owners is very low. Therefore it affects on the production of edible oil and oil cakes. The provision of finance from the different financial institutions such as KVIC, Co-Op. Banks, MSFC, Nationalised Banks is not sufficient and satisfactory.

25. Present study reveals that the oil mills in Solapur city are crushing only the groundnut, sunflower oilseeds rather than the other oilseeds such as linseed, sesame, cotton seed, mustard and soybean due to the non-availability of the above said oilseeds in the market of Solapur city.

26. It is observed that a special agro area is provided by the Agricultural Produce Market Committee to the oil mill owners of Solapur city. But this area is not sufficient and also not providing the satisfactory infrastructural facilities to the oil mills, such as road, water facility, drying of oilseeds, storage facility and transport facility etc.

27. In present study it was noticed that there is a problem of skilled workers particularly a boiler attendant. Unskilled labours are always employed in daily wages and a skilled labour boiler attendant is employed on monthly wages. The labours work for 8 hours. Male labours receive Rs. 60 to 70 Rs. for each shift in a day whereas in case of female workers they get their wages at the rate of Rs. 50 to 60 for each shift in a day.

28. The total number of female workers is 270 and 645 male workers in the oil mills in Solapur city.

29. Female workers are mainly employed for feeding the oilseeds to the expellers and to remove the oil cakes, however female workers not do the heavy and bulky work. The workers are not educated and trained.

30. It is observed that the production of edible oil in Solapur city increased from 1990-91 to 1994-95, it decreased in 1995-96 due to low rain fall and remained constant upto 1998-99 and again increased from 2000-01 to 2007-08 upto 5.2 million tonnes. An increase in edible oil production by the oil mills of Solapur city is not satisfactory to meet the increased demand.

31. It is also observed that since 1990-91 the production of edible oil and oil cakes by tel-ghani increased from 1990-91 to 1994-95. After that upto the 2007-08 the production decreased due to the competition with the oil mills in Solapur city.

32. Present study reveals the system of sale of edible oil in the market. Big oil mill owners supply their products to big cities in Maharashtra to the big traders and also supply to the brokers of outside states. The small oil mill owners supply their products directly to the consumers, brokers and traders in the local market.

33. The oil mill owners purchase the oilseeds from brokers. The farmers from Solapur district bring oilseeds in A.P.M.C. Market of Solapur and it is sold through broker. Most of the oilseeds are made available by the traders out of the state of Maharashtra and traders from Karnataka and Andhra Pradesh states bring oilseeds directly to the brokers of Solapur market.

34. It is observed that the oil mill owners in Solapur city sold their products in the wholesale and retail market directly and through commission agents within and outside the states. The oil industry in Solapur city is mostly small scale industry,

therefore the oil mill owners of such industry do not find a international market for their products. They produce in a small quantity. Their financial position is also not sound. Therefore these oil mill owners are not in the international market.

35. Present research work reveals that the prices of oils and oilseeds are not stable because it depends upon rainfall and agricultural yield productivity and also depends upon the cultivation area under oilseeds. If the cultivation area under oilseeds increases it leads to decrease the prices of oilseeds and oils in the market and vice-versa.

36. It is observed that the oil mill owners in Solapur city are not using the modern management, modern techniques and technology in production and further they are not operating all the market tricks and related functions efficiently and effectively. Therefore they are facing the problem of high cost of production and low profit.

37. It is observed there is no sufficient storage facility for oilseeds, to the oil mill owners in Solapur city. The oil mills are facing the shortage of raw material for crushing in off-season period.

38. During the survey it is noticed that almost all the mills with machineries have been insured. This is how the insurance has created confidence in the mind of the oil mill owners for the establishment of oil industries and to operate them. The insurance has thus played an important role for the development of the oil industry in Solapur city.

39. It is observed that all transactions in respect of the oil industry either of the purchase of raw materials or of the sale of the finished products such as oil and oil cakes are carried out through the middlemen who are called the agents. These

agents are getting their remuneration by way of commission. The agents are appointed either for certain markets or for certain territorial jurisdiction. How much commission is to be given is also determined by the party.

40. The gross profit ratio of sample oil mills is analysed during the year 2000-01 to 2007-08. It generally remained constant from 8.73% to 8.98%. The gross profit ratio is not satisfactory as compared to standard norms of gross profit ratio i.e. 20%.

41. It is observed that the Fixed Assets Turnover Ratio is low due to idle capacity of fixed assets so it is not satisfactory. It was ranging from 2.03:1 for 2000-01 to 3.75:1 for 2007-08. It was not upto the standard norm i.e. 5:1.

42. It was noticed that the Total Assets Turnover Ratio is varying. It was ranging from 0.97 to 1.5 within 8 years i.e. from 2000-01 to 2007-08. It was not upto the standard norms i.e. two times.

43. Present study reveals the performance of sample oil mills through the Working Capital Turnover Ratio. The Working Capital Turnover Ratio is not satisfactory because it is not upto the standard norm i.e. 5:1.

44. The Operating Profit Ratio of 69 sample oil mills increased slowly during the period 2000-01 to 2007-08. The growth rate of Operating Profit Ratio is slow ranging from 25.37% to 27.70% in the period 2000-01 to 2007-08. It shows more or less it remained constant.

45. It is observed that the Net Profit Ratio of oil mills is not increasing fastly & remains from 5.21% to 6.23% within 8 years during 2000-01 to 2007-08. It is not satisfactory due to slow growth of Net Profit Ratio. Generally, it should be progressive and more than 10%.

46. The performance of sample oil mills was analysed through the different ratios. The overall performance of oil mills in Solapur city is not satisfactory. The oil mills are developing but not upto the standard norm. Under the study it shows almost all the oil mills are weak in the sense of purchase, sales, finance, processing, modernizing etc.

10.5 SUGGESTIONS:

1. Finance:

a) A separate financial policy is to be chalked out under the govt. of Maharashtra programme to provide the sufficient loan & capital with minimum rate of interest. The bankers must be asked to provide loans under the most favorable terms to meet the capital problems of the oil industry.

b) A special financial policy of the government of Maharashtra should be provided for the elaboration of modern machineries, for the stock of edible oilseeds and working capital must be supplied on personal security of the oil mill owners.

c) The central govt. should establish a special financial commission as KVIC. This commission is expected to provide finance at low rate of interest for the various purposes to the edible oil industry.

2. Oilseed Production:

a) The edible oil industry is basically depends upon the production of oilseeds. The state govt. should form a separate policy for the farmers in the state which further motivates the farmers to produce oilseeds. The govt. should provide at district levels a special intensive package for the farmers which help to increase the production and productivity of oilseeds.

b) That the govt. must purchase oilseeds, and store in the separate warehouses and supply them at proper prices as required by the oil mill owners. This is how the availability of raw materials is guaranteed so that, the production is kept continued throughout the year. This further helps to overcome the shortage of edible oil.

c) That the import-export policy of oilseeds and edible oil must be suitable to promote the oil industries in India. To make the continuous supply of edible oilseeds to the oil mill owners, the export of oilseeds should be restricted by the govt.

3. Tax:

The oil mill owners in Solapur city are under the burden of heavy taxes such as Excise Duty, Prof. Tax, VAT, Turnover Tax, Income Tax imposed by the state and central govt. The central and state govt. should not impose heavy taxes on purchase and sale of oilseeds and oil, oil cakes respectively. The edible oil is one of the basic intakes of human creature. There is a shortage of edible oil in the nation in such a situation govt. should motivate the producers by evasion of taxes.

4. Insurance:

The occupation of oil industry is mostly run on the low margin of profit. So the oil mill owners are not in a position to take the insurance policy at the higher premium. So the govt. must reduce it and fix the low premium to induce the oil mill owners to insure the industry and to protect their interest from accidental losses.

5. Research Centre:

The oil mill owners in Solapur city are using the old techniques and technologies for crushing of oilseeds. The govt. of Maharashtra should establish a separate research centre at district levels. The oil mill owners will get the modern techniques and technologies by the research centres. It further helps to increase quality and the quantity of the product and the oil mill owners in Solapur city can face the problem of competition with the solvent plants in the market.

6. Infrastructure:

a) The railway goods transport fare is cheaper than road transport. So the railway junction of Solapur city should make available the facility of transportation of edible oil at least once in a week. It helps the oil mill owners to enter in the state and national market easily.

b) The established agro-industry area for oil mill owners in Solapur city is not providing sufficient and all the infrastructural facilities satisfactorily. The state govt. should form a special agro-based industrial zone through a special industrial corporation. The corporation should provide sufficient area of land on lease basis of a very cheap rent. Govt. of Maharashtra should form SEZ for this industry and for agriculture in Solapur district.

c) The Solapur Municipal Corporation should make a special provision of supply of clean, purified and sufficient water throughout the year continuously at low cost. It further leads to expand the size and quality of production.

d) That at present, there is no regular supply of the electricity. Therefore, the problems of the production of oil are irregular. The oil mill owners fail to use the full capacity of expellers. Therefore, to keep the even production, there must be constant and without interruption supply of electricity to the oil industry. Special provision is to be made for the same.

7. District Adulteration Office:

There is no any provision of testing of edible oil at district level in Solapur. Therefore for the problem of adulteration of edible oil there should be a special district Adulteration Office in Solapur. The officers should make the provision of testing of edible oil every year at the district centre and the purity of edible oil should be declared earliest to the customers in the market with the name of the oil mill owners.

8. Market:

a) The Ministry of Industry of the state should give the permission to form Refinery unit to the oil mill owners in Solapur city on the co-operative basis. It helps to remove difficulty of competition in the market with the solvent plants and also the refined oil can be stored for a long period of time.

b) Homogeneity is natural and requires no publicity or selling cost while differentiation in the similar goods requires publicity and sell cost, where production,

techniques are very simple. Consumers have to bear overburden of higher price under monopolistic or differentiated competition than under perfect or homogeneous competition branded double filtered oil is being sold at higher prices than the product of oil mills. To overcome this difficulty and to remain in the competitive market, oil mill owners should follow the ways of branded and 'AGMARK' oil to sell in the market.

9. Training Centres:

a) There should be a separate training and guidance centre for the oil mill owners, traders, and farmers which create an appropriate co-ordination among them.

Training to the oil mill owners should be given on new techniques and technology, modern management etc. in the process of production.

The provision of training for the farmers particularly to the oilseed growers should be made available for modern cultivation system.

Further it develops the area under oilseeds cultivation and the production and productivity of oil and oil cakes.

b) There is a need of skilled laborers. The proper training is to be given to them. However, the Solapur Oil Mill Association should form special training centre for oil mill labours giving some facilities. It helps to make the sufficient supply of skilled workers to the oil mills in Solapur.

10. Government Policies:

a) The rules and regulations for registration and for formation of oil industry are to be eased suitably to the large extent.

b) The land and area is to be demarked as a separate zone SEZ under the town planning for oil industry in each district.

c) That the govt. of Maharashtra must supply the oilseeds to the oil mill owners under levy system.

d) That the govt. must control the rules and regulations and to co-relate the demand and supply of oil. This helps to keep the prices constant and stable throughout the year.

e) The small oil mill owners who invest the capital upto 10 lakhs must be exempted from all taxes such as local taxes, license fees, market cess, excise, value added tax and Income tax.

f) There are some oil mills which have stopped the production. In such cases, the govt. must appoint a Expert Committee to study their problems and find out measures to protect them. The necessary relief of all sorts including rebate and subsidies must be extended to them.

11. Solapur Oil Mill Association:

The Solapur Oil Mill Association should provide some facilities and information such as current market situation, facility of infrastructure, information about the government's changing rules and regulations, industrialization and internal and external economies. It helps to develop the oil mill industry in Solapur city in all sense.

That the above suggestions are to be considered to promote and develop the oil industry and to meet the burning problems of edible oil to the satisfaction of the oil mill owners and also of consumers in Solapur city.

10.6 SUMMING UP:

In present research work it is found that the consumption of edible oil in India is increasing fastly than an increase in edible oil production. There is a deficiency of edible oil for Indian people for consumption. Therefore the govt. of India is importing 5 to 6 million tonnes edible oil every year.

The study revealed that the oil mill business in Solapur city has an ancient and long historical background. This is one of the important industries in Solapur. After 1990-91 due to the global market, number of big companies entered in this business. And at the same time due to the slow growth of oilseed production, agriculture sector and a cutthroat competition in the market oil mills in Solapur city are facing number of problems. So their performance is weak. If the govt. of Maharashtra provides financial and other socio-economic facilities to these oil mills through the different developmental policies then only the oil mill business in Solapur city will strengthen. At the end we would like to say if oil mills are facilitated through the special packages by the state govt. and co-operative sector then only it is possible to make the real rural development in India and then only the slogan of Mahatma Gandhi i.e. “Rural development is the backbone of overall economic development of India” will come under the truth.

APPENDIX

"THE WORKING OF EDIBLE OIL INDUSTRY IN SOLAPUR CITY IS NOT SATISFACTORY DURING 1991 TO 2008"

QUESTIONNAIRE-I
(FOR EDIBLE OIL MILL)

1) Name of the Oil Mill Owners : _____

2) Name of the Firm : _____

3) Year of the Establishment : _____

4) Location of the Oil Mill : _____

5) No. of Expellers : _____

6) Size of Crushing Expellers : 24 x 4 / 27 x 5 / 33 x 6

7) Types of Crushing Oilseeds : Groundnut/Safflower/Sunflower

8) Yearly Working Days : _____

9) Crushing Capacity : _____
(Per Day Per Quintal)

10) Actual Crushing in a Day : _____

11) Use of Elevator : Yes / No

12) Availability of Dryer Machine : Yes / No

13) Stock of Oil at Week End : _____ (Quintal)

14) Stock of Oil Cake at Week End : _____ (Quintal)

15) No. of Workers : Male ☐ Female ☐

16) No. of Skilled Workers : Male ☐ Female ☐

17) No. of Munims or Gumasta : _____

18) How much is the daily wages to the workers? : Male ☐ Female ☐

19) Are you having your own Water Facility for processing? : Yes / No

20) Are you having your own Transport Facility? : Yes / No

21) Are you having your own Godown for Storage? : Yes / No

APPENDIX

QUESTIONNAIRE-II
(FOR EDIBLE OIL MILL OWNER)

1) Name of the Oil Mill Owners : _____

2) Name of the Firm : _____

3) Address of the Oil Mill : _____

4) Residential Address of the Oil Mill Owner : _____

5) Phone / Mobile No. : _____

(PRODUCTION)

6) Yearly Purchase of Oilseed : Direct / Through Brokers

7) Total Crushing of Oilseed (in a year) : _____ (In Tonnes)

8) Total Production of Edible Oil (in a year) : _____ (In Tonnes)

9) Total Production of Oil Cake (in a year) : _____ (In Tonnes)

10) Are you having Oilseed Processing Unit? : Yes / No

11) Daily Sale of Oil : _____ (In Quintal)

12) Daily Sale of Oil : _____ (In Quintal)

13) Mill runs : Seasonable / Whole Year

(COST OF PRODUCTION)

14) Cost of Crushing of Oilseed (Per Quintal) : _____

A) Fuel : _____

B) Transport Charges : _____

C) Wages : _____

D) Maintenance Charges : _____

E) Electric Power Charges : _____

F) Taxes : _____

G) Selling Cost : _____

(CAPITAL & INVESTMENT)

15) Required Capital for Installation of Machinery & Factory Building : _____

16) Working Capital for Crushing of Oilseeds (Yearly) : _____

17) Investment in Stock of Raw Material : Yr.___ Tonne ____Rs._____

18) Investment in Infrastructure : _____

(LOANS)

19) Have you taken any loan? : **Rs.**

From

A) Nationalised Banks : _____

B) Co-Operative Banks : _____

C) Finance Company : _____

D) Money Lenders : _____

E) WMDC : _____

F) State Indust. Finance Corpn : _____

D) Private Loans : _____

(LICENCE)

20) Are you having licence? : _____

A) Corporation Licence : Yes / No

B) Food & Drug Office Licence : Yes / No

C) A.P.M.C Licence : Yes / No

D) Purchase & Sale Licence (A.P.M.C.): Yes / No

E) Shop Act Licence : Yes / No

F) Factory Act Licence : Yes / No

G) Licence of Pollution : Yes / No

(INSURANCE)

21) Is the factory has been insured? : _____

22) If yes,name of the Insurance Co.:

23) Insured Amount :

24) Amount of Premium is Rupees :

25) Period of Insurance :

(PROBLEMS OF THE OIL MILL OWNER)

26) Is there any problem of supply of Electric Power? : _____

27) Is there any problem of market competition? : _____

A) Purchase

B) Sale

C) Stock

28) Is there any problem of infrastructure? :

29) Is there any problem of getting Capital? : :

30) Are you having any problem with solvent plants in the market? :

31) Is there is any problem of getting skilled Workers? :

(RECTIONS OF THE OIL MILL OWNER)

_____

_____

_____

_____

_____

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_____

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