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CHAPTER - 4.

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PROCESSING AND MARKETING OF DAL IN  
BARS I TOWN.

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- CHAPTER - 4 -

- : PROCESSING AND MARKETING OF DAL IN BARSII TOWN : -

I

DAL PROCESSING

Foodgrain processing involves changes in the form of the grain. Food grains are processed to make them more edible, more palatable and in some cases to help preserve them. Pulses are an important component of the foodgrains regularly consumed by the people. A part of them is used in the diet in unbroken form. However, a large part ~~of~~ *is* consumed by using them in broken form, called in local language as 'dal'. Traditionally, the dal-making activity was fully a domestic activity pursued by each household. But with the ushering in of the modern era in our country, the activity was gradually commercialised. The venue was shifted from house to factory and human labour was displaced by machine work. Refinements in processing work were carried on in the course of time. Ultimately, the dal-making as a regular household activity almost disappeared and now everybody, rich or poor, relies almost completely on the market for his requirement of dal. This transformation has boosted the mill activity for a sustained growth.

The principal stages in dal processing are drying, cleaning, parboiling, husking and splitting, separating, polishing and grading. Here dal processing is concerned primarily with commercial processing and the activity is performed neither by the grain producers nor by the consumers.

Dal processing plants are subject to considerable processing and storage work. The processing methods are being improved to adopt new technique so as to reduce mill losses and processing time and thereby get larger percentage of dal yield.

Dal-making, whether at home or in mills, involves different activities. There are seven major steps in pulses processing depending upon the methods used. They are as follows :

1. Drying : Extraction of moisture.
2. Cleaning : Removal of foreign bodies from raw materials.
3. Parboiling : Soaking and heating of pulses to impart a desired flavour and to increase outturn.
4. Husking and splitting : Removal of husk from the pulses raw material and splitting the whole pulse into dal.
5. Separating : Separation of the parts that have been removed from the grain. Removal of bran and germ from the pulse grain.
6. Polishing : Edible oil polishing to first grade dal product.
7. Grading : Separating pulses by size or by grades.

Details of the processing work is in mill follow.

#### 1. DRYING .

There are two method of drying. One sun drying and second mechanical drying. Both the methods have their own advantages as well as disadvantages.

(A) Sun Drying Method.

Sun drying starts with the standing crop continues in the stock and is usually completed in drying yard. Sun drying has advantage of being cheap and quick. Its disadvantages is sizable losses in drying yards or drying shades from birds and rodent. Sun drying is too rapid heating but mostly dependent upon the weather and contamination.

(B) Mechanical Drying Method.

Mechanical drying involves forcing heated or unheated air through dryer. It usually takes 2 or 3 passes through dryer to attain this level because of the time it takes for the interior moisture to migrate to the husk. The disadvantage of mechanical drying is its higher cost of production. The advantages, on the other hand are : (1) reduced shade or field losses, (2) increased outturn of head pulses and (3) possibility of drying even in rainy season and chilly wheather conditions.

2. CLEANING.

At the time of harvesting foreign bodies like small stones, earth particles etc. get mixed in the pulses raw material. Such unwanted contents need to be removed before the pulse flow for splitting. The foreign materials are removed automatically with the help of roundshaped sieves or vibrating ('dugdugi') sieves and then the cleaned raw material is carried to the next stage in the processing activity.

### 3. PARABOLLING.

The cleaned raw material is dumped into tempering water bins for 8 to 24 hours to toughen the outer coat and mellow the endosperm. This is followed by parboiling process which involves soaking and heating the raw material to impart desired milling, improve storage life, and help the pulses in preserving vitamins and protein.

### 4. HUSKING AND SPLITTING.

It involves first of all removing outer coat of pulses and then breaking the whole pulses into two parts. There are two different methods of splitting - power milling method and roller milling method. The method used depends on the capital costs, capacity of production of the producer, availability of raw materials, by product value, equipment associated losses and milling cost. The power milling method is time consuming and hence costlier. On the other hand, the roller milling method is favoured largely on account of its speed, turnout at relatively low cost and use throughout the year. The modern pulse roller mill consists of pair of rotating rollers within which the pulses are split. The shift roller minimises the breakage into bran. Hence, the main advantage of the roller system is a high percentage of outturn of intact dal to the extent of 80 to 85 percent and at the most 5 to 15 percent of bran content. The only major problem with this method is frequent replacement of the rollers.

5. SEPARATION.

The splitting process is followed by a process to separate the various products. The cattle feed and bran of the dal are separated from the intact dal in the purifying unit. For separating the cattle feed, open air fans are used.

6. GRADING.

Grading involves separating manufactured dal according to its size. This is done by using sieves of different operation sizes. Dal containing small broken pieces is branded as of ordinary quality; while the one with comparatively bigger broken pieces is graded as of second quality. The first grade product is polished and is without broken pieces.

7. POLISHING.

Polishing the intact dal product is a process introduced in recent years to meet the demand of particularly the elite consumers. Only the first grade dal is involved in this kind of processing. The work is like this. There is an oil-can placed above the pipe through which oil percolates very slowly to polish the product. Dal is carried through an elevator to the point of polishing and the percolated edible oil is automatically coated to the unpolished first grade dal. For polishing a quintal of tur dal, 250 to 300 grams of edible oil is used. Generally, sunflower oil, which is cheaper than any other edible oil, is used for polishing. The polished dal can be cooked earlier than the unpolished one. Polishing

is the end of the processing activity. The product is then packed into gunney bags, stored and sent to the market as and when needed.

#### METHODS OF PROCESSING.

There are two methods of dal processing : 1) power method, and 2) roller method. The former was used upto nineteen sixties. After the evolution of new technique in the processing of dal, the roller method came in vogue. The power method is more expensive than the roller method as it needs more labour power than the latter. Moreover, urgent and heavy demand of the consumers cannot be met quickly because of its low productivity. The power method, therefore, is costlier and time-consuming.

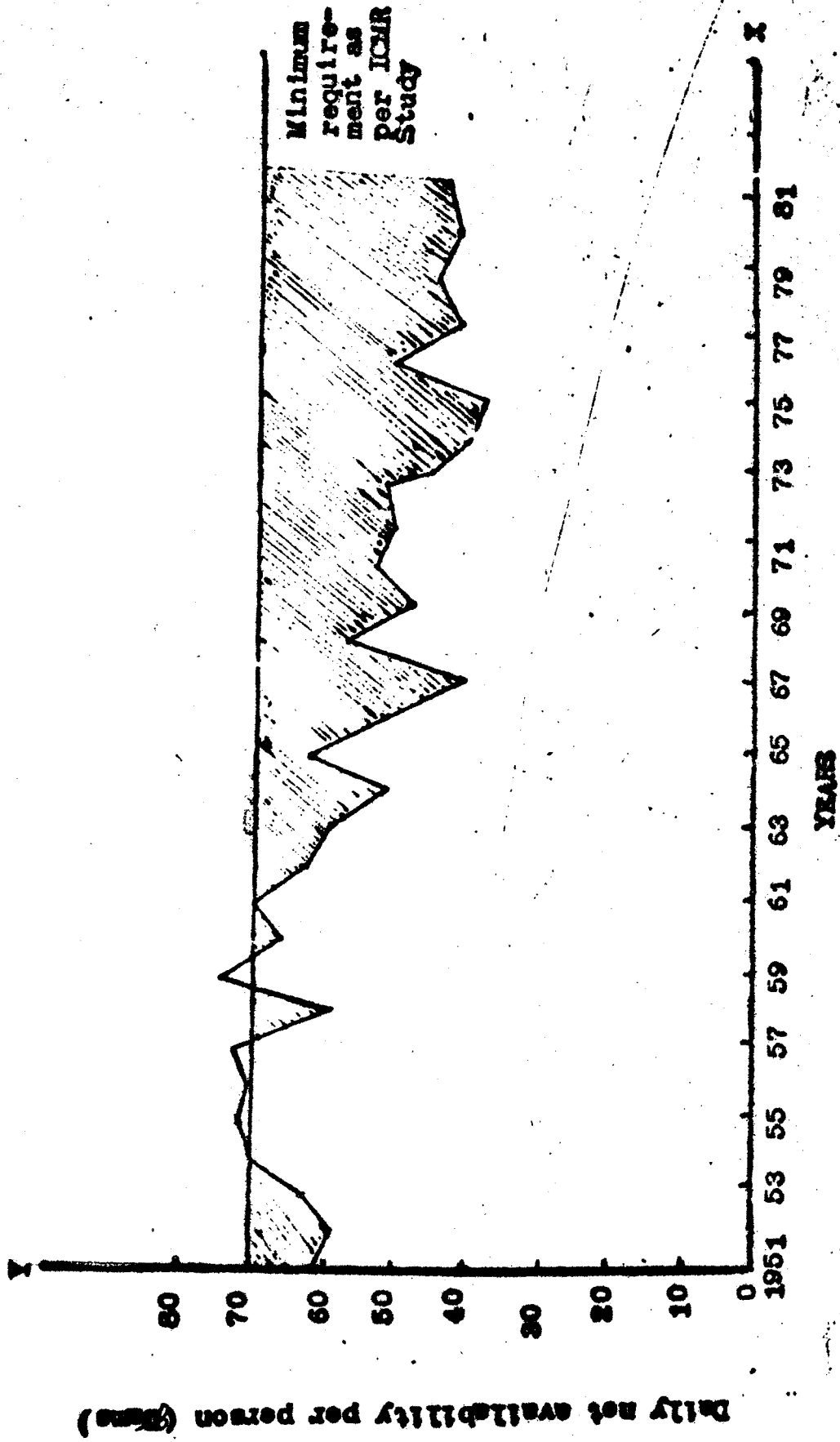
On the other hand, the roller method of dal processing is a technically developed one. Its capacity of processing is high and hence can be conveniently employed to meet urgent demands. Moreover, the output is standardized. In Barsi town, it is found that out of 22 mills only two (9.01 percent) mill have continued to operate with the power method of dal processing while the rest (90.99 percent) have adopted the roller method.

#### YIELD OF DAL AND BY-PRODUCTS.

Table 4.1 to 4.5 give the details regarding the proportions of yield of dals of all kinds, other by-products (like unbroken dal, broken dal(bran), husk, etc.) for the year 1983-84. For this purpose, six dal mills were chosen at

Graph

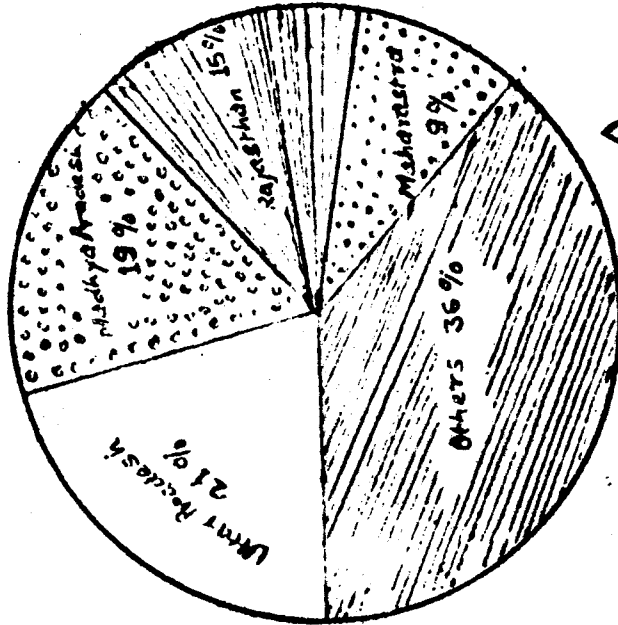
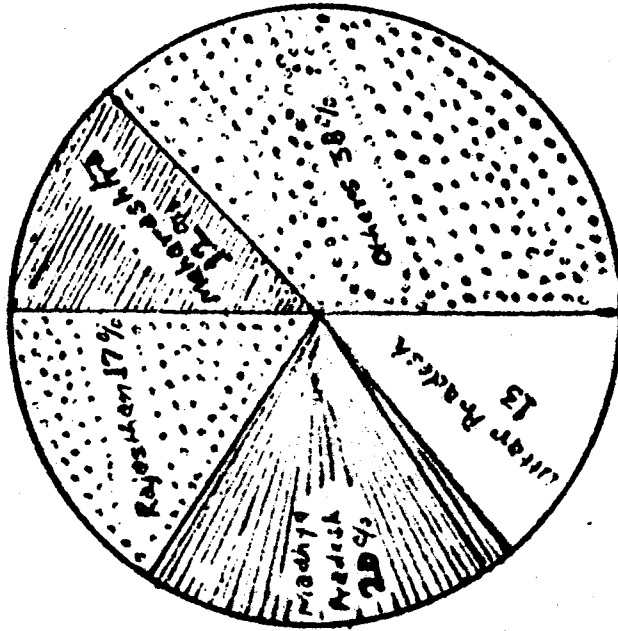
GAP IN THE PER CAPITA DAILY REQUIREMENT OF PULSES IN INDIA.

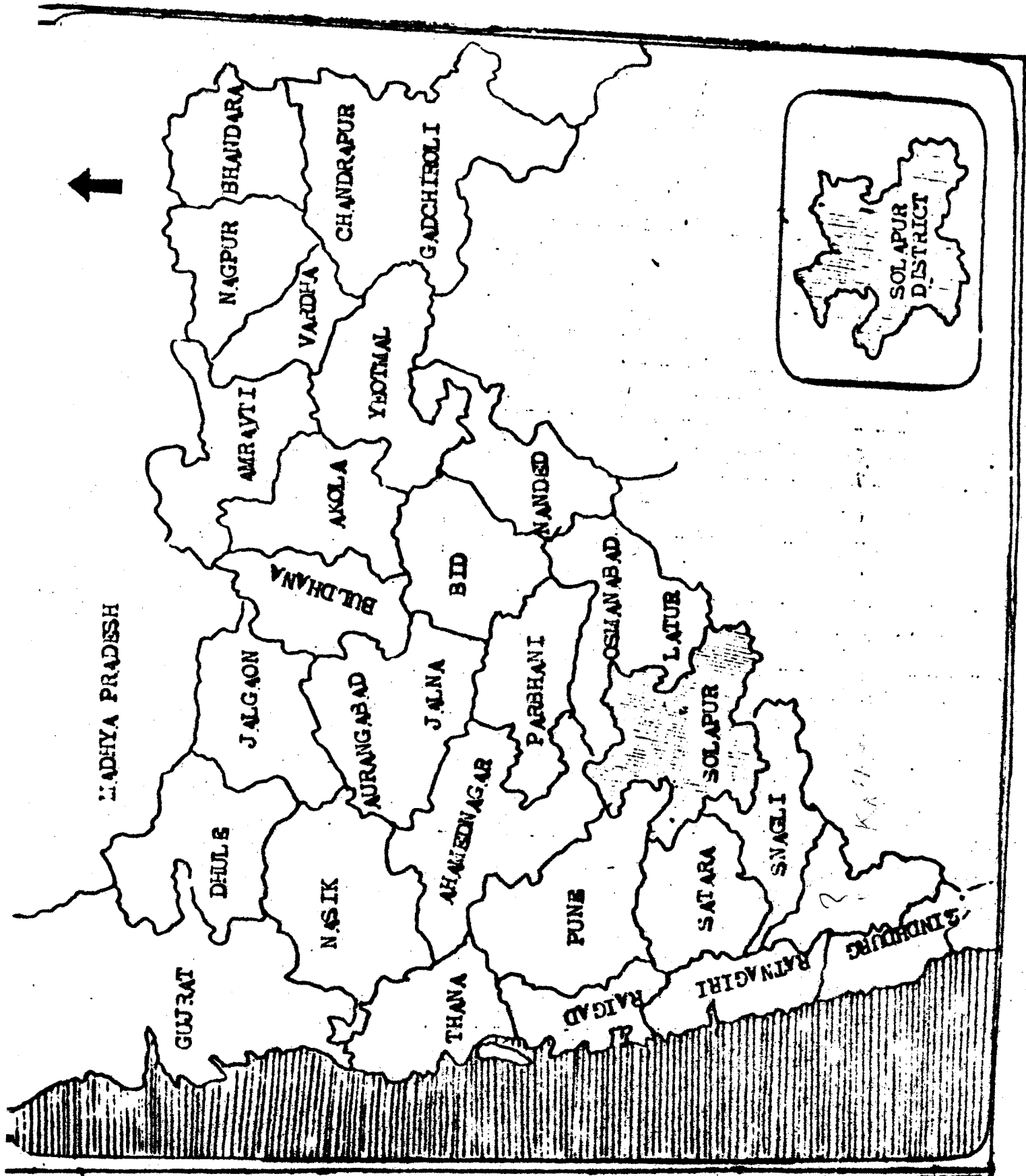




PRINCIPAL PRODUCERS OF PULSES IN INDIA.

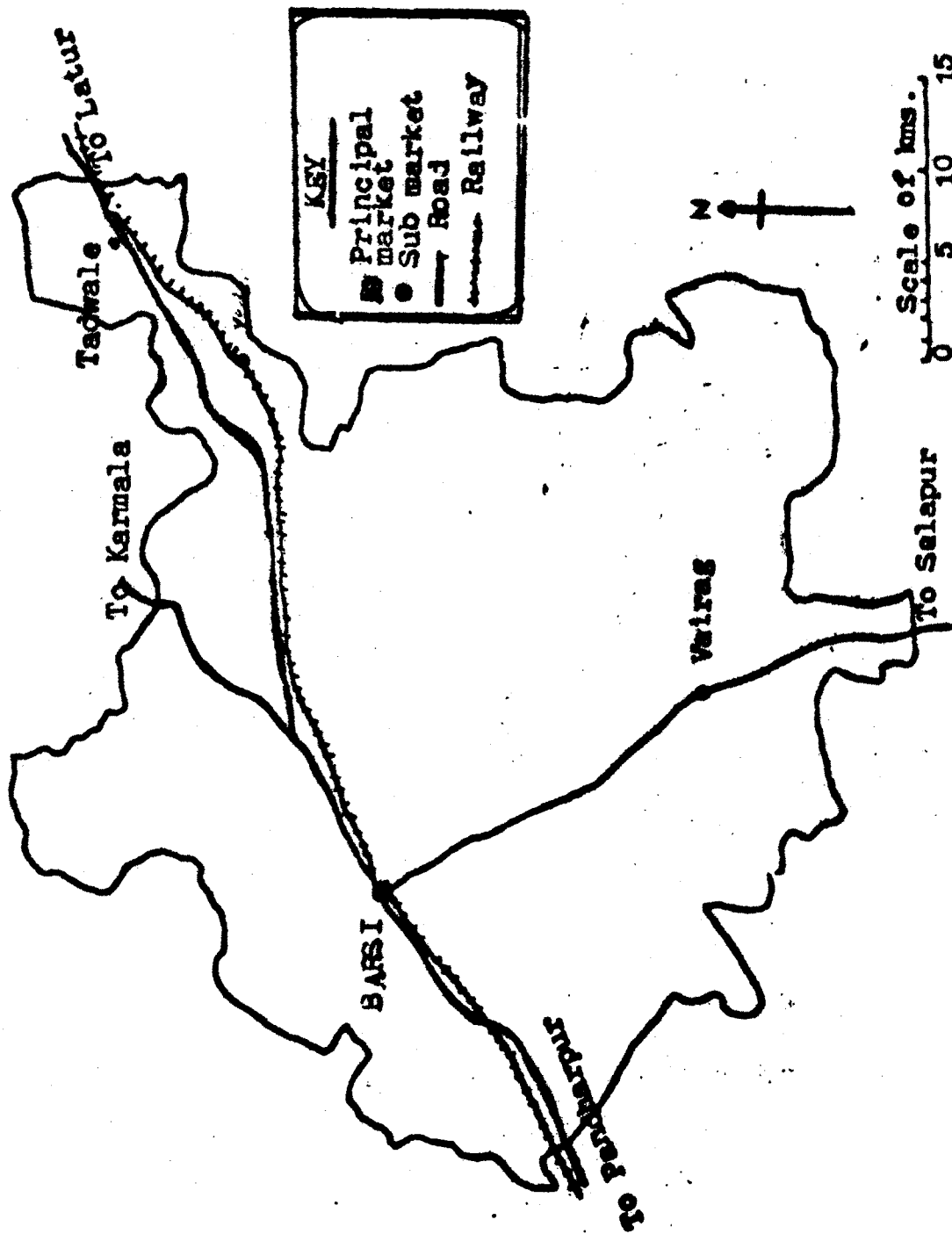
( AVERAGE FOR 1974-75 TO 1978-79 )



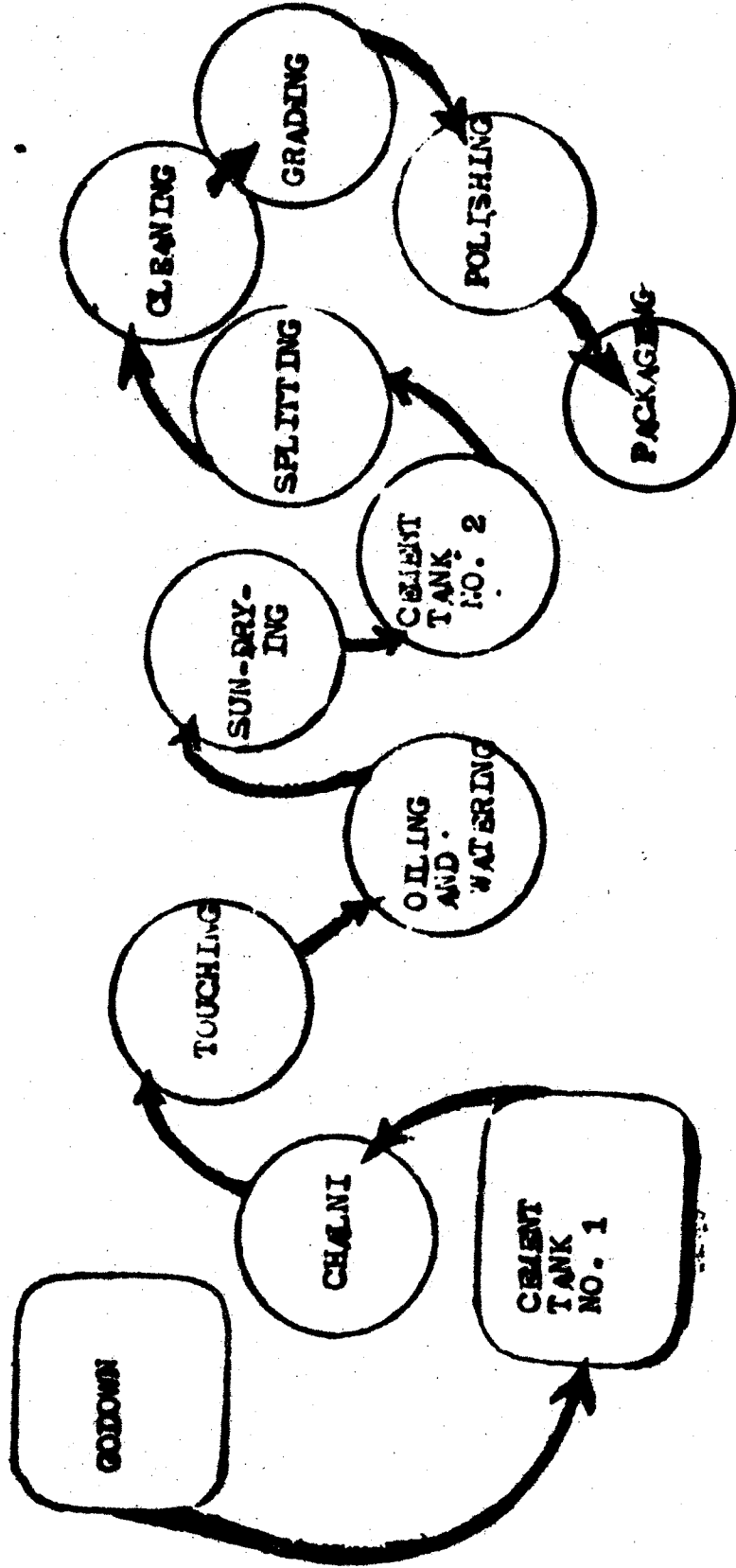


MAHARASHTRA STATE AND SOLAPUR DISTRICT

# BARSI TALUKA



**MATERIAL FLOW CHART OF DAL-MAKING IN BARSI TOWN.**



random. They were established during 1964 to 1978 and varied in processing capacity ranging from 40 to 350 quintals per day. These mills processed all kinds of pulses. The tables separately give details regarding tur, moong, udid, gram and other dals. It could be seen from the tables that the percentage recovery of unbroken dal in 1983-84 was on average 65.12 for tur, 74.34 for moong, 74.11 for udid, 79.89 for gram and 63.32 for other pulses. Thus, recovery of gram dal was the highest amongst all kinds of dals manufactured. Husk and bran were important by-products in all the cases.

## II

### SOURCES OF RAW MATERIAL.

Even though Solapur district is one of the ~~dx~~ fairly industrial districts in Maharashtra, the overall economy of the district is mainly agrarian in character. During 1977-78 and 1980-81 the area under cultivation of cereals was 77 and 85 percent respectively of the total cultivated area of Solapur district, in which 14.60 percent land was under pulses cultivation. The production of pulses for these years was 9 and 9.78 percent of the total agricultural production. The district produced nearly 275 hundred tonnes of pulses of all kinds.

Tur occupied 4.5 percent of total area under the pulses (12 percent of cropped area). Barsi taluka, had maximum area under tur production 21,749 hectares in 1980-81 in the district. Area under in Barsi taluka was 40.90, 48.81, 42.13

and 27.94 percent of the district area in 1973-74, 1974-75, 1975-76 and 1980-81 respectively. Moreover, in the production of other pulses to Barsi taluka had a significant share of area. As regards moong production, Barsi's share of land was 48.27, 50.99, 56.55 and 11.08 of the district land used for the crop during 1973-74, 1974-75, 1976-77 and 1980-81 respectively. Gram production in the taluka covered 12.11, 11.87 and 15.02 percent of district land during 1970-71, 1975-76 and 1980-81 respectively.

ix Thus, Barsi taluka had been in the forefront in the production of pulses. Moreover, the neighbouring talukas of Mohol, ~~in~~ North Solapur, South Solapur and Akkalkot were important in tur production. They collectively covered 531 and 692 hundred hectares of land under tur during 1973-74 and 1980-81 respectively. Hence, local production of pulses became an important source of raw material for dal mills. In addition, Barsi town being an important place of trade and commerce in Solapur district. Produce from the neighbouring talukas of this district and also from Marathwada region was received by Barsi market.

Table 4.6 presents in nutshell the sources of raw materials for the dal-making units of Barsi town.

About 57 percent raw material is assembled from within the Solapur district, of which Barsi taluka alone had 38.80 percent share. Other districts of Maharashtra provided one fourth (i.e. 25.25 percent) of the aggregate quantity. Districts in Vidarbha and Marathwada are prominent in ~~the~~

this context. In addition, 17 percent of the quantity assembled comes from the regions outside Maharashtra State particularly from Gujarat, Madhya Pradesh, Rajasthan, Uttar Pradesh, Punjab, and Karnataka States. Punjab and Rajasthan supply mostly gram while Vidarbha and Marathwada regions supply urid and moong to the Barsi dal mills. As domestic supply is inadequate to run the mills regularly, a small portion of the assembled quantity just 0.67 percent - is received from foreign countries, particularly from Turkey, ~~Tanzania~~ Tanzania and Thailand. Thus Barsi dal mills usually tap all the possible sources outside the district for procuring adequate quantity of raw material.

Table 4.6

Assembly of raw material by the dal-making mills in Barsi town.

Sources	Percentage
(1) Barsi taluka.	38.80
(2) Rest of Solapur district.	18.28
(3) Rest of Maharashtra.	25.25
(4) Outside Maharashtra.	17.00
(5) Foreign Countries.	0.67
Total .....	<u>100.00</u>

Source :- Annual Reports of the APMC, Barsi.

III

PERFORMANCE OF THE DAL MILLS.

There is observed a cutthroat competition among the dal mills in Barsi town. Every individual firm has been struggling to keep its position intact in the dal market. An important measure adopted for the purpose is product differentiation reflected principally in the quality of the produce. The products are put out in the market under different brand names.

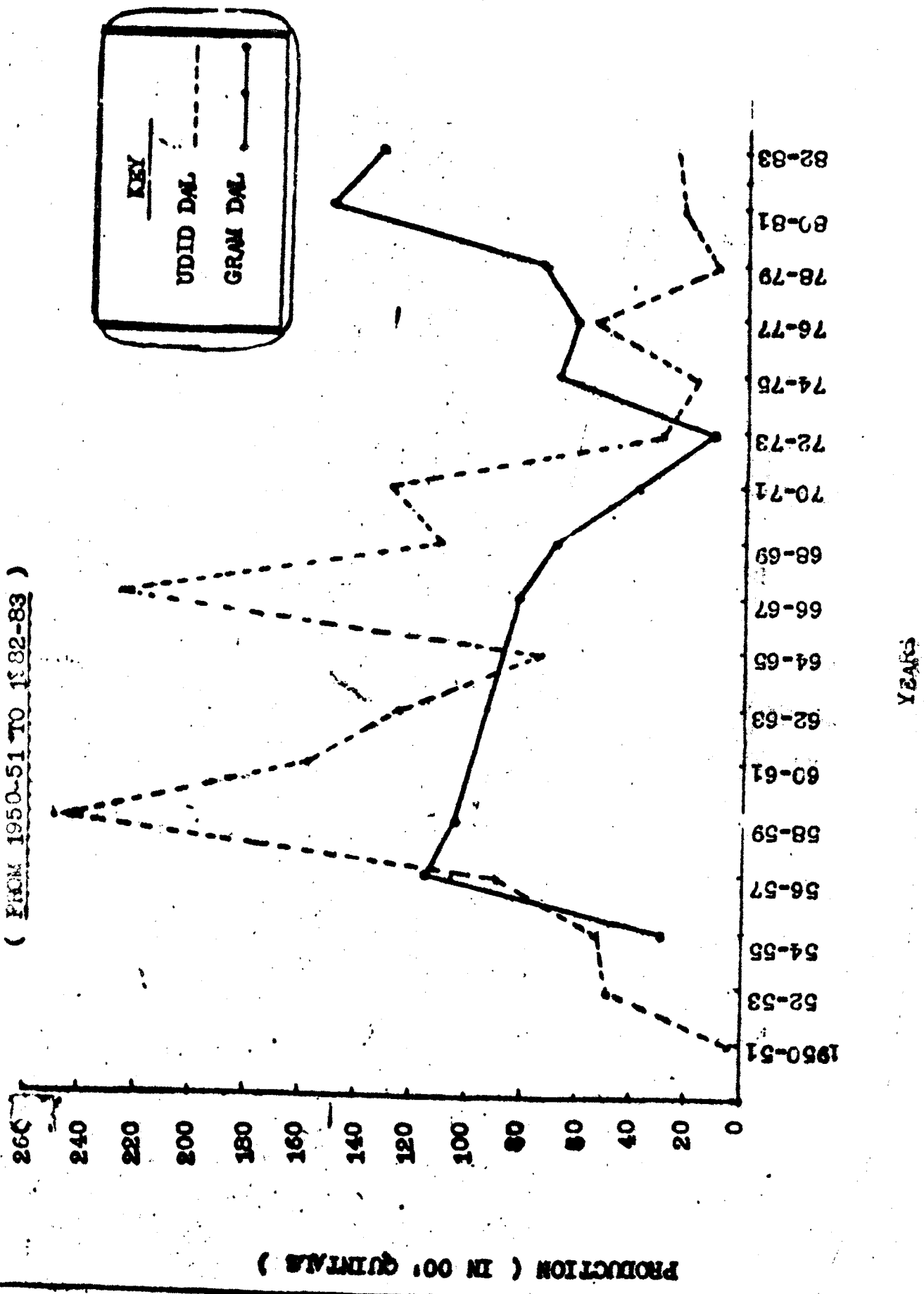
Actual production performance of the dal mill can be judged with the help of Table 4.7. In the light of the kind of pulses processed by the mills, it could be noted that processing of tur and moong happened to be the principal activity of the mills, as 20 out of 22 mills were engaged in that activity in 1980-81, whereas all the 22 were involved in it in 1981-82 and 1982-83. Processing of gram was the second best activity as it was undertaken by 17 mills in 1980-81, 19 mills in 1981-82 and 18 mills in 1982-83. Udid occupied the third place as in all the three years under reference 16 mills undertook its processing work. Other pulses was rather a residual activity for only a handful of mills. The number of mills was 4 in 1980-81, 9 in 1981-82 and 7 in 1982-83.

It can be also seen from Table 4.7 that the performance of R. Badrinarayan dal mill, Ashok dal mill and Jawahar mill was commendable. Jawahar dal mill was at the top of all the mills. R. Badrinarayan and Ashok dal mill stood behind Jawahar



**PRODUCTION OF UDID DAL AND GRAM DAL IN BASSI TOWN**

**( FROM 1950-51 TO 1982-83 )**



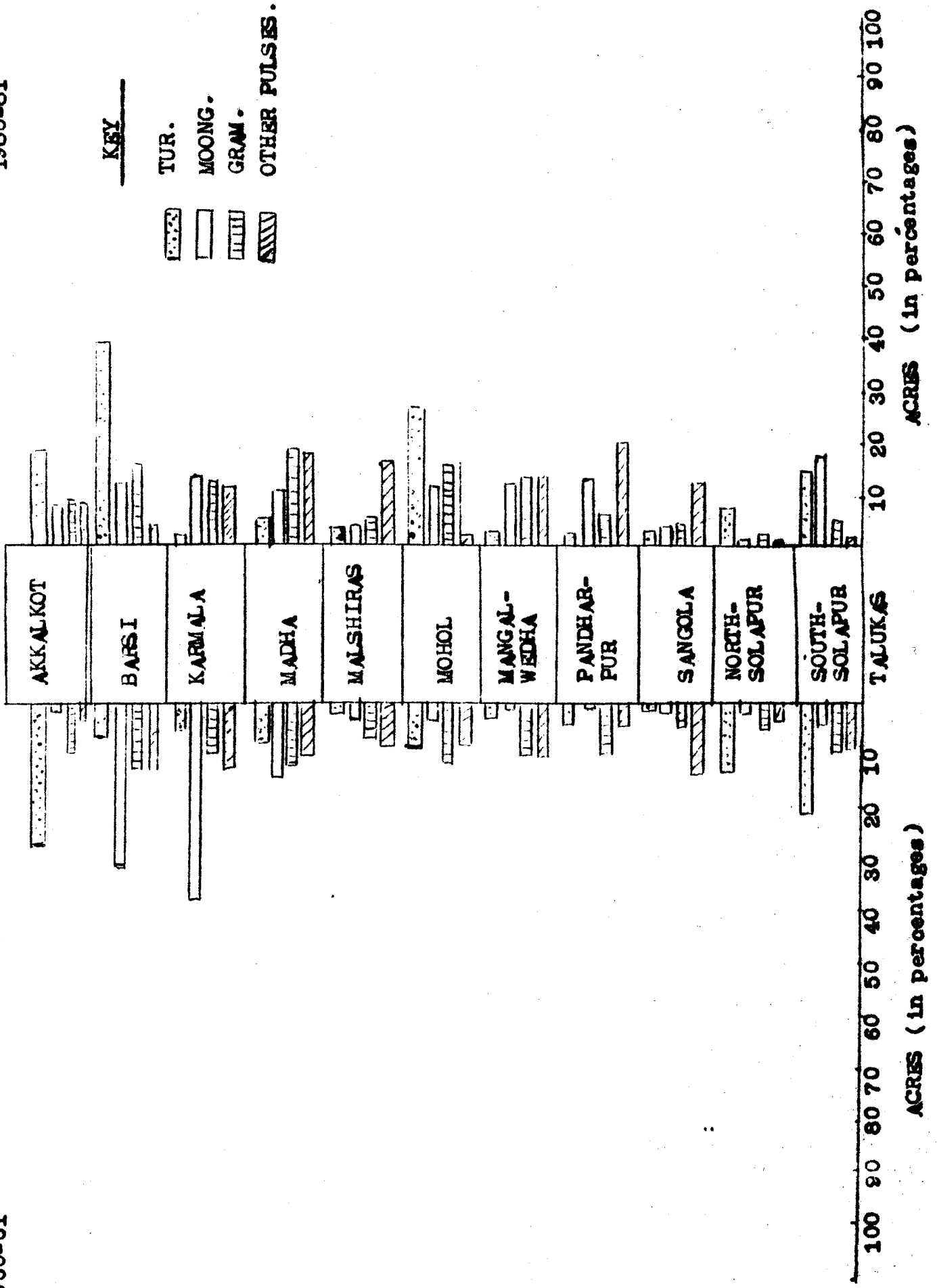
**PRODUCTION ( IN 000 QUINTALS )**

**YEARS**

- : TALUKWISE AREA UNDER PULSES IN SOLAPUR DISTRICT (PERCENTAGE TO DISTRICT TOTAL) : -

1960-61

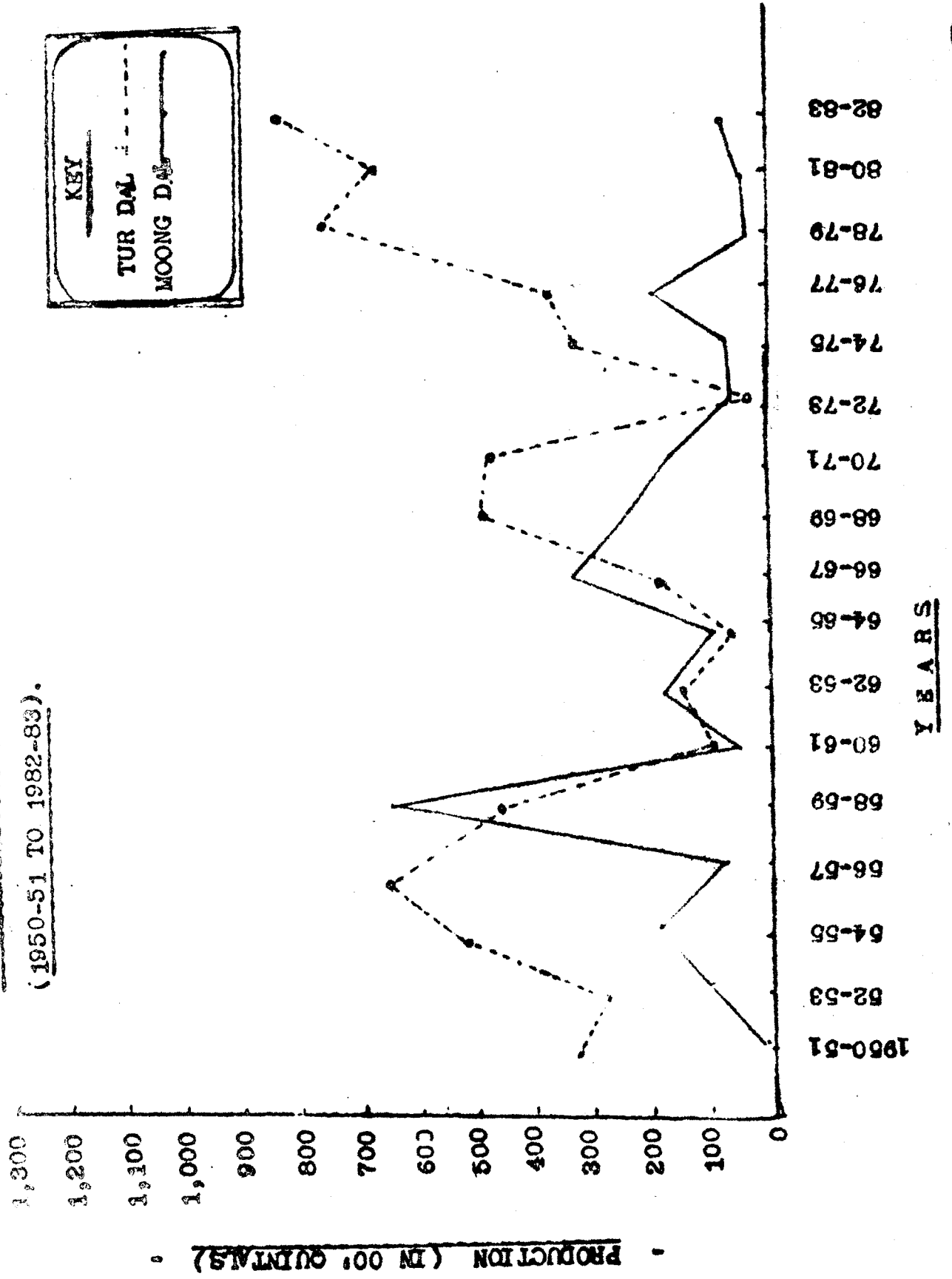
1980-81



GRAPH

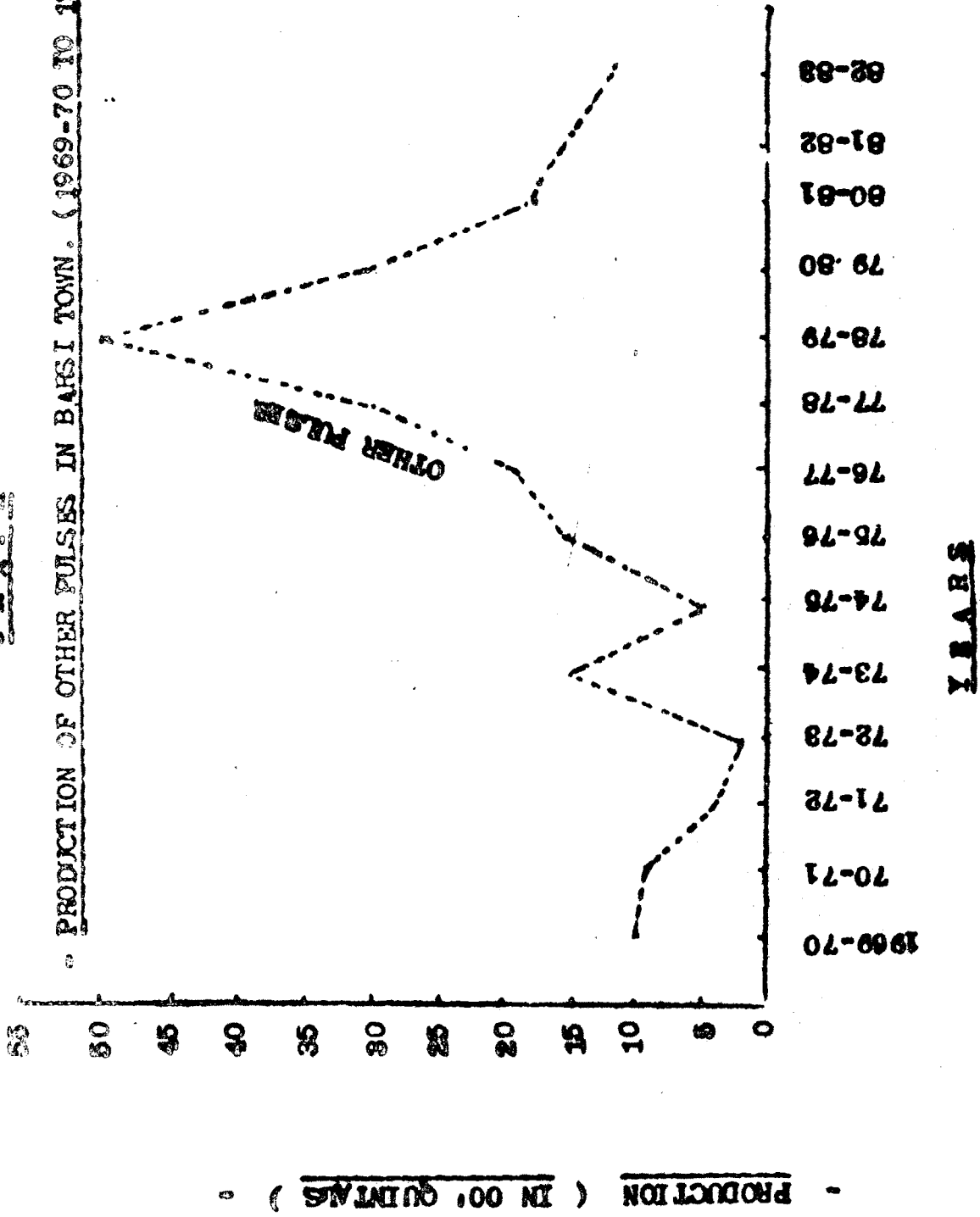
PRODUCTION OF TUR DAL AND MOONG DAL IN BARSATI TOWN

(1950-51 TO 1982-83)



**G R A P H**

**PRODUCTION OF OTHER PULSES IN BARSATI TOWN. (1969-70 TO 1982-83)**



mill. In the second rank were R.B.Somani, Bandewar dal & besan mill and Kamal Trading Company. The remaining dal mills were much below so far as their aggregate output was concerned. The small mills carried on their activity intermittently. Particularly Ganpatrao Chavhan mill, P.D. Purohit mill, and Shri. Shrimal mill were partly engaged in the production of dal by themselves as occasionally, they let their mills to other millers for processing work as they were short of adequate funds to purchase raw materials for the processing works. Hence, if, the financial position and the dal season were favourable, the mills were active on their own.

#### IV

#### PROCESSING COST

The method of processing, quality of raw materials, managerial skill, efficiency of factors of production, wastage, packaging charges, etc. happened to be the factors influencing the cost of dal processing. Normally, the cost of processing has hiked from time to time because of rising input prices. To compensate for higher input prices, dal producers intermittently resorted to modernization of their units by adopting new techniques and employment of better types of machineries. Of course, such a course was limited to a few units, others were content with minor improvements on account of financial incapacities to bear the heavy cost of replacements. Obviously, such mills were working with relatively high cost of processing. Details of average cost of processing of pulses are given in Tables 4.8 to 4.10.

Table 4.8 indicates the average cost of tur dal-making by power method as also roller method for the year 1983-84.

Table 4.8

Processing cost of Tur per quintal of tur dal manufactured.

S.No.	Cost items	Cost of processing by.....	
		Power method(Rs.)	Roller method(Rs.)
1.	Labour.	10.00	3.00
2.	Electricity.	2.05	2.87
3.	Water.	0.25	0.25
4.	Storage.	1.00	1.00
5.	Wastages.	1.50	1.50
6.	Oil for polishing.	7.20	4.50
7.	Contingency expenses.	0.50	0.50
8.	Packaging.	0.30	0.30
9.	Sundry Expenses not included above.	1.00	1.00
<b>Total</b>		<b><u>23.75</u></b>	<b><u>14.92</u></b>

Source :- Compiled on the basis of data collected through Field work.

It can be seen from Table 4.8 that there was substantial difference in the processing cost when power and roller methods were used. The cost of manufacturing one quintal of tur dal by roller method was Rs. 14.92 as against Rs. 23.75 by power method. The difference was of Rs. 8.83, about 60 percent higher than the power method.

Table 4.9 shows processing cost of moong for manufacturing one quintal of moong for the year 1983-84.

Table 4.9

Processing cost of moong per quintal of moong. dal manufacturing.

Sr.No.	Cost Items	Cost of processing by....	
		Power method (Rs.)	Roller method (Rs.)
1.	Labour.	10.00	3.00
2.	Electricity.	2.05	2.87
3.	Storage.	1.00	1.00
4.	Wastages.	4.00	<del>1.00</del> 2.00
5.	Buter milk.	1.00	-
6.	Oil for polishing.	1.80	1.80
7.	Contingency expenses.	0.50	0.50
8.	Packaging.	0.30	0.30
9.	Sundry expenses not included above.	0.50	0.50
	Total.....	21.15	12.97

Source :- Compiled on the basis of data collected through Field Work.

It can be seen from Table 4.9 that processing cost of moong dal was Rs. 21.15 in power method and Rs. 12.97 in the roller method. It was therefore, 63.15 percent more in power method.

Table 4.10 gives per quintal processing cost of udid dal and gram dal in power method and roller method for the year 1983-84.

Table 4.10

Processing cost of udid and gram per quintal of udid dal and gram dal manufactured.

Sr.No.	Cost items	Udid dal		Gram dal	
		Power Method (Rs.)	Roller Method (Rs.)	Power Method (Rs.)	Roller Method (Rs.)
1.	Labour.	10.00	3.00	10.00	3.00
2.	Electricity.	2.05	4.10	4.10	4.42
3.	Storage.	1.00	1.00	1.00	1.00
4.	Wasteges.	2.00	1.00	2.00	2.00
5.	Oil for polishing.	1.80	1.80	-	-
6.	Contingency expenses.	0.50	0.50	0.50	0.50
7.	Packaging charges.	0.30	0.30	0.30	0.30
8.	Sundry expenses not included above.	0.50	0.50	0.50	0.50
<b>Total</b>		<b>18.15</b>	<b>12.20</b>	<b>18.90</b>	<b>11.72</b>

Source :- Compiled on the basis of data collected through Field Work.

Table 4.10 reveals that the processing cost of udid dal as per the power method and the roller method was Rs. 18.15 and Rs. 12.20 per quintal respectively, the former being 47.55 percent higher than the latter. As regards the



processing cost of gram dal for per quintal finished product, it was Rs. 18.90 and 11.72 according to the power method and roller method respectively. Therefore, the power method required 58.33 percent higher cost than the roller method.

It is very clear from the above information that the roller method of dal production is considerably cheaper than the power method and hence it is profitable to adopt it. In Barsi town, there were only two dal mills in which the power method was continued and all others had adopted the roller method for ~~the~~ dal production. To this extent, it can well be said that in price fixation in the market the majority of the mills (20) having roller system had a strong bearing, and the market price corresponded more with the cost of production by the roller method.

## V

### PRODUCTION OF DAL

Dal production of Barsi had established its marks in markets all over Maharashtra and outside through about five decades of activity. 'Tiger' and 'Haran' brands of tur dal were the most popular products in the dal market of Maharashtra.

Generally, the production of dal is dependent on the availability of raw material, installed capacity of dal mills, capacity utilization, managerial skills, production decisions of the mills, financial convenience and the market situation. An account of dal production by Barsi mill over three decades since 1950-51 would be useful in tracing the path of activity. Table 4.11 provides the details.

Table 4.11

Production of dal in Barsi town (1950-51 to 1982-83).

(Quantity in quintals)						
Years	Tur dal	Moong dal	Udid dal	Gram dal	Other dals	Total Output
1	2	3	4	5	6	7
1950-51	32,742 (92.58)	2,324 (6.57)	302 (0.85)	-	-	35,368 (100.00)
1951-52	36,395 (83.33)	6,406 (14.76)	612 (1.41)	-	-	43,413 (100.00)
1952-53	28,404 (63.78)	11,158 (25.06)	4,970 (11.16)	-	-	44,532 (100.00)
1953-54	66,636 (59.89)	36,210 (32.95)	8,412 (60.56)	-	-	1,11,258 (100.00)
1954-55	51,553 (64.65)	19,900 (24.95)	5,260 (6.60)	3,033 (3.80)	-	79,746 (100.00)
1955-56	59,074 (61.41)	16,532 (17.19)	8,455 (9.10)	11,832 (12.30)	-	96,193 (100.00)
1956-57	65,048 (69.42)	8,169 (8.72)	9,023 (9.63)	11,460 (12.23)	-	93,700 (100.00)
1957-58	48,132 (49.78)	17,060 (17.65)	16,105 (16.66)	15,384 (15.91)	-	96,681 (100.00)
1958-59	46,241 (41.44)	66,347 (59.56)	28,459 (25.50)	10,544 (9.50)	-	1,11,591 (100.00)
1959-60	11,772 (35.93)	15,876 (48.45)	5,118 (15.62)	-	-	32,766 (100.00)
1960-61	10,900 (58.32)	6,200 (33.17)	1,590 (8.51)	<del>18,890</del> -	-	18,690 (100.00)
1961-62	14,950 (40.42)	17,239 (46.61)	4,800 (12.97)	-	-	36,989 (100.00)
1962-63	15,490 (32.82)	19,254 (40.79)	12,460 (26.39)	-	-	47,204 (100.00)
1963-64	28,970 (40.99)	30,320 (42.90)	11,380 (16.11)	-	-	70,670 (100.00)

1	2	3	4	5	6	7
1964-65	5,800 (24.22)	10,700 (44.68)	7,450 (31.10)	- -	- -	23,950 (100.00)
1965-66	18,760 (26.63)	39,441 (55.99)	8,905 (12.64)	3,340 (4.74)	- -	70,446 (100.00)
1966-67	19,315 (22.87)	34,110 (40.40)	22,891 (27.17)	8,115 (9.62)	- -	84,429 (100.00)
1967-68	38,750 (49.76)	26,143 (33.53)	8,791 (11.27)	4,294 (5.50)	- -	77,979 (100.00)
1968-69	48,516 (52.79)	25,322 (57.55)	11,051 (12.02)	7,020 (7.64)	- -	91,909 (100.00)
1969-70	41,196 (50.82)	24,620 (30.37)	9,720 (11.99)	5,519 (6.82)	979 (1.21)	81,055 (100.00)
1970-71	47,128 (57.81)	16,537 (20.29)	12,960 (15.90)	3,958 (4.88)	933 (1.02)	81,516 (100.00)
1971-72	5,926 (28.35)	3,515 (16.81)	655 (3.13)	10,404 (49.77)	406 (1.97)	20,906 (100.00)
1972-73	1,474 (13.53)	7,602 (69.83)	328 (3.02)	1,234 (11.33)	250 (2.29)	10,895 (100.00)
1973-74	26,322 (62.99)	5,605 (13.39)	3,751 (8.90)	4,608 (11.00)	1,528 (3.65)	41,864 (100.00)
1974-75	34,011 (66.52)	7,224 (15.11)	1,972 (3.86)	6,919 (13.53)	506 (0.19)	51,132 (100.00)
1975-76	46,095 (66.17)	11,776 (16.90)	1,751 (2.51)	8,543 (12.26)	1,501 (2.15)	69,665 (100.00)
1976-77	37,890 (53.27)	20,227 (27.71)	5,725 (7.85)	6,267 (8.58)	1,884 (2.58)	73,002 (100.00)
1977-78	43,386 (64.13)	10,529 (15.56)	4,630 (6.84)	6,024 (8.90)	3,083 (4.56)	67,652 (100.00)
1978-79	74,942 (80.56)	4,412 (4.72)	1,212 (1.29)	7,504 (7.96)	5,161 (5.47)	94,291 (100.00)
1979-80	73,043 (74.47)	6,552 (6.68)	7,044 (7.18)	8,322 (8.48)	3,123 (3.18)	98,084 (100.00)

1	2	3	4	5	6	7
1980-81	67,567 (73.25)	5,235 (5.68)	2,520 (2.73)	15,080 (16.35)	1,840 (1.99)	92,242 (100.00)
1981-82	61,242 (70.59)	9,154 (10.55)	3,580 (4.13)	11,240 (12.96)	1,536 (1.77)	86,752 (100.00)
1982-83	84,499 (77.26)	7,566 (6.92)	2,630 (2.40)	13,460 (12.30)	1,224 (1.12)	1,09,379. (100.00)

Note :- 1) Figures in parentheses indicate percentages to respective totals.

2) The quantity quoted in Bangali maund was converted into quintals @ 2.67 B.M. = 1 quintal.

Source:-1) Annual Reports of the APMC, Barsi.

2) Field Work.

Reviewing the details in Table 4.11, one notices glaringly that Barsi had remained principally a tur dal producing centre during 1950-51 to 1982-83 in spite of periodical upheavals in the quantity manufactured. The town registered the production of 32,742 quintals of tur dal in 1950-51 and reached an all time record production of 84,499 quintals in 1982-83; an increase of 158.07 percent. A deeper probe, however, reveals an uneven course. The years 1950-51 to 1958-59 were of booming activity and the industry was on assendency. The upward trend was reversed during the 8 years between 1959-60 and 1966-67 and the production of tur dal stood nearly 35 to 40 percent of the level attained in the late fifties. The situation again turned for better since 1967-68 and rising trend was maintained in the later years.

However, 1971-72 and 1972-73 were the worst years over the entire span of time under consideration. Severe drought conditions prevailed not only over Solapur district but covered almost the entire State of Maharashtra. Production of tur itself suffered miserably and hence that of the dal. Late sixties and late seventies were producing almost as the level attained by late fifties, that is, roundabout 45,000 quintals of tur dal. The year 1978-79 all of a sudden marked a big leap as compared to the immediately preceding years. Surprisingly, the performance was not maintained by later years, as seen by successive decrease in production upto 1981-82. And then again a big leap in 1982-83 to record an all-time height in production.

Moong dal was the second best item in dal production for year together, but of late this commodity lost this position in favour of gram dal. It could be seen that Barsi could be well recognised for moong dal production during 1952-53 to 1970-71 when barring exceptional years of low production aggregate production ranged normally between 15 to 30 thousand quintals. The year 1958-59 attracts in the attainment of all with the conspicuously high production figure of 66,347 quintals of moong dal. In no other year dal mills could reach even closest to this figure, leave aside the question of surpassing it. In the seventies and early eighties, moong dal production in the Barsi mills slumped phenomenally so that excepting 1975-76, 1976-77 and 1977-78 the output never crossed 10,000 quintals.

Udid dal production was undertaken by the mills in all the years under reference. However, from the quantity turned out, it can be considered rather a supplementary activity. The years 1957-58, 1958-59, 1962-63, 1963,64, 1966-67, 1968-69 and 1970-71 were the seven years when udid dal production exceeded 10,00 quintals in most of the cases marginally while in rest of the 26 years it remained below 10,000 quintals and more often below 5,000 quintals. Such a situation had come to stay from 1971-72 onwards. It leads one to infer that moong dal production in Barsi had remained rather an incidental activity.

Coming to gram dal, Dal mills entered into this province a little late in 1954-55. On the basis of initial output, an impression was created that the mills would gradually extend their activities to gram dal as an important supplementary activity as the outturn was around 11,000 quintals between 1955-56 and 1958-59. Surprisingly, the activity was all of a sudden halted during 1959-60 to 1964-65. Gram dal production was resumed in 1965-66 and was continued unabated later on. Eventhough a rising trend in production could be vividly perceived, till the end of the nineteen seventies the output remain below 10,000 quintals. In the eighties only this limit was cross so that gram dal production emerged as the second best activity relegating moong dal production to a lower position.

'Others' included hulga, math, and masur dal. The avenue was added by the dal mills since the beginning of nineteen seventies only. In the late seventies the activity

had picked up a good momentum, but since the eighties again it slowed down to a level below 2,000 quintals per annum.

PRODUCTION CAPACITY.

Normally the season of pulses processing in Barsi town, starts from mid-November and it ends in the month of June.

In the rainy days, mills work occasionally. Their ~~max~~ production capacity in terms of raw material and the finished product is different from firm to firm. This can be seen with the help of Table 4.12.

Table 4.12

Production capacity of Barsi dal mills.

(Quantity in quintals)

Sr.No.	Name of the mill	Production capacity	
		Raw material	Finished product
1.	Ambikadas.	15,000	10,000
2.	Ashok.	30,000	20,000
3.	Bhagwant S.Dal.Prakriya Maryadit.	10,000	7,000
4.	Bandewar dal & Besan mill.	21,000	<del>21,500</del> 15,000
5.	Datta Industry.	5,000	3,500
6.	Ganpatrao Chavhan.	6,000	4,200
7.	Govind.	9,000	7,000
8.	Jawahar.	40,000	28,000
9.	Kamal Trading Company.	30,000	19,500
10.	Kiran.	6,000	4,000
11.	Laxmi Narayan.	12,000	9,000
12.	Maharashtra.	20,000	13,000

13. P.D.Purohit.	6,000	4,000
14. R.Badrinarayan.	35,000	24,000
15. R.B.Somani.	30,000	21,000
16. Sawala.	7,000	5,000
17. Santosh.	10,000	7,000
18. Shri. Shrimal.	3,000	2,000
19. Tulja Bhavani.	<del>5,000</del> 4,500	3,000
20. Vasant Trading Company.	12,000	8,000
21. Velgimona and Company.	15,000	10,000
22. Vishwanath.	12,000	7,500

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Source :- Compiled on the basis of data collected through  
Field Work.

It was observed in this context that nearabout 50 percent dal mills produced 70 quintals finished product per shifts, while others more than that. As regards seasonal/annual production capacity, 27.27 dal mills were producing dal upto 5,000 quintals, 49.71 percents mills between 5,000 and 10,000 quintals per annum and the remaining 31.82 percent mills exceeded 10,000 quintals per annum and thus remained at the top.

#### PROFIT POSITION.

Table 4.13 points the profit position of the individual dal mills for the triennium 1980-81 to 1982-83.



Table 4.13

Profit position of Barsi dal mills.

S.No.	Name of the dal mill	Profit for the market years(Rs.)					
		1980-81		1981-82		1982-83	
		Net Profit	Profit assets ratio	Net Profit	Profit assets ratio	Net Profit	Profit assets ratio
1	2	3	4	5	6	7	8
1.	Ambikadas.	20,000 (4.83)	0.02	24,000 (6.52)	0.03	29,000 (6.57)	0.04
2.	Ashok.	80,000 (6.83)	0.06	92,000 (5.9%)	0.08	1,00,000 (9.46)	0.08
3.	Bhagwant.	25,000 (8.38)	0.04	35,000 (15.42)	0.06	45,000 (11.30)	0.07
4.	Bandewar.	43,000 (6.85)	0.03	48,000 (8.42)	0.06	59,000 (7.81)	0.06
5.	Datta Industries.	20,000 (10.77)	0.06	25,000 (16.22)	0.08	30,000 (17.29)	0.10
6.	Ganpatrao Chavhan.	10,000 (7.41)	0.03	15,000 (10.29)	0.05	-	-
7.	Govind.	40,000 (10.65)	0.19	42,000 (12.41)	0.20	45,000 (12.97)	0.22
8.	Jawahar.	75,000 (4.30)	0.06	90,000 (5.95)	0.07	1,25,000 (7.94)	0.11
9.	Kamal.	40,000 (8.25)	0.03	47,000 (11.91)	0.05	55,000 (13.05)	0.05
10.	Kiran.	27,000 (12.30)	0.04	30,000 (9.44)	0.06	35,000 (18.30)	0.06
11.	Laxminarayan.	35,000 (6.92)	0.04	45,000 (11.37)	0.05	57,000 (13.50)	0.08
12.	Maharashtra.	27,000 (7.85)	0.05	35,000 (11.32)	0.05	50,000 (12.17)	0.07
13.	P.D.Purohit.	15,000 (11.62)	0.06	20,000 (9.56)	0.07	22,000 (23.60)	0.08
14.	R.Badrinarayan.	70,000 (6.62)	0.05	90,000 (10.01)	0.07	1,10,000 (14.48)	0.09

1	2	3	4	5	6	7	8
15. R.B.Somani.		54,000 (10.80)	0.02	60,000 (12.93)	0.07	70,000 (13.29)	0.07
16. Sawala.		12,000 (4.89)	0.04	15,000 (6.99)	0.05	17,000 (6.89)	0.04
17. Santosh.		-	-	14,000 (6.18)	0.02	20,000 (8.41)	0.03
18. Shri. Shrimal.		15,000 (15.62)	0.03	20,000 (18.43)	0.04	22,000 (15.01)	0.05
19. Tuljabhavani.		12,000 (8.72)	0.03	15,000 (12.09)	0.03	20,000 (6.56)	0.05
20. Vasant.		-	-	40,000 (3.85)	0.03	60,000 (19.75)	0.06
21. Velgimona & Company.		25,000 (8.22)	0.04	35,000 (14.28)	0.05	45,000 (16.91)	0.08
22. Vishwanath.		10,000 (2.81)	0.03	18,000 (4.35)	0.04	22,000 (15.73)	0.05

Note :- Figures in parentheses indicate profit per quintal of dal produced.

Source :- Compiled on the basis of data collected through Field Work.

It is pleasure from business point of view that all the mills were earning profit. Not only that, the profits increased in successive years. Actually, aggregate production of dal of all kinds was 86,752 quintals in 1981-82 and 92,242 quintals in 1980-81. Even then, profit of all units hiked in the former year. Output in 1982-83 marked the all-time high of 1,09,379 quintals; profits also swelled further. This outcome could be attributed largely to continuously existing high prices position. Pulses have been slow

growth crops in the country. Their production and the availability of stocks for processing, have been inadequate for the processing units. As such, with higher output, the firms had the benefit of getting more returns and thereby more profit.

Profit position can be used to judge the relative efficiency of the mills. Absolute figures of profits, of course, will not be useful as relatively larger sized firms are bound to turn out a larger quantity and earn more profit. Instead, profit-assets ratio can be employed. The formula is:

$$\text{Profit-assets ratio} = \frac{\text{Gross Profit for the year.}}{\text{Value of assets for the year.}}$$

Millwise ratios can be calculated for the three years, under reference. Table 4.13 gives the results. It can be seen that dal mills had in 1980-81, 1981-82 and 1982-83 their profit-asset ratio within the range, 0.02 to 0.19, 0.02 to 0.20 and 0.03 to 0.08 respectively. Three mills had a somewhat higher ratio. The best performance was put out by Govind mill (0.22) for the year 1982-83. Importantly, this was the mill which possessed the lowest assets amongst all the mills. Thus the level of assets did not cause any significant difference in the profit-assets ratio of the dal mills. Notwithstanding the assets position, the mills were working within moderate differences.

To know the working results of the mills in a better perspective, another tool, viz, profit per quintal of dal manufactured, can be employed. The formula is :

Profit per quintal =  $\frac{\text{Profit for the year.}}{\text{Dal production of the year.}}$

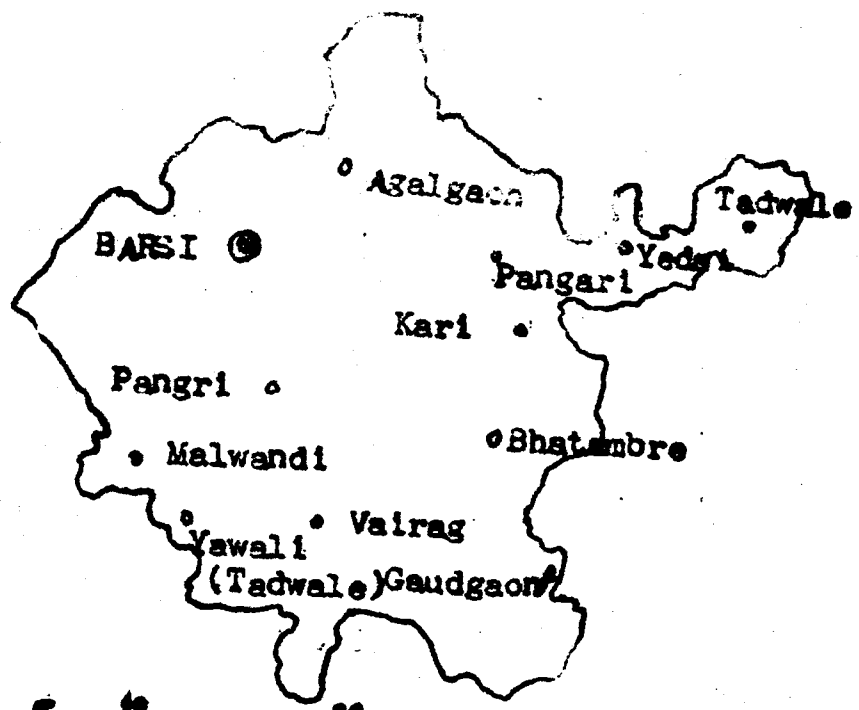
Table 4.13 gives details in this behalf in parentheses for three years, namely 1980-81, 1981-82 and 1982-83. It is very clear, Ashok dal mill, Bandewar dal and Besan mill, Jawahar dal mill, R.Badrinarayan dal mill and R.B.Somani dal mill were the bigger firms which swallowed major share of profit in the dal business. These five mills bagged 45.80 percent of the industry profit leaving 54.20 percent for the rest of the 17 mills.

## VI

### DISPERSION OF THE FINISHED PRODUCT.

Table 4.14 indicates the dispersion of the finished product to different places from the Barsi market. It can be seen that Maharashtra, Karnatak, Tamil Nadu, Gujarat and Kerala states were the important territories receiving dal products from Barsi mills. Of these states, Maharashtra occupied an important place. Major cities in the state like Bombay, Pune, Kolhapur, Nagpur, Nasik, etc. were regular customers. In fact, tur dal of Barsi reached almost every nook and corner of the state. Besides the above-mentioned states, others states and Union Territories in the country occasionally purchased dal products from Barsi. They were Uttar Pradesh, West Bengal, Andhra Pradesh, Rajasthan, Bihar, Haryana, Goa, Delhi and Pondicherry. Thus, the largest portion of dal output of Barsi mills was sent to the places within Maharashtra State and mostly the states bordering Maharashtra State.

AGRICULTURAL PRODUCE MARKET COMMITTEE, BARSII



Scale of Kilometers.

VII

CHANNELS OF MARKETING

Channels of marketing include all the business intermediaries involved in moving the dal products from the producers to the ultimate consumers. There are five market channels.

(1) The consumers can purchase directly from the dal producers. In this marketing channel the producer receives 100 percent of the consumer's payment. It is noted that most of the local dal consumers purchased dal directly from dal mills. This was beneficial both to the producers as well as consumers. The consumers could get the dal at low price and without adulteration. The producers received the cash amount immediately. This helped in increasing the liquidity of the mills facilitating a smooth turnover of money in the business activity.

(2) Dal producers sold their produce to the wholesalers. Sometimes there were advance orders for the produce which were to be fulfilled by the dal producers within the specified period. These supplies ~~as~~ reached the consumers either directly through the wholesalers or via retailers.

(3) Dal producing units sold their products to local retailers through their retail shops. Consumers purchased dal from these retailers.

(4) Consumers' Co-operative Societies' and government agencies also purchased a substantial quantity of dal directly from dal mills for selling through the public distribution system and consumer cooperative stores in urban areas as also the tribal cooperative societies.

(5) Lastly, the upcountry traders purchased dal directly from the mills or through the commission agents.

Dal processing season starts normally from February. Approximately 70 to 80 percent of the mill product was sold through broker and commission Agents. The commission agents charged Rs. 1.50 to 2 percent commission for their services, while brokers charged Rs. 0.75 to 1.00 per bag both from the sellers and purchasers. They were always in contract with agents and traders at different places within Maharashtra and ~~else~~ elsewhere.

As private trade in dal existed in Barsi market the commission agent happened to be an important agency to sell the dal products. A commission agent is normally understood as ~~is~~ "a person who himself buys or sells the product to another person and collects the payment thereof from the buyers and pays it to producer-sellers and receives by way remuneration, a commission of percentage upon the amount involved in each transaction."<sup>1</sup>

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1. Joshi V.S. and Kayamkhane; L.K. : The Maharashtra Agricultural produce (Regulation) Act, 1963 and Rules-1967, 1967. Dnyandeep Prakastan, Pune-10, 1967, p.22.

Some dal producers sold their products directly to the merchants while some others sold through their own retail shops at Pune and Bombay. For example, Bandewar Dal and Besan Mill followed the latter course for part of its produce. Generally, Barsi dal mill had no major, dal selling problem.

Similarly, they had no fear of unsold stocks. The products were in goods demand due to their reputation among traders as well as consumers. Hence, widescale advertising of the products was not necessary. Convenient transport facilities helped in smooth movement of the products to the important markets.

#### VIII

#### FINANCIAL POSITION OF DAL MILLS.

Basically, financial strength of any business depends directly on the form of organisation that it has adopted. A proprietary firm is bound to be limited in strength and capacity as the resources of an individual are limited as also his capacity to raise funds from outside sources. Partnership form helps in strengthening the capital base along with the manpower. Joint-stock company and cooperative societies are still higher forms of organization working with broader capital base and undertaking large-scale business activity.

Dal mills in Barsi town did not function at a higher level of organisational form. Because of the 22 mills 16 (72.73 percent) mills were partnership organizations, 5 (22.73 percent) operated under proprietorship and only one



was a cooperative society (4.55 percent) registered in 1974. Thus partnership organizations dominated the scene. There was a total absence of joint stock organization. Under the circumstances, production capacities of the business units were circumscribed by their financial capabilities.

#### PRESENT INVESTMENT.

Table 4.15 presents the details of present investment structure of Barsi dal mills. Investment in fixed assets comprised, (1) land and its development, (2) building, plant and machinery, (3) miscellaneous fixed assets, (4) pre-operative expenses, and (5) contingencies.

1. Land and land development :- It includes the expenses of land, cost of levelling the land cost of roads, cost of drainages and cost of fencing.
2. Building :- The expenses on factory building for main plant and equipment, laboratory, workshop, boiler/dryer house, administrative building, godown, open yard facilities for storage/handling/drying, etc., sanitary blocks, water tanks, engineering charges and architect's fee etc., are included in this item.
3. Plant and machinery :- This comprises expenses of elevators, round sieves, blowers, rollers, worms, moving sieves, accessories, belting, ball bearing, shafting, platform, electric motors including capacitors, and starters and the charges of foundation and installation.

Table 4.15

Assets position of Barsi dal mills (1982-83).

(Amount in lakh Rupees)

Name of the mills	Land and Development.	Build-ing	Plant and Machi-nery.	Miscell-aneous fixed assets	Total assets.
1. Ambikadas.	0.50	3.85	2.30	0.10	6.75
2. Ashok.	0.70	7.25	2.50	0.70	12.05
3. Bhagwant Sahakari.	3.50	6.81	2.55	0.71	10.62
4. Bandewar.	0.80	6.82	3.00	0.80	11.42
5. Datta Industries.	0.40	1.50	0.80	0.20	2.90
6. Ganpatrao Chavhan.	0.10	2.30	0.50	0.05	2.95
7. Govind.	0.15	1.20	0.60	0.10	2.05
8. Jawahar.	0.70	6.50	4.00	0.50	11.70
9. Kamal.	0.50	6.50	2.70	0.65	10.35
10. Kiran.	0.65	3.20	2.00	0.35	6.20
11. Laxminarayan.	0.20	5.30	2.00	0.50	7.60
12. Maharashtra.	0.45	4.50	1.50	0.50	6.95
13. P.D.Purohit.	0.20	1.50	0.95	0.10	2.75
14. R Badrinarayan.	0.20	8.30	2.00	1.25	11.75
15. R.B.Somani.	0.50	7.65	2.20	0.25	10.60
16. Sawala.	0.25	2.35	1.65	0.10	4.30
17. Santosh.	0.55	2.90	2.70	0.15	6.30
18. Shri Shrimal.	0.25	2.35	1.55	0.30	4.45
19. Tulja Bhavani.	0.50	1.70	1.50	0.25	3.95
20. Vasant.	0.65	6.85	2.75	0.25	10.50
21. Velgimona.	0.40	2.60	2.40	0.40	5.80
22. Vishwanath.	0.15	1.90	1.70	0.30	4.05

Source :- Office Records of the dal mills.

4. Miscellaneous fixed assets :- It includes the expenses towards furniture, office equipment, fixtures; supply of water, fire fighting equipment, etc.

5. Contingencies :- The expenses of establishment, legal charges, stationery and taxes are included in this item.

Now, referring to the details in Table 4.15, it can be seen that the asset base of the mills on an average was Rs. 7.09 lakhs in 1982-83. This does not reflect any kind of bigness of the units. On the contrary, the average corresponded with a tiny unit under the latest definition of it. Only 8 out of 22 units (36.36 percent) had their assets exceeding Rs. 10 lakhs. The solitary co-operative unit was one among them. Furthermore, only 9 units (40.91 percent) were above the average of assets and the rest 13 were below. The smallest unit owned assets worth Rs. 2.05 lakhs whereas the biggest one had Rs. 12.05 lakhs. Adoption of partnership/proprietary form of organization and low capital base usually go hand-in-hand, So was with the dal manufacturing units in Barsi town. Thus, it can be inferred that the industry had remained a small-scale one on account of low capital base reflected through the asset structure of the units.

#### SOURCES OF FINANCE.

Finance is the life blood of every business. Higher the capacity of the business unit to raise finance, larger will be its sphere of operation. In case of dal mills of Barsi, as is noted earlier, the mills are organised as proprietary or partner

Table 4.16

Sources of finance of Barsi dal mills. (1982-83).

Name of the mill	Self finan- ce.	Percentage of				Total
		Government.	Finan- cial Corpora- tion.	Banks	Friends and Rela- tives.	
1. Ambikadas.	75	-	-	20	5	100
2. Ashok.	50	-	-	50	-	100
3. Bhagwant Sahakari Dal Prakriya Sanstha Maryadit.	9	26	65 NCDC	-	-	100
4. Bandewar Dal & Besan mill.	40	-	-	60	-	100
5. Datta Industries.	80	-	-	20	-	100
6. Ganpatrao Chavhan.	90	-	-	-	10	100
7. Govind.	50	-	-	40	10	100
8. Jawahar.	55	-	<del>20</del>	<del>30</del>	15	100
9. Kamal Trading Company.	60	-	-	35	05	100
10. Kiran.	75	-	-	10	15	100
1. Laxminarayan.	70	-	-	25	05	100
2. Maharashtra.	40	-	-	60	-	100
3. P.D.Purohit.	70	-	-	10	20	100
4. R.Badrinarayan.	85	-	-	-	15	100
5. R.B.Somani.	100	-	-	-	-	100
6. Sawala	100	-	-	-	-	100
7. Santosh.	60	-	-	40	-	100
8. Shri Shrimal	40	-	-	60	-	100
9. Tuljabhawani	100	-	-	-	-	100
10. Vasant Trading Company	75	-	-	-	25	100
1. Velgimona & Company	100	-	-	-	-	100
2. Vishwanath.	70	-	-	30	-	100

Source :- Office records of the dal mills.

or partnership units with a solitary exception of a cooperative unit. Naturally, they would be relying principally, On their own savings and borrowing from outside source would play just a supplementary role. Only 4 out of 22 (18.18 percent) mills depended entirely on their own financial strength. In case of all the 22 mills (Table 4.16) taken together, self-finance averaged 67.50 percent and 13 mills (59 percent) were above average in this respect.

As regards outside finance, bank finance was conspicuous. All the mills did not resort to this source of finance. Only 14 (63.64 percent) mills borrowed from the banks. Bank finance comprised 10 to 60 % of total investment, mean percentage being 35 for those who borrowed. Friends and relatives was the second best alternative and 10 mills (45.45 percent) collected capital from this source, average borrowing being 12.50 percent. In all 7 mills (31.82 percent) borrowed from both the sources, that is, banks and friends and relative, so that an average of 24 percent capital was borrowed from the former source and 11 percent from the latter. The co-operative unit alone borrowed the biggest ~~of~~ fund (91 percent) of its capital from government and the National Cooperative Development Corporation as per the rules in this behalf. No private mill approached these agencies for financial help.

If the information in Table 4.16 juxtaposed with that in Table 4.15, it can be noticed that except 3 mills within the category of self finance above average, all the other mills had a low capital base as revealed by their assets position. Thus smaller mills had a greater tendency to rely on their

own means as far as possible and then explore the outside sources of finance only when absolutely necessary. Obviously, their volume of business was limited.

IX

PRICE OF DAL.

Price of any commodity is fundamentally a resultant of its demand and supply. Dal prices in the market also follows this fundamental principle. Rapid growth of the country's population, increasing income level and changes in consumption pattern are the important factors that have influenced consumer demand for dal in India. Demand is ever on increase as a consequence of these forces. On the supply side, production of dal has increased almost threefold during 1950-51 to 1982-83, from 35,368 quintals in 1950-51 to 1,09,379 in 1982-83. Notwithstanding this increased supply, prices of pulses and therefore of the dal rose unabated to reach to exorbitant levels. It is a national phenomenon for the reason that over the planning period pulses production remained more or less stagnant. Both area and yield failed to respond to the developmental programmes. Consequently, the mounting pressure of demand continuously worked to push up the prices of pulses. Hence, the prices of pulse products also shot up in concurrence. Dal prices in Barsi market were a reflection of the developments at the national level.

Table 4.17

Average dal prices in Barsi market (1951-52 to 1983-84).

(Rs. per quintal)

Years	Tur dal	Moong dal	Udid dal	Gram dal	Hulja dal	Math dal
1	2	3	4	5	6	7
1951-52	54-00	77-25	71-00	--	--	--
1952-53	61-50	69-00	75-00	--	-	-
1953-54	41-55	49-80	51-35	-	-	-
1954-55	25-20	28-00	32-80	15-00	-	-
1955-56	15-50	39-00	28-50	17-00	-	-
1956-57	41-70	58-50	65-50	42-50	-	-
1957-58	<del>29</del> 45-60	113-70	46-50	19-00	-	-
1958-59	54-00	48-50	40-50	93-50	-	-
1959-60	65-00	55-00	58-50	95-00	-	-
1960-61	76-80	67-00	66-00	104-00	-	-
1961-62	85-00	78-00	80-00	118-00	-	-
1962-63	155-00	140-00	138-00	160-00	-	-
1963-64	103-00	124-00	120-00	154-00	-	-
1964-65	112-00	129-40	115-00	145-00	-	-
1965-66	120-00	133-50	109-40	174-00	-	-
1966-67	161-00	196-50	210-75	176-00	-	-
1967-68	195-00	201-00	213-75	183-40	-	-
1968-69	108-35	163-90	139-50	112-20	-	-
1969-70	104-25	224-50	116-00	136-00	70-00	-
1970-71	154-50	150-00	162-00	105-00	74-00	-
1971-72	165-50	164-00	200-00	141-00	124-00	-
1972-73	292-00	295-00	298-00	205-00	120-00	-

1	2	3	4	5	6	7
1973-74	264-50	269-50	246-30	279-00	178-00	-
1974-75	306-00	336-00	275-00	260-00	155-00	-
1975-76	213-00	225-00	244-50	160-00	138-00	-
1976-77	348-60	282-00	337-00	180-00	167-00	-
1977-78	435-00	375-50	415-50	255-50	141-00	298-00
1978-79	474-50	335-00	375-00	245-00	160-00	308-00
1979-80	490-25	389-00	437-50	297-50	242-00	368-50
1980-81	575-00	410-90	500-70	350-00	268-00	405-00
1981-82	585-40	415-50	505-00	370-00	295-50	433-00
1982-83	600-50	445-40	480-00	442-50	320-00	478-00
1983-84	650-00	585-00	590-00	510-00	355-00	515-00

Source :- Compiled ~~is~~ on the basis of data collected from the dal mills.



PRICES OF HULGA AND CHAVALI DAL (1969-70 TO 1983-84).

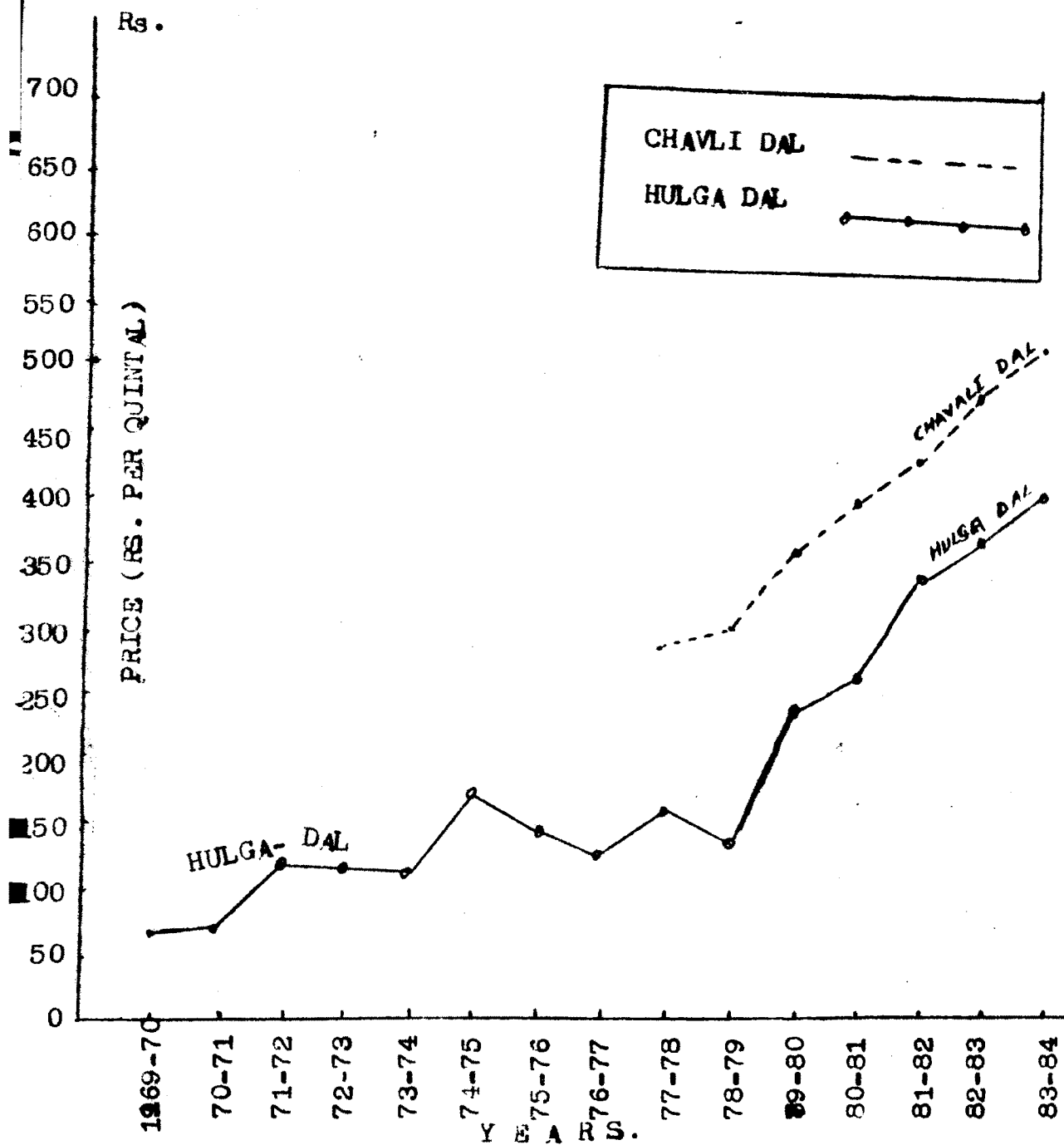


Table 4.17 provides the details to study the trend of dal prices over a period of three decades, since the beginning of the nineteen fifties. The table gives average market prices of tur, moong, urid, gram, hulga and math dals for each year since 1951-52. Price trends in respect of all categories of dals were almost parallel showing specific peculiarities during the specific time spans.

Initially, during the first five year plan period, the dal prices declined in consonance with the general position of declining prices of basic agricultural commodities. The first phase, 1951-56, was thus of falling dal prices. Prices in 1955-56 were the lowest.

The trend was reversed with the beginning of the Second Five year Plan. Prices of dal took almost a bounce in the very first year of the Second Plan and by the end of the plan either caught up the level of 1951-52 or even surpassed it. The decade of the nineteen seventies continued the price hike and took the prices to a level of nearly 200 percent increase by 1971-72 in comparison with the prices of 1951-52.

Dal prices took a big leap in 1972-73 and since then the third phase can be distinguished. Compared with 1971-72 prices, prices of tur dal, moong dal, urid dal and gram dal in 1972-73 were higher by 70, 80, 49 and 45 percent respectively. This leap upwards <sup>was</sup> continued throughout the decade with the consequence that prices of tur dal, moong dal, urid dal, gram dal and hulga dal were up in 1979-80 by 65, 32, 47, 45 and 102 percent respectively with reference to 1972-73 prices.

Fourth phase began in 1980-81 with again a sharp upturn. Price hike was so much that prices in 1983-84 over 1980-81 were higher by 33 to 71 percent, the maximum (71 percent) being in case of gram dal and minimum (33 percent) of tur dal.

In sum, scanning through the price data, it can well be realised that dal prices on many occasions showed erratic movements both ways no doubt, but the price rise was by leaps and bounds. The period since 1976-77 was particularly characteristic of steep rise in dal prices.

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