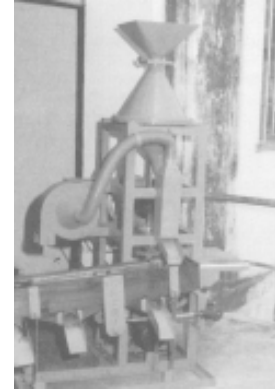


# PULSE MILLING

QUALITY AND STANDARDS : As per PFA/AGMARK specifications  
PRODUCTION CAPACITY : 300 tpa

## 1.0 PRODUCT AND ITS APPLICATIONS

Pulses commonly called 'dal' in India are essential components of the diet for both vegetarians and non-vegetarians. Pulses constitute one of the main sources of protein in Indian food. The common varieties are: Chana, Mung, Masoor, Urad and Tur dal. Of these, Masoor and Mung dal are predominantly consumed in the north-eastern region. During milling, dal is split into smaller sizes which renders it convenient for cooking.



## 2.0 MARKET POTENTIAL

The all India per capita consumption of pulses is about 2.8 kg per year. In the north-eastern region consumption of pulses is generally higher especially in States like Assam and Manipur. Conservatively, taking the national consumption norm of 2.8 kg and the total population of 4 crore in the north-eastern region, the demand for pulses is estimated at over 1 lakh tonne per year. There is no organised dal milling activity in the north-eastern region. In rural areas, dal milling activity is often carried out by rice hullers. Generally raw dal is processed in nearby areas of West Bengal and milled dal re-enters the north-eastern states. The total production of pulses in the north-eastern region is estimated to be 88,000 tonne. Assuming that 80% of this quantity is available for dal milling and that the tiny units process 15% of the available dal, there is scope for over 20 new units.

## 3.0 BASIS AND PRESUMPTIONS

- a) The unit will work for 300 days per annum on single shift basis.
- b) The unit can achieve its full capacity utilization during the 2nd year of operation.
- c) The wages for skilled workers are taken as per prevailing rates in this type of industry.
- d) Interest rate for total capital investment is calculated @ 12% per annum.
- e) The entrepreneur is expected to raise 20-25% of the capital as margin money.
- f) The unit would construct its own building.
- g) Costs of machinery and equipment are based on average prices of machinery manufacturers.

## 4.0 IMPLEMENTATION SCHEDULE

Project implementation will take a period of 8 months. Break-up of the activities and relative time for each activity is shown below:

❖ Scheme preparation and approval	:	01 month
❖ SSI provisional registration	:	1-2 months
❖ Sanction of financial supports etc.	:	2-5 months
❖ Installation of machinery and power connection	:	6-8 months
❖ Trial run and production	:	01 month

## 5.0 TECHNICAL ASPECTS

### 5.1 Location

The plant can be located at a suitable place keeping in view the availability of raw material.

### 5.2 Process of Manufacture

The stones and foreign matter are removed and the pulse is graded in 2-3 different size grades through sieves. It is soaked in water for 60-90 minutes and heaped for uniform moisture absorption and dried in the sun for 2-3 days till fully dried. It is fed into mini dal mill at 90-100 rpm. The split dal falls in the cone chamber from control plate, which is separated into whole dal, broken and husk through an aspirator. The fractions are packed separately. The Mini dal mill can mill bengal gram, bokla, kesari, pea, soybeans pigeon pea in a single operation at 100-130 kg per hour. Lentil (masoor) is milled in 2 operations with output of 100-125 kg/hour. Black gram, green gram and mothbeans are milled with double operation with output of 60-80 kg dal/hour.

**5.3 Quality Control and Standards:** As per AGMARK requirements

## 6.0 POLLUTION CONTROL

There is no major pollution problem associated with this industry except for emission of dust and disposal of waste which should be managed appropriately. The entrepreneurs are advised to take "No Objection Certificate" from the State Pollution Control Board.

## 7.0 ENERGY CONSERVATION

The moving parts should be periodically lubricated and efforts made to conserve electric power.

## 8.0 PRODUCTION CAPACITY

Quantity	:	300 pulse tpa (1tpd)
Installed capacity	:	1.2 tpd
Optimum capacity utilization	:	70%
Working days	:	300/annum
Manpower	:	4
<b>Utilities</b>		
Motive Power	:	2 kW
Water	:	1 kL/day

## 9.0 FINANCIAL ASPECTS

### 9.1 Fixed Capital

#### 9.1.1 Land & Building

		Amount (Rs. lakh)
Land 500 sq.m.	:	0.50
Built up Area 50 sq. m.	:	1.50
<b>Total cost of Land and Building</b>	:	<b>2.00</b>

### 9.1.2 Machinery and Equipment

Description	Amount (Rs. lakh)
• Semi automatic mini dal mill with 1 HP motor	
• Pulse cleaner-cum-grader, with 1 HP motor	
• Soaking drums	
• Tool kit	
• Extra sieves	
• Extra cones	0.60
Erection and electrification @ 10% of machinery cost	0.06
Office furniture & fixtures	0.14
<b>Total</b>	<b>0.80</b>

### 9.1.3 Pre-operative Expenses

Consultancy fee, project report, deposits with electricity department etc.	:	0.20
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### 9.1.4 Total Fixed Capital

(9.1.1+9.1.2+9.1.3)	:	<b>8.50</b>
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## 9.2 Recurring expenses per annum

### 9.2.1 Personnel

Designation	No.	Salary Per month	Amount (Rs.lakh)
Manager	1	2,500	0.30
Workers	3	1,500	0.54
			0.84
Perquisites @ 15%			0.13
	----		-----
<b>Total :</b>	<b>4</b>		<b>0.97</b>

### 9.2.2 Raw Material including packaging materials

Particulars	Qty.(MT)	Rate Per mt.	Amount (Rs. lakh)
Arhar (tur) dal	300	17.50	52.50
Gunny bags	3000 Nos	15 each	00.45
			-----
<b>Total:</b>			<b>52.95</b>

### 9.2.3 Utilities

	Amount (Rs. lakh)
Power 2 HP	0.30
Water 1kL/day	0.05
	-----
<b>Total:</b>	<b>0.35</b>

<b>9.2.4 Other Contingent Expenses</b>	<b>Amount (Rs. lakh)</b>	
Repairs and maintenance @10%	0.08	
Consumables & spares	}	
Transport & Travel		
Publicity		0.86
Postage & stationery		
Telephone		
Insurance	0.02	
	-----	
<b>Total:</b>	<b>0.96</b>	
<b>9.2.5 Total Recurring Expenditure</b>	<b>Amount (Rs. lakh)</b>	
(9.2.1+9.2.2+9.2.3+9.2.4)	55.23	
<b>9.3 Working Capital</b>		
Recurring Expenditure for 2 months	09.25	
<b>9.4 Total Capital Investment</b>	<b>Amount (Rs. lakh)</b>	
Fixed capital (Refer 9.1.4)	8.50	
Working capital (Refer 9.3)	0.76	
	-----	
<b>Total:</b>	<b>9.26</b>	

## 10.0 FINANCIAL ANALYSIS

<b>10.1 Cost of Production (per annum)</b>	<b>Amount (Rs. lakh)</b>
Recurring expenses (Refer 9.2.5)	09.13
Depreciation on building @5%	00.12
Depreciation on machinery @10%	00.44
Depreciation on furniture @20%	00.07
Interest on Capital Investment @12%	01.04
	-----
<b>Total:</b>	<b>10.80</b>

### 10.2 Sale Proceeds / Annual turnover

Item	Qty. (MT)	Rate per kg	Amount (Rs. lakh)
Tur (Arhar) dal (80% Recovery)	240	25	60.00
Broken (3%) recovery	9	9	00.81
Husk (16% recovery)	48	4	01.92
			-----
			62.73

### 10.3 Net Profit per year

= Sales - Cost of production  
= 62.73 - 56.89  
= Rs. 5.84 lakh

#### 10.4 Net Profit Ratio

$$\begin{aligned} &= \frac{\text{Net profit} \times 100}{\text{Sales}} \\ &= \frac{5.84 \times 100}{62.73} \\ &= 9.31\% \end{aligned}$$

#### 10.5 Rate of Return on Investment

$$\begin{aligned} &= \frac{\text{Net profit} \times 100}{\text{Capital Investment}} \\ &= \frac{5.84 \times 100}{9.26} \\ &= 47.67\% \end{aligned}$$

#### 10.6 Annual Fixed Cost

Amount (Rs. Lakh)

All depreciation	0.63
Interest	3.11
40% of salary, wages, utility, contingency	5.00
Insurance	0.20
<b>Total:</b>	<b>8.94</b>

#### 10.7 Break even Point

$$\begin{aligned} &= \frac{\text{Annual Fixed Cost} \times 100}{\text{Annual Fixed Cost} + \text{Profit}} \\ &= \frac{8.94 \times 100}{8.94 + 5.84} \\ &= 30.81\% \end{aligned}$$

### 11.0 ADDRESSES OF MACHINERY AND EQUIPMENT SUPPLIERS

Nalanda Agro Works,  
Nalanda Nagar, Kurji  
Patna – 800 010

Sidvin Machineries Pvt. Ltd.  
Site No. 10, Third stage,  
Industrial Suburb,  
Mysore – 570 008

Mysore Industries,  
2336, 9th Cross  
Basavashwara Road  
Mysore – 570 004

Ram Kumar Hari Shankar  
Upper Bazar,  
Ranchi- 834001

Radhakrishnan Keval Ram,  
Opposite Pareek Pathshala  
2343, Nahargarh Road  
Jaipur- 302 001

Shree Murugan Industries,  
Plot No. 68/W,  
Hootagalli Industrial Area  
Belawadi Post  
Mysore – 571 186

Rajendra Joshi  
B-139, Nehru Nagar,  
Jaipur- 302 016

Baswaraj Dharmareddy  
Old MIG 26, KHB Colony,  
Bidar – 585 401

Fairdeal Equipment  
7, Vishrambagh Corporation  
Housing Society,  
S.B.Road,  
Pune-411 016

Farm Steel Products  
Industrial Estate,  
Vijaywada- 520 007

Shree Durgan Agencies  
98, Moti Bhawan, Collectorganj  
Kanpur- 280 001

Samarth Industries,  
Sri Ram Chemicals Compound  
18/9, GIDC Industrial Estate, Vatwa,  
Ahmedabad-832445

Super Eng Works  
Howrah Amta Road, Dassnagar,  
Howrah-711 105

Fabcon Engineers,  
24, Netaji Subhash Road  
Kolkata-700 001

Milltech  
Sikaria House  
Fancy Bazar,  
Guwahati – 781 001

Mysore Precision Engineers  
C-123/124, Industrial Estate  
Yadavagiri, Mysore – 570 020

AMI Engineering  
Opposite Veena Cinema  
Station Road,  
Patna – 800 001

Sree Siddavinayaka Machinery  
& Equipments  
Site No. 10, 3<sup>rd</sup> Stage,  
Industrial Suburb  
Mysore – 570 008

Chandan Eng Works,  
Industrial Estate,  
Kurji  
Patna - 800010

Sathana Industries  
A-3, Industrial Estate  
Krishnagiri – 635 001, Tamilnadu

Creative Advisory Services,  
Krishna Apartments, Z1, 13<sup>th</sup> Street,  
5<sup>th</sup> Avenue, Anna Nagar,  
Chennai – 600 040

M/s. Nandi Agro Works,  
606, Retreat Point, R.P.Road,  
Secunderabad- 500 003

Dev Raj Hi-Tech Machines Ltd.  
Industrial Area  
Ferozpur – 152002 (Punjab)

Osaw Industrial Products Pvt. Ltd.  
P.O. Box No. 42, Osaw Complex,  
Jagadhri Road  
Ambala Cantt – 133 001  
(For weighing scales)

Millmore Engineering Pvt. Ltd.  
289, Old Mahabalipuram Road  
Sholinganallu  
Chennai – 600 019

Induss Services Ltd.  
11, Clive Road, 4<sup>th</sup> Floor  
Kolkata – 700 001

## **12.0 OTHER SPECIAL FEATURES**

A careful selection of product mix is necessary based on the local market demand and availability of raw materials.