

1 GREEN PEAS DEHYDRATION

1.1 Introduction

Green peas are available for around 5 months during winter season only. They are used for making vegetables, as additives in certain vegetables and for making several snack preparations. Hence, if they are made available even during off-season, there is a good market for them. A small scale unit with lower overheads can offer competitive prices. Marketing would play a critical role. Likewise, the promoters should have adequate financial resources as the finished good stock of around 5-6 months shall have to be stored.

1.2 Objective

The primary objective of the model report is to facilitate the entrepreneurs in understanding the importance of setting up unit of Green Peas Dehydration, technology and financial parameters of various components for preparation and submission of project proposal to bank for sanction of long term loan. This model report will serve as guidance to the entrepreneurs on starting up such a new project and basic technical knowledge for setting up such a facility.

1.3 Product Applications

Like any other green vegetable, green peas are available for around 4-5 months only. In view of their demand round the year, they can be preserved with the help of dehydration process and sold during off-season. It is also possible to produce powder which has got good market prospects. But this note considers only dehydration of green peas.

1.4 Raw Material Availability

Peas are the main requirement for the pea dehydration unit. The total production of the peas in the state in year 2005-06 is 1.06 lakh MT.

Districts	Production of peas (2003-04)
VIDISHA	1.50
UMARIA	0.50
TIKAMGARH	9.70
SIDHI	0.90
SHIVPURI	0.50
SHAJAPUR	0.20
SHAHDOL	0.20
SEONI	3.30
SEHORE	0.60
SATNA	0.50
SAGAR	3.70
REWA	0.40
RATLAM	0.50
RAJGARH	0.30
RAISEN	8.10

Districts	Production of peas (2003-04)
PANNA	0.80
NARSINGHPUR	8.30
MORENA	0.30
MANDLA	3.70
KHANDWA	0.10
KATNI	1.90
JHABUA	0.10
JABALPUR	19.60
INDORE	0.20
HOSHANGABAD	0.60
HARDA	0.20
GWALIOR	3.50
GUNA	0.10
DINDORI	1.40
DHAR	0.40
DEWAS	1.10
DATIA	7.60
DAMOH	2.40
CHHINDWARA	1.60
CHHATARPUR	7.00
BHOPAL	0.30
BHIND	2.30
BETUL	0.90
BALAGHAT	0.20
ASHOKNAGAR	0.20
ANUPPUR	0.50

1.5 Market Opportunities

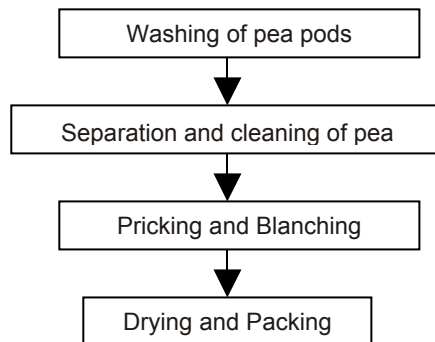
Indians generally prefer green and fresh vegetables but they are available only during seasons. Some their shelf life is not more than 3-4 days. But dehydration technique preserves them for few months and the original taste, flavour and colour is also retained. Green peas are very popular and they are used along with other vegetables in many vegetarian and continental dishes. Many fast food and snack items also include green peas. Thus apart from household demand, there is a continuous demand from restaurants, dhabas, caterers and canteens. Price is the main consideration as these eateries can not afford high prices. Brands like Mafco or Amul are in the market but their products are costly. If a small scale unit can offer competitive price of around Rs.40/- per kg then there is a large untapped market segment.

1.6 Project description

1.6.1 Process Description

Fresh, sound and green pea pods are thoroughly washed in water and then pea seeds are separated and cleaned with the help of pea podder. Then they are pricked as pricking facilitates quick and uniform drying of peas. Then they are blanched and sulphited to retain colour, taste and texture in the final product. Blanched peas are then dried in a drier wherein moisture is reduced to 7-8%. Drying time is around 3 hours. Finally dried peas are graded

and packed. On an average, the process and weight loss is 75%. The process flow chart is as under:



1.6.2 Availability of know how and compliances

CFTRI, Mysore, has successfully developed the technical know-how. Compliance with FPO and PFA Act is mandatory. BIS has standardised quality parameters vide IS 4626:1968 and it is advisable to adhere to it.

1.6.3 Capacity of Plant

The plant is expected to operate for around six months due to seasonal availability of green pea pods. The processing capacity of the plant is assumed 310 per annum. It is possible to dehydrate other vegetables during off-season but this note considers only green peas.

1.7 Project component and cost

Major components of the projects and their costs are described in the table hereunder:

1.8 Land and Building

PARTICULARS	Unit	Qty	Cost/unit	Total
LAND & BUILDING				17.50
Land	SqM	500	250.00	1.25
Land Development				
Land Area		500	500.00	2.50
Building				
Production Block				
Buildup Area	SqM	250	5,000.00	12.50
Contingencies		10%		1.25
PLANT & MACHINERY				18.00
Plant and Machinery		1	1,500,000.00	15.00
Contingencies		20%		3.00
MISCELLANEOUS FIXED ASSETS				3.00
Misc Assets	LS	1	250,000	2.50
Contingencies		20%		0.50
PRE-OPERATIVE EXPENSES				5.56
Establishment		1	346,000	3.46
Professional Charges		1	50,000	0.50
Security Deposits		1	160,000	1.60
TOTAL				44.06

1.9 Plant and Machinery

The total cost of plant and machineries is 18 lakhs.

The main machineries required for the unit are Pea Podder, Peas Pricking Machine, Blanching Tank with Thermostat Control, Fluidized Bed Dryer, Hot Water Boiler, Washing Tanks, Automatic Form, Fill and Seal Machine etc.

1.10 Building

The main production block will cost around 13.75 lakhs.

1.11 Miscellaneous Assets

A provision of Rs. 3 would take care of all the requirements.

1.12 Preliminary & Pre-operative Expenses

A provision of Rs. 5.56 lakh would take care of pre-production expenses like establishment, professional charges, security deposits etc.

1.13 Working Capital Assessment

ITEMS	Year 1	Year 3	Year 5
STOCK OF RAW MATERIAL & PACKING MATERIAL	10.50	15.00	15.00
SUNDRY DEBTORS	28.21	40.30	40.30
TOTAL	38.71	55.30	55.30
MARGIN	9.68	13.83	13.83
MPBF	29.03	41.48	41.48
INTEREST ON WC	3.19	4.56	4.56

1.14 Means of Finance

EQUITY CAPITAL			25.00%	13.43
MOFPI SUBSIDY	25%	50.00	25.00%	13.43
TERM LOAN				
FINANANCIAL INSTITUTIONS		10.00%	50.00%	26.87
-Payable half yearly Installments	10	2.70		
TOTAL			100%	53.74

1.15 Cash flow statement

PARTICULARS	Year 1	Year 3	Year 5	Year 7
SOURCES OF FUNDS				
EQUITY CAPITAL	-	-	-	-
SUBSIDY				
NET PROFIT	5.49	15.34	13.53	11.72
(INTEREST ADDED BACK)				
DEPRECIATION	2.59	2.59	2.59	2.59
PRELIMINARY EXP.W/O	0.79	0.79	0.79	0.79
INCREASE IN TERM LOAN	-	-	-	-
INCREASE IN BANK BORROWINGS-WC	29.03	6.22	-	-
TOTAL	37.92	24.95	16.92	15.11

1.16 Projected balance sheet

PARTICULARS	Year 1	Year 3	Year 5	Year 7
LIABILITIES				
EQUITY CAPITAL	13.43	13.43	13.43	13.43
RESERVES & SURPLUS	13.05	26.07	43.00	58.11
TERM LOAN	24.17	13.37	2.57	(0.00)
BANK BORROWINGS-WC	29.03	41.48	41.48	41.48
TOTAL	79.69	94.35	100.48	113.03

1.17 Profitability

Particulars	Year 1	Year 3	Year 5	Year 7
INCOME	112.84	161.20	161.20	161.20
EXPENDITURE	103.96	142.47	144.28	146.09
VARIABLE	73.69	103.69	103.69	103.69
FIXED	30.27	38.78	40.59	42.40
GROSS PROFIT	8.88	18.73	16.92	15.11
PROFIT BEFORE TAX	(0.38)	9.03	8.31	7.16
RETAINED PROFIT	(0.38)	9.03	8.31	7.16

1.18 Key Indicators

NET PRESENT VALUE at current Inflation (Rs. in lakhs)	76.96
INTERNAL RATE OF RETURN %	32.48
AVERAGE DSCR	1.63
BREAK EVEN POINT %	87.55
PAY BACK PERIOD (YEARS)	4.34

1.19 Manpower Requirement

PARTICULARS	NO.
SUPERVISORY STAFF	
MANAGER	1
ADMN STAFF	3
WORKERS	
PRODUCTION SUPERVISORS	3
SKILLED WORKERS	3
HELPERS	6

1.20 Assumptions

Project & Financing			
Contingencies on Building			10%
Contingencies on Equipment			20%
Term Loan			50%
Rate of Interest on Term Loan			10%
Subsidy Considered	Subject to ceiling		25%
Expected time of Installation		Months	6
Moratorium		Months	6
CAPACITY			
Capacity Per Annum	80% of Installed capacity	TPA	310
Number of Operational Days	DAYS		180
Working Hours Per day	Hrs		20
Yield			25%
CAPACITY UTILIZATION			

Year I	70%
Year II	85%
Year III	100%
SALES PRICE	
W S Price	52000
OTHER EXPENSE	
Commission	10.0%
Marketing Expenses	2.5%
POWER	
Connected Load	HP 40
DEPRICIATION AS PER COMPANY'S ACT	
BUILDING	3.34%
PLANT & MACHINERY	10.34%
MISC. FIXED ASSETS	7.07%
LAND & SITE DEVELOPMENT	1.63%
MAINTENANCE	
BUILDING	1.00%
PLANT & MACHINERY	3.00%
MISC. FIXED ASSETS	2.00%
LAND & SITE DEVELOPMENT	1.00%

1.20.1 Sources of technology

Technology of the project related material handling equipment is available with indigenous companies and could be set up at competitive prices. Major suppliers are understated -

- International Food Machinery Corpn, Opp. Deep Bhavan, Pandit Nehru Marg, Jamnagar- 361008
- Raylon Metal Works, PO BOX NO. 17426, Andheri (E), Mumbai-400069
- Auric Techno Services Pvt. Ltd. C-101, Shreenath Hermitage, Baner Rd., Pune-411008. Tel No. : 25898072/99113 Fax No. 25899113
- Flavourite Foods and Services Pvt. Ltd., 208, Manas Bhavan, 11 RNT Marg, Indore-542008.Tel No. : 2527644

The actual cost of projects may deviate on change of any of the assumptions.