

DEHYDRATED GREEN PEAS



1.0 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. There is a fairly large market for dehydrated peas in urban and semi-urban areas if the prices are reasonable. 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.

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.

This project profile is for setting up of a Dehydrated Pea production unit with installed capacity of 37.50 MT per annum of dehydrated pea.

2.0 MARKET POTENTIAL

Indians generally prefer green and fresh vegetables but they are available only during seasons. 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.

3.0 PROCESS DETAILS

Fresh, sound and green pea pods are thoroughly washed in water and then pea seeds are separated and cleaned with the help of pea powder. 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%.

4.0 COST OF THE PROJECT

The estimated project cost is given below.

Particulars	Amount (Rs lacs)
Land & Site Development	-
Building & Civil Works	7.43
Machinery & Equipment	7.68
Misc. Fixed Assets	1.70
Preliminary & Pre-operative Expenses	0.77
Contingencies & Escalation @ 3%	0.50
Working Capital	1.56
TOTAL	19.64

4.1 Land & Site Development: No. cost has been considered for land & site development. It is assumed that the unit will be set up in own land.

4.2 Building & Civil Works: Details of building & civil works are given below.

Particulars	Area (Sqm)	Rate (Rs)	Amount (Rs)
Work Shed cum Store (Brick wall, CGI sheet roofings, Concrete Floor)	150	4500	675000
Add: Electrification, water supply, etc @ 10%			67500
TOTAL			742500
Say (Rs. in lacs)			7.43

4.3 Machinery & Equipment: Details of machinery & equipment are given below.

Particulars	Qty	Rate (Rs)	Amount (Rs)
Pea Podder	1	75000	75000
Peas Pricking Machine	1	80000	80000
Blanching Tank with Thermostat Control	1	100000	100000
Fluidized Bed Dryer with accessories	1	175000	175000
Hot Water Boiler	1	60000	60000
Washing Tanks	2	20000	40000
Automatic Form, Fill and Seal Machine	1	100000	100000
Weighing scales, sealing machine, etc.	LS	LS	20000
Sub total			650000
Add: Transportation, taxes, etc. @ 15%			97500
TOTAL			767500
Say (Rs. in lacs)			7.68

4.4 Misc. Fixed Assets: Details of miscellaneous fixed assets are given below.

Particulars	Qty	Rate (Rs)	Amount (Rs)
Water supply system (STW boring, 3 HP pump set, storage, pipes & fittings)	1	100000	100000
40 HP power connection	LS	LS	50000
Furniture & Fixtures	LS	LS	10000
Miscellaneous items	LS	LS	10000
TOTAL			170000
Say (Rs. in lacs)			1.70

4.5 Preliminary & Pre-operative Expenses: Details of preliminary & pre-operative expenses are given below.

Particulars	Amount (Rs lacs)
Travelling expenses	0.20
Professional & other fees	0.20
Interest during implementation	0.27
Miscellaneous expenses	0.10
TOTAL	0.77

4.6 Contingencies & Escalation: Contingencies & escalation has been assumed at 3% of the cost of building & civil works, machinery & equipment and misc. fixed assets.**4.7 Working Capital:** Details of working capital are given below.

	Period (days)	Amount (Rs lacs)		
		Yr 1	Yr 2	Yr 3
Raw Materials & Consumables	7	0.11	0.13	0.15
Power	30	0.05	0.06	0.07
Salary	30	0.34	0.34	0.34
Finished Goods	15	0.45	0.50	0.55
Receivables	15	0.60	0.70	0.80
Total		1.56	1.74	1.92
Working Capital Margin in Yr 1 (100%)	1.56			

5.0 MEANS OF FINANCE

The means of finance for the project is estimated as below.

Particulars	Percent	Amount (Rs lacs)
EQUITY		
A. Equity from Promoters	40%	7.86
B. Subsidy from Central/State Govt.	-	
DEBT		
Term Loan from Banks/FIs	60%	11.78
TOTAL	100%	19.64

6.0 PROFITABILITY STATEMENT

(Rs. in lacs)

Particulars	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
A. INCOME					
Production capacity (MT)	38	38	38	38	38
Capacity utilisation	60%	70%	80%	80%	80%
Production at capacity utilisation (MT)	23	26	30	30	30
Price/MT (Rs)	65000	65000	65000	65000	65000
Income from sales/annum (Rs lakh)	14.63	17.06	19.50	19.50	19.50
B. OPERATING EXPENSES					
Raw Materials & Consumables	5.94	6.93	7.92	7.92	7.92
Power	0.63	0.73	0.84	0.84	0.84
Salary	4.11	4.15	4.19	4.23	4.27
Repair & Maintenance	0.17	0.19	0.22	0.26	0.29
Selling Expenses	0.15	0.17	0.20	0.20	0.20
Miscellaneous Expenses	0.07	0.09	0.10	0.10	0.10
Total Operating Expenses	11.06	12.26	13.46	13.53	13.61
Less: Working expenses capitalised	1.56	0.00	0.00	0.00	0.00
Operating profit	5.12	4.81	6.04	5.97	5.89
C. FINANCIAL EXPENSES					
Depreciation	0.90	0.90	0.90	0.90	0.90

Interest on Term Loan	0.94	0.79	0.56	0.34	0.12
Net Profit	3.29	3.12	4.58	4.73	4.87
Net cash accruals	4.19	4.02	5.48	5.63	5.77
Principal Repayment	0.69	2.77	2.77	2.77	2.77

6.1 Estimation of Production Capacity: Production of Dehydrated Pea per annum at installed capacity is estimated as below.

Rated plant capacity (kg/day) - processing of raw material	1200
No. of months/annum (seasonal production)	5
No. of days/month	25
Total working days	125
Quantity of raw materials processed/annum (kg)	150000
Recovery of dehydrated pea from fresh pea (%)	25%
Total production/annum at installed capacity (MT)	37.50

6.2 Raw Materials & Consumables: Expenses on raw materials & consumables at installed capacity is estimated as below.

Raw material (fresh pea) required at installed capacity (kg)	150000
Total quantity of raw material required (MT)	150
Price of fresh pea (Rs/MT)	5500
Expenses on raw materials at installed capacity (Rs)	825000
Add: Consumables, transportation charges, etc @ 20%	165000
Expenses on raw materials & consumables at installed capacity (Rs)	990000

6.3 Power: Expenses on power at installed capacity is estimated as below.

Connected load ((kw)	30
Avg. load factor	70%
Total working days	125
Hrs/day	8
Total power consumption (kwh)	20888
Rate per unit (Rs)	5
Expenses on power per annum at installed capacity (Rs)	104440

6.4 Salary: Expenses on salary in the 1st year is estimated as given below. It is assumed that salary expenses will increase @ 1% every subsequent year.

Particulars of Employees	Numbers	Salary/Month (Rs)	No. of months	Cost/annum (Rs)
Manager	Self	0	0	0
Machine Operators	3	5000	12	180000
Salesperson	2	4000	12	96000
Helpers	2	3000	12	72000
Casual workers	5	2500	5	62500
Expenses on salary in the 1st year (Rs)				410500

6.5 Repair & Maintenance: Expenses on repair & maintenance in the 1st year is estimated as given below. It is assumed that expenses on repair & maintenance will increase @ 15% every subsequent year.

Particulars	Cost (Rs)	Rate	Amount (Rs lacs)
Building & Civil Works	7.43	1%	0.07
Machinery & Equipment	7.68	1%	0.08
Misc. Fixed Assets	1.70	1%	0.02
Expenses on repair & maintenance in the 1st year (Rs)			0.17

6.6 Selling Expenses: Selling expenses have been assumed at 1% of sales.

6.7 Miscellaneous Expenses: Misc. expenses have been assumed at 0.5% of sales.

6.8 Depreciation: Depreciation has been calculated by straight line method. The details of calculation are given below.

Description	Cost (Rs)	Rate	Amount/ annum (Rs lacs)
Building & Civil Works	7.43	3.34%	0.25
Machinery & Equipment	7.68	7.07%	0.54
Misc. Fixed Assets	1.70	6.23%	0.11
TOTAL			0.90

6.9 Interest on Term Loan & Principal Repayment: Interest rate has been assumed at 8% per annum. Duration of Loan repayment has been considered for a period of 5 years including moratorium period of 9 months with equal monthly instalments. The details of calculation are given below.

(Rs in lacs)

Month	Year	1	2	3	4	5
Month 1	Opening balance	11.78	11.09	8.32	5.55	2.77
	Repayment	0.00	0.23	0.23	0.23	0.23
	Interest (8%)	0.08	0.07	0.06	0.04	0.02
	Closing balance	11.78	10.86	8.09	5.31	2.54
Month 2	Opening balance	11.78	10.86	8.09	5.31	2.54
	Repayment	0.00	0.23	0.23	0.23	0.23
	Interest	0.08	0.07	0.05	0.04	0.02
	Closing balance	11.78	10.63	7.86	5.08	2.31
Month 3	Opening balance	11.78	10.63	7.86	5.08	2.31
	Repayment	0.00	0.23	0.23	0.23	0.23
	Interest	0.08	0.07	0.05	0.03	0.02
	Closing balance	11.78	10.40	7.63	4.85	2.08
Month 4	Opening balance	11.78	10.40	7.63	4.85	2.08
	Repayment	0.00	0.23	0.23	0.23	0.23
	Interest	0.08	0.07	0.05	0.03	0.01
	Closing balance	11.78	10.17	7.39	4.62	1.85
Month 5	Opening balance	11.78	10.17	7.39	4.62	1.85
	Repayment	0.00	0.23	0.23	0.23	0.23
	Interest	0.08	0.07	0.05	0.03	0.01
	Closing balance	11.78	9.94	7.16	4.39	1.62
Month 6	Opening balance	11.78	9.94	7.16	4.39	1.62
	Repayment	0.00	0.23	0.23	0.23	0.23
	Interest	0.08	0.07	0.05	0.03	0.01
	Closing balance	11.78	9.70	6.93	4.16	1.39
Month 7	Opening balance	11.78	9.70	6.93	4.16	1.39
	Repayment	0.00	0.23	0.23	0.23	0.23
	Interest	0.08	0.06	0.05	0.03	0.01
	Closing balance	11.78	9.47	6.70	3.93	1.16

Month 8	Opening balance	11.78	9.47	6.70	3.93	1.16
	Repayment	0.00	0.23	0.23	0.23	0.23
	Interest	0.08	0.06	0.04	0.03	0.01
	Closing balance	11.78	9.24	6.47	3.70	0.92
Month 9	Opening balance	11.78	9.24	6.47	3.70	0.92
	Repayment	0.00	0.23	0.23	0.23	0.23
	Interest	0.08	0.06	0.04	0.02	0.01
	Closing balance	11.78	9.01	6.24	3.47	0.69
Month 10	Opening balance	11.78	9.01	6.24	3.47	0.69
	Repayment	0.23	0.23	0.23	0.23	0.23
	Interest	0.08	0.06	0.04	0.02	0.00
	Closing balance	11.55	8.78	6.01	3.23	0.46
Month 11	Opening balance	11.55	8.78	6.01	3.23	0.46
	Repayment	0.23	0.23	0.23	0.23	0.23
	Interest	0.08	0.06	0.04	0.02	0.00
	Closing balance	11.32	8.55	5.78	3.00	0.23
Month 12	Opening balance	11.32	8.55	5.78	3.00	0.23
	Repayment	0.23	0.23	0.23	0.23	0.23
	Interest	0.08	0.06	0.04	0.02	0.00
	Closing balance	11.09	8.32	5.55	2.77	0.00
Principal Repayment		0.69	2.77	2.77	2.77	2.77
Interest		0.94	0.79	0.56	0.34	0.12

7.0 DEBT SERVICE COVERAGE RATIO (DSCR)

(Rs. in lacs)

Year	1	2	3	4	5	Total
Profit After Tax (Net Profit)	3.29	3.12	4.58	4.73	4.87	
Depreciation	0.90	0.90	0.90	0.90	0.90	
Interest	0.94	0.79	0.56	0.34	0.12	
Total	5.12	4.81	6.04	5.97	5.89	27.83
Interest	0.94	0.79	0.56	0.34	0.12	
Loan repayment	0.69	2.77	2.77	2.77	2.77	
Total	1.63	3.56	3.34	3.11	2.89	14.53
DSCR	3.14	1.35	1.81	1.92	2.03	

Average DSCR = 1.91

8.0 BREAK EVEN POINT (BEP)

(Rs. in lacs)

Year	1	2	3
A. Net sales	14.63	17.06	19.50
B. Variable cost			
Raw Materials & Consumables	5.94	6.93	7.92
Power	0.63	0.73	0.84
Selling Expenses	0.15	0.17	0.20
Miscellaneous Expenses	0.07	0.09	0.10
Total variable cost	6.79	7.92	9.05
C. Contribution (A-B)	7.84	9.15	10.45
D. Fixed & Semi-fixed Costs			
Salary	4.11	4.15	4.19
Repair & Maintenance	0.17	0.19	0.22
Interest on Term Loan	0.94	0.79	0.56
Depreciation	0.90	0.90	0.90
Total fixed cost	6.11	6.02	5.87
E. BREAK EVEN POINT	77.92%	65.84%	56.17%
F. BEP at operating capacity	46.75%	46.09%	44.93%
G. Cash BEP	39.89%	39.23%	38.07%

9.0 INTERNAL RATE OF RETURN (IRR)

(Rs. in lacs)

Year	0	1	2	3	4	5
CASH OUTFLOW						
Capital Expenditure	17.31	0.00	0.00	0.00	0.00	0.00
Working Capital	0.00	1.56	0.18	0.18	0.00	0.00
Total (A)	17.31	1.56	0.18	0.18	0.00	0.00
CASH INFLOW						
Profit After Tax		3.29	3.12	4.58	4.73	4.87
Add: Depreciation		0.90	0.90	0.90	0.90	0.90
Add: Interest		0.94	0.79	0.56	0.34	0.12
Add: Salvage Value (15%)						2.60
Total (B)	0.00	5.12	4.81	6.04	5.97	8.48
NET FLOW (B-A)	-17.31	3.57	4.63	5.86	5.97	8.48

IRR = 17%

MACHINERY SUPPLIERS

- (a) Lithotech Engineers
No. 105, Merchant Industrial Estate, No. 7, Waliv Road, Vasai Road East, Thane - 401 208, Maharashtra, India
- (b) Associated Technocrats
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