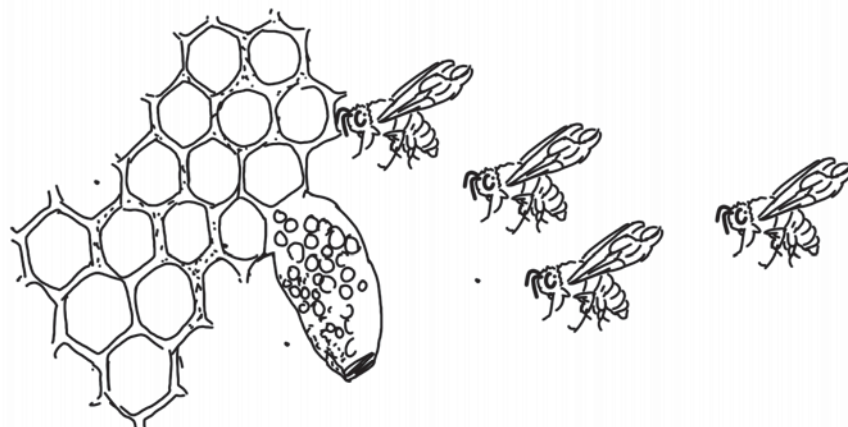


BEE-KEEPING AND HONEY PROCESSING



1.0 INTRODUCTION

Beekeeping is emerging as a very successful practice for local people in rural areas of less developed countries. Not only does the practice of beekeeping have intrinsic health benefits through providing a food source of great nutritional value which is lacking in rural areas, but beekeeping requires few inputs and capitalises on a ready supply of pollen. In rural areas there is almost an unlimited source of pollen and bees aid greatly in the natural cross pollination of local crops. Health benefits for local people reliant on small agriculture to provide food are centred around the qualities of honey in a diet which is usually dependent upon staple foods such as bananas and maize. Apiculture is a powerful way of tackling poverty at the grassroots level. Beekeeping is a decentralized industry and does not displace persons from their villages. This activity has potential to provide regular income especially in rural areas. The investment required is low and the economic returns are comparatively very high.

This project profile is for Beekeeping and Honey Processing unit with installed processing capacity of 10 Ton per annum, based on 300 working days per annum and 8 working hours per day.

2.0 MARKET POTENTIAL

Honey is a consumable product. Honey has substantial medicinal properties and is used in India since long. From

centuries, honey has been used as a natural sweetening agent and in the preparation of confectionaries. It also has vast application in the pharmaceutical industry and is a preferred consumable for people on dieting. Procurement of natural or pure honey is becoming difficult due to urbanisation and de-forestation. Simultaneously, its demand is steadily increasing as Ayurvedic medicines are becoming more and more popular. Natural honey is always in demand round the year. Another bee product, bee wax is high value commodity with application in the cosmetics, candles and paint industries.

3.0 PROCESS DETAILS

Bee-keeping activity should ideally be located where there are minimum movements of human-beings with very little noise. Forest area is, therefore, suited with many flowering plants naturally grown. Movable wooden frames with boxes are placed at such locations and these boxes are spread with honey spice to attract more and more honey-bees. These bees leave fresh honey sucked from flowers in the cells of honey-comb provided in the boxes to eat bee feed. When these cells are full of honey, they are hermetically sealed by capping with wax and then honey is extracted from these cells. Freshly extracted honey is warm and easy to bottle. It is essential to undertake proper training of extraction and bottling.

4.0 COST OF THE PROJECT

The estimated project cost is given below:

(Rs. in lacs)	
Particulars	Amount (Rs)
Land & site development	0.99
Building & civil works	0.00
Plant & Machinery	0.99
Misc. Fixed assets	0.28
Preliminary & pre-operative expenses	0.23
Contingencies & escalation @ 3%	0.04
Working capital	0.33
TOTAL	1.86

4.1 Land & Site Development: Nil. Total Land Area: 250 Sq. Ft.

4.2 Building & Civil Works: Nil.

4.3 Plant & Machinery: Details of plant & machinery are given below.

Particulars	Qty	Rate (Rs)	Amount (Rs)
Wooden Box for Beekeeping	40	2000	80000
Misc. equipments (LS)	LS	10000	10000
Sub total			90000
Add: Installation, transportation, etc @ 10%			9000
TOTAL			99000
Say (Rs. in lacs)			0.99

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

Particulars	Qty	Rate (Rs)	Amount (Rs)
Furniture's & Fixtures	LS	--	10000
Miscellaneous items	LS	--	15000
Sub total			25000
Add: Installation, transportation etc @ 10%			2500
TOTAL			27500
Say (Rs. in lacs)			0.28

4.5 Contingencies & escalation: Contingencies & escalation has been assumed at 3% of the cost of land & site development, building & civil works, plant & machinery and miscellaneous fixed assets.

4.6 Preliminary & pre-operative expenses: Details of preliminary & pre-operative expenses are given below.

(Rs. In lacs)	
Particulars	Amount (Rs)
Travelling expenses	5000
Professional & other fees	5000
Interest during implementation	3080
Miscellaneous expenses	10000
TOTAL	23080
Say (Rs. in lacs)	0.23

4.7 Working capital: Details of working capital are given below.

(Rs. in lacs)

	Period (Days)	Total Current Assets		
		Year 1	Year 2	Year 3
Raw materials	15	0.07	0.08	0.09
Power & utility	30	0.01	0.01	0.01
Salary	30	0.29	0.29	0.29
Finished Goods	15	0.23	0.24	0.25
Receivables	15	0.23	0.26	0.30
Total		0.82	0.88	0.95
Working capital margin in Year 1 (40%)	0.33			

5.0 MEANS OF FINANCE

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

(Rs. in lacs)

Particulars	Percent	Amount
<u>EQUITY</u>		
A. Equity from Promoters	40%	0.74
B. Subsidy from Central/State Govt.	-	
<u>DEBT</u>		
Term Loan from Banks/Financial Institutions	60%	1.12
TOTAL	100%	1.86

6.0 PROFITABILITY STATEMENT

(Rs. in lacs)

Particulars	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
<u>A. INCOME</u>					
Production capacity (Ton/annum)	10	10	10	10	10
Capacity utilisation	60%	70%	80%	80%	80%
Production/annum at capacity utilisation	6	7	8	8	8
Total income/annum	5.52	6.44	7.36	7.36	7.36
<u>B. OPERATING EXPENSES</u>					
Raw materials	1.72	2.01	2.30	2.30	2.30
Power & utility	0.09	0.10	0.12	0.12	0.12
Salary	3.48	3.50	3.51	3.53	3.55
Repair & Maintenance	0.02	0.02	0.02	0.03	0.03
Other Expenses	0.17	0.19	0.22	0.22	0.22
Total Operating Expenses	5.48	5.82	6.17	6.19	6.21
Operating profit	0.04	0.62	1.19	1.17	1.15
<u>C. FINANCIAL EXPENSES</u>					
Depreciation	0.07	0.07	0.07	0.07	0.07
Interest on Term Loan	0.09	0.07	0.05	0.03	0.01
Interest on Working Capital Loan	0.04	0.04	0.05	0.05	0.05
Net Profit	-0.15	0.43	1.02	1.02	1.03
Net cash accruals	-0.08	0.50	1.09	1.09	1.10
Principal Repayment	0.12	0.25	0.25	0.25	0.25

6.1 Production capacity and Sales Realisation: Total production of spice powder at 100% capacity utilization is estimated as below.

Natural Honey	10 Ton
Total production per annum at 100% capacity	10 Ton

Products	Qty	Average Rate Per Unit (Rs.)	Amount (Rs)
Natural Honey	10	92000	920000
Total Sale Turnover per annum at 100% capacity			920000

6.2 Raw materials: Total expenses on raw materials at 100% capacity utilization are estimated as below.

Particulars	Qty	Average Rate Per Unit (Rs.)	Amount (Rs)
Honey Feed	40Ton	3800	152000
Packaging Material (Plastic Jars of Different Sizes)	20000 Plastic Jars	6	120000
Secondary Packaging (Cartons)	1000 Nos.	15	15000
Expenses on raw material at 100% capacity (Rs)			287000

6.3 Power & Utility: Total expenses on power & utility at 100% capacity utilization is estimated as below.

Particulars	Quantity	Power (Kw)	Total (Kw)
Plant & Machinery	--	0.00	0.00
General Lighting	10	0.10	1.00
Total power requirement/ day (Kw)			1.00
No. of hrs/day	8		
No of days/annum	300		
Annual power requirement (kwh)	2400		
Rate per unit (Rs)	3.50		
Expenses on power (Rs)	8400		
Expenses on Water/Other Utility (Rs)	6000		
Expenses on power & utility at 100% capacity (Rs)	14400		

6.4 Salary: Total expenses on salary in the 1st year are estimated as given below. It is assumed that salary expenses will increase @ 0.5% every subsequent year.

Particulars of Employee	Numbers	Salary/ Month (Rs)	Cost/ annum (Rs)
Supervisor	1	6000	72000
Sales Personnel	2	5000	120000
Skilled Workers	2	5000	120000
Unskilled workers	1	3000	36000
Expenses on salary in the 1st year (Rs)			348000

6.5 Repair & Maintenance: Total expenses on repair & maintenance in the 1st year is estimated as given below. It is assumed that expenses on repair & maintenance will increase @ 2% every subsequent year.

(Rs. in lacs)			
Particulars	Cost (Rs)	Rate	Amount (Rs)
Building & civil works	0.00	1.00%	0.00
Plant & Machinery	0.99	2.00%	0.02
Misc. Fixed assets	0.28	1.50%	0.00
Expenses on repair & maintenance in year 1			0.02

6.6 Other Expenses: Other expenses have been assumed at 3% of sales realisation.

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

(Rs in lacs)			
Description	Cost (Rs)	Rate	Amount/ annum (Rs)
Building & civil works	0.00	3.34%	0.00
Plant & Machinery	0.99	5.28%	0.05
Misc. Fixed assets	0.28	6.33%	0.02
TOTAL			0.07

6.8 Interest on term loan & principal repayment: Interest rate has been assumed at 8%. Duration of Loan repayment has been considered for a period of 5 years including moratorium period of 6 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	1.12	0.99	0.74	0.50	0.25
	Repayment	0.00	0.02	0.02	0.02	0.02
	Interest (8.00%)	0.01	0.01	0.00	0.00	0.00
	Closing balance	1.12	0.97	0.72	0.48	0.23
Month 2	Opening balance	1.12	0.97	0.72	0.48	0.23
	Repayment	0.00	0.02	0.02	0.02	0.02
	Interest	0.01	0.01	0.00	0.00	0.00
	Closing balance	1.12	0.95	0.70	0.45	0.21
Month 3	Opening balance	1.12	0.95	0.70	0.45	0.21
	Repayment	0.00	0.02	0.02	0.02	0.02
	Interest	0.01	0.01	0.00	0.00	0.00
	Closing balance	1.12	0.93	0.68	0.43	0.19
Month 4	Opening balance	1.12	0.93	0.68	0.43	0.19
	Repayment	0.00	0.02	0.02	0.02	0.02
	Interest	0.01	0.01	0.00	0.00	0.00
	Closing balance	1.12	0.91	0.66	0.41	0.17
Month 5	Opening balance	1.12	0.91	0.66	0.41	0.17
	Repayment	0.00	0.02	0.02	0.02	0.02
	Interest	0.01	0.01	0.00	0.00	0.00
	Closing balance	1.12	0.89	0.64	0.39	0.14
Month 6	Opening balance	1.12	0.89	0.64	0.39	0.14
	Repayment	0.00	0.02	0.02	0.02	0.02
	Interest	0.01	0.01	0.00	0.00	0.00
	Closing balance	1.12	0.87	0.62	0.37	0.12
Month 7	Opening balance	1.12	0.87	0.62	0.37	0.12
	Repayment	0.02	0.02	0.02	0.02	0.02
	Interest	0.01	0.01	0.00	0.00	0.00

	Closing balance	1.10	0.85	0.60	0.35	0.10
Month 8	Opening balance	1.10	0.85	0.60	0.35	0.10
	Repayment	0.02	0.02	0.02	0.02	0.02
	Interest	0.01	0.01	0.00	0.00	0.00
	Closing balance	1.07	0.83	0.58	0.33	0.08
Month 9	Opening balance	1.07	0.83	0.58	0.33	0.08
	Repayment	0.02	0.02	0.02	0.02	0.02
	Interest	0.01	0.01	0.00	0.00	0.00
	Closing balance	1.05	0.81	0.56	0.31	0.06
Month 10	Opening balance	1.05	0.81	0.56	0.31	0.06
	Repayment	0.02	0.02	0.02	0.02	0.02
	Interest	0.01	0.01	0.00	0.00	0.00
	Closing balance	1.03	0.79	0.54	0.29	0.04
Month 11	Opening balance	1.03	0.79	0.54	0.29	0.04
	Repayment	0.02	0.02	0.02	0.02	0.02
	Interest	0.01	0.01	0.00	0.00	0.00
	Closing balance	1.01	0.76	0.52	0.27	0.02
Month 12	Opening balance	1.01	0.76	0.52	0.27	0.02
	Repayment	0.02	0.02	0.02	0.02	0.02
	Interest	0.01	0.01	0.00	0.00	0.00
	Closing balance	0.99	0.74	0.50	0.25	0.00
Principal Repayment		0.12	0.25	0.25	0.25	0.25
Interest		0.09	0.07	0.05	0.03	0.01

7.0 DEBT SERVICE COVERAGE RATIO (DSCR)

(Rs. in lacs)

Year	1	2	3	4	5
Profit After Tax (Net Profit)	-0.15	0.43	1.02	1.02	1.03
Depreciation	0.07	0.07	0.07	0.07	0.07
Interest	0.09	0.07	0.05	0.03	0.01
Total	0.00	0.57	1.14	1.12	1.11
Interest	0.09	0.07	0.05	0.03	0.01
Loan repayment	0.12	0.25	0.25	0.25	0.25
Total	0.21	0.32	0.30	0.28	0.26
DSCR	0.01	1.80	3.83	4.04	4.28

Average DSCR = 2.89

8.0 BREAK EVEN POINT (BEP)

(Rs. in lacs)

Year	1	2	3
A. Net sales	5.52	6.44	7.36
B. Variable cost			
Raw materials	1.72	2.01	2.30
Power & utility	0.09	0.10	0.12
Other expenses	0.17	0.19	0.22
Interest on Working Capital Loan	0.04	0.04	0.05
Total variable cost	2.01	2.35	2.68
C. Contribution (A-B)	3.51	4.09	4.68
D. Fixed & Semi-fixed Costs			
Salary	3.48	3.50	3.51

Repair & maintenance	0.02	0.02	0.02
Interest on Term Loan	0.09	0.07	0.05
Depreciation	0.07	0.07	0.07
Total fixed cost	3.66	3.66	3.66
E. BREAK EVEN POINT	104.39%	89.43%	78.16%
F. BEP at operating capacity	62.63%	62.60%	62.53%
G. Cash BEP	61.44%	61.41%	61.34%

9.0 INTERNAL RATE OF RETURN (IRR)

(Rs. in lacs)

Year	0	1	2	3	4	5
CASH OUTFLOW						
Capital Expenditure	1.30	0.00	0.00	0.00	0.00	0.00
Working Capital	0.00	0.82	0.07	0.07	0.00	0.00
Total (A)	1.30	0.82	0.07	0.07	0.00	0.00
CASH INFLOW						
Profit After Tax		-0.15	0.43	1.02	1.02	1.03
Add: Depreciation		0.07	0.07	0.07	0.07	0.07
Add: Interest		0.09	0.07	0.05	0.03	0.01
Add: Salvage Value						
Total (B)	0.00	0.00	0.57	1.14	1.12	1.11
NET FLOW (B-A)	-1.30	-0.81	0.51	1.08	1.12	1.11

IRR = 27%