

1 BANANA PACK HOUSE

1.1 Introduction

Availability of wide genetic diversity, varying production systems and its suitability to wide range of agro climatic conditions are the reasons for wide range adaptability of Banana in India. It is grown as homestead garden as well as on commercial plantation. Commercial production system is well irrigated, while subsistence cultivation is under rain fed farming.

Due to lack of proper post harvest infrastructure bananas have a lower shelf life and up to 30-40 % of the production are lost and many post harvest diseases also affect the banana fruits. The country losses 3-4 million tons of its produce due to improper post harvest management. Reduction in such losses in the post-harvest phase is of utmost importance not only to meet the increasing domestic demands but also to maintain competitiveness in world trade.

A pack house is a place where products are brought after harvesting, to prepare them as per the market requirements in terms of washing, brushing, waxing, any other chemical treatment grading, packing, cooling, storage and transportation. Pack house has facilities for performing these functions in such a manner that products are prepared with utmost care and perfection to avoid injury or bruising of the products. At this place, value addition is done without modifying the ultimate shape and utility of the product. Not only is the cosmetic appearance of the produce enhanced, but also various fungicides, waxes, etc., are used. The shelf life of the product is also enhanced considerably. Similarly, packaging is also done which is safe for the produce to be transported over long distance and to attract the consumer. Packaging also helps in branding the commodity, which gives long term benefits.

1.2 Objective

The broad objective of the study is to ascertain techno-economic feasibility of setting up of a pack house for Banana in the state.

1.3 Raw Material Availability

Banana production in the state in year 2002-03 is to the tune of 6.53 lakh MT on an area of around 16159 ha.

1.4 Project description

1.5 Operations to be performed

The major operations to be performed are receipt from nearby farms in form of bunches; inspection, delatexing, washing & application of fungicide and dispatch to central pack house in an insulated truck. The bunches are first cut into smaller clusters(8-10 hands), cleaned and washed with water, after which the delatexing is done followed by fungicide application and transport to the central pack house through insulated trucks.

1.6 Project Cost

Total Cost of project is Rs 623.90 lacs including contingencies @ 3% on Building estimates and @ 5% of original Plant & Machinery and other equipment estimates. The cost of project is given in the Table presented below:

This is a project promoted by state government so that the subsidy of APEDA can be availed.

Table 1 Cost of Project

COST OF PROJECT	(RS IN LACS)
PARTICULARS	AMOUNT
Land	35.60
Site Development	25.24
Infrastructure	144.64
Plant & Machinery	320.73
Misc. Fixed Assets	65.42
Security Deposits	6.60
Pre-Operative Expenses	23.30
Margin Money For Working Capital	2.38
TOTAL	623.90

1.7 Land and Building

Pack house

Area- 3400 sq. mt

1.8 Plant and Machinery

COLD STORAGE	
REFRIGERATION EQUIPMENT	31.50
PACKING & GRADING LINE	
CONVEYER SYSTEM FOR PACK HOUSE	159.34
CONVEYER SYSTEM FOR COLLECTION CENTRE	64.05
COLLECTION CENTRE	
WEIGHING EQUIP.	0.53
CRATES COLLECTION CENTRE	18.38
CRATES PACK HOUSE	9.19
QUALITY TESTING LAB	10.50
BATTERY OPERATED FORK LIFT	7.88
WEIGH BRIDGE	5.25
OTHERS	14.13
TOTAL	320.73

1.9 Miscellaneous Assets

A provision of Rs. 65.42 lakh would take care of all the requirements.

1.10 Preliminary & Pre-operative Expenses

A provision of Rs. 23.30 lakhs would take care of pre-production expenses like establishment, professional charges, security deposits etc.

1.11 Working capital assessment

ITEMS	HOLDING MONTHS	YEAR ENDING MARCH				
		Year I	Year II	Year III	Year IV	Year V
CONSUMABLES	1	1.93	3.59	4.97	4.97	4.97
FUEL & POWER	1	0.68	1.26	1.74	1.74	1.74
WATER CHARGES	1	0.41	0.77	1.06	1.06	1.06
LABOUR COST	1	3.33	5.70	7.67	7.67	7.67
PACKING EXPENSES	1	3.17	5.90	8.16	8.16	8.16
TOTAL		9.53	17.21	23.60	23.60	23.60
MARGIN	25%	2.38	4.30	5.90	5.90	5.90
MPBF	75%	7.15	12.90	17.70	17.70	17.70

1.12 Means of finance

CONTRIBUTION OF STATE GOVT.	28.88%	180.19
GRANT IN AID		
APEDA (75% of eligible components)	71.12%	443.71
TOTAL	100%	623.90

1.13 Cash flow statement

PARTICULARS	Year 1	Year 3	Year 5	Year 7	Year 9
SOURCES OF FUNDS					
INCREASE IN SHARE CAPITAL	-	-	-	-	-
SUBSIDY					
NET PROFIT	4.96	141.80	139.21	91.55	88.80
(INTEREST ADDED BACK)					
DEPRECIATION	43.46	43.46	43.46	43.46	43.46
PRELIMINARY EXP.W/O	2.33	2.33	2.33	2.33	2.33
INCREASE IN BANK BORROWINGS-WC	7.15	4.80	-	-	-
TOTAL	57.90	192.39	185.00	137.35	134.59

1.14 Projected Balance sheet

PARTICULARS	Year 1	Year 3	Year 5	Year 7	Year 9
LIABILITIES					
SHARE CAPITAL	180.19	180.19	180.19	180.19	180.19
RESERVES & SURPLUS	447.93	666.38	941.70	1,123.14	1,298.22
BANK BORROWINGS-WC	7.15	17.70	17.70	17.70	17.70
TOTAL	635.26	864.27	1,139.59	1,321.03	1,496.11

1.15 Profitability statement

PARTICULARS	Year 1	Year 3	Year 5	Year 7	Year 9	Year 10
INCOME	216.94	557.85	557.85	557.85	557.85	557.85
EXPENDITURE	166.18	370.26	372.85	372.85	372.85	372.85
VARIABLE	120.52	302.42	302.42	302.42	302.42	302.42

FIXED	45.67	67.84	70.43	70.43	70.43	70.43
GROSS PROFIT	50.76	187.59	185.00	185.00	185.00	185.00
PROFIT BEFORE TAX	4.21	139.94	137.35	137.35	137.35	148.25
PROFIT AFTER TAXES	4.21	139.94	137.35	89.69	86.94	96.93
RETAINED PROFIT	4.21	139.94	137.35	89.69	86.94	96.93

1.16 Key Indicators

Envisaged at 10th year

NET PROFIT AFTER TAX (Rs. in lakhs)	96.93
INTERNAL RATE OF RETURN %	20.02
BREAK EVEN POINT %	41.96

1.17 Payback period

Payback period for the unit is 12.48 years

1.18 Man Power Requirement

PARTICULARS	NOs.
ADMINISTRATIVE STAFF	
MANAGER-ADMN & OPRN	1
MARKETING EXECUTIVES	3
ACCOUNTS	1
DRIVERS	5
PRODUCTION	
ASTT MGR-OPERATIONS	1
ASTT MGR-QUALITY	1
CC-EXECUTIVES	3
REF. ENGINEER/SUPERVISOR	1
WORKERS	
SKILLED WORKERS	4
UNSKILLED WORKERS	8
TOTAL	28

1.19 Assumptions

CAPACITY		
Capacity Per Annum	TPA	20250
Number of Operational Days	DAYS	90
SALES PRICE		
COLLECTION CHARGES	Rs/Kg	0.10
GRADING CHARGES	Rs/Kg	0.30
PACKING & FORWARDING -DOMESTIC	Rs/Kg	0.20
PACKING & FORWARDING -EXPORTS	Rs/Kg	1.20
CRATES CHARGES	Rs/Kg	0.15
POWER		

Connected Load	KVA	165
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		0.40%
PLANT & MACHINERY		1.50%
MISC. FIXED ASSETS		1.00%

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