

PROJECT PROFILE FOR COIR PITH MANURE UNIT

| | | |
|--|----------|--|
| PRODUCT | : | COIR PITH MANURE |
| PRODUCTION CAPACITY (P.A) | | |
| (100% CAPACITY) | : | 3000 TONS |
| VALUE | : | RS.210 LAKHS |
| MONTH & YEAR OF PREPARATION | : | JUNE 2018 |
| PREPARED BY | : | COIR BOARD, MINISTRY OF MSME, GOVT OF INDIA |

• INTRODUCTION

Coir pith when inoculated with Pithplus, a spawn of edible mushroom *Pleurotus sajor caju-* speeds up the decomposition process of coir pith into valuable organic manure in a period of 30 days. Application of coir pith manure improves the physical and chemical properties of the soil and enhances the yield of crops.

• PROCESS OF MANUFACTURE

In the Bed Method of composting of coir pith, the first layer of pith is covered with a layer of PITHPLUS. The layer of PITHPLUS provides the necessary cellular organisms to biodegrade the coir pith. The first layer of coir pith is overlaid by second layer of coir pith followed by urea. Urea provides the necessary nutrient media to proliferate the growth of PITHPLUS that leads to the degradation of coir pith. The urea layer is finally topped off by a layer of pith and PITHPLUS, respectively. After addition of the urea another layer of pith is laid followed by addition of PITHPLUS .The process is continued until the height of the heap reaches a maximum of 1.5 meters. The moisture in the heap maintained at 200% by sprinkling water at frequent intervals for 30 days. The mass of coir pith is gradually converted in to organic manure which is dark coloured and enriched with Nitrogen, Phosphorous and Potassium (NPK) and micronutrients.

In order to enable bulk composting of coir pith hillocks (more than 100 MT) aeration of carbon dioxide was provided using a simple aerator assembly. Perforated 4 inch PVC pipes of length 5 meter were inserted inside the composting heap at

a distance of 1.5 m between two pipes over an area of 10 m x 6 m for composting of coir pith hillock. The system comprises 19 numbers of 5 m perforated PVC pipes. The pipes used for the trial were of diameter of 100 mm(4 ") and were embedded in the heap equally spaced from each other over an area of 10 m x 6 m arranged near the hillock. The pipes are placed vertically with the support of clay bricks and extended 1 meter above the heap. Each PVC pipe has a large number of perforations, all over its curved surface, to allow the uninterrupted free inflow of air and as an outlet for the carbon dioxide and dissipation of the heat generated during composting through convection. These pipes are connected to vertically placed pipes through T/elbow joints. About 25 cm of the vertical pipes are protruding above the top surface of the multi-layered heap of coir pith. The ends of pipes protruding outside the heap are covered with plastic fabric wire mesh cap to work as air vent and to prevent over flooding due to rains which may cause leaching out of urea and other soluble beneficial materials from the heap through the laid down pipes protruding outside the pit.

BASIS AND PRESUMPTIONS

- The Project Profile is based on 8 working hours for 1 shift in a day and 25 days in a month and the Break Even efficiency has been calculated on 70%, 80%, 90%, 90% and 100% capacity utilization.
- The rate of interest both for fixed asset and working capital have been taken as 12.5% p.a.

• TECHNICAL ASPECTS

| | | |
|---------------------------------------|---|----------|
| Installed Production capacity per day | : | 10 ton |
| Number of Shift per day | : | 1 |
| Working days p.a | : | 300 days |
| Yield wastage | : | 35% |

Capacity Utilization

| | | |
|--------------|---|-----|
| -First year | : | 70% |
| -Second year | : | 80% |

| | | |
|--------------------------------------|---|------------------|
| -Third year | : | 90% |
| -Fourth year | : | 90% |
| -Fifth year | : | 100% |
| Rate of Average Sales Realization | : | Rs. 7000 per ton |
| Rate of Average cost of raw material | : | Rs.4000 |
| Interest on term Loan | : | 12.50% |
| Interest on working capital | : | 12.50% |
| Manpower requirement | | |
| Supervisor | : | 1 |
| Unskilled worker | : | 14 |

- **FINANCIAL ASPECTS**

- i) Cost of Project**

| | | Amount |
|-------------------------|----------|----------------------|
| • Land | : | Lease/owned |
| • Work shed | : | Rs.500000/- |
| • Machinery &Equipments | : | Rs.900000/- |
| • Working Capital | | Rs.514000/- |
| | | ----- |
| Total | : | Rs. 1914000/- |
| | | ----- |

| Sl. No | Description of machines & equipments | Qty | Amount (Rs) |
|--------------|--------------------------------------|-----|-------------|
| 1 | Sewing machine | 5 | 600000.00 |
| 2 | Sprinkler | 5 | 50000.00 |
| 3 | Weighing machine | 4 | 75000.00 |
| 4 | Vessels & other equipments | | 35000.00 |
| 5 | Packing & Stitching machine | 2 | 40000.00 |
| 6 | Other miscellaneous equipments | | 100000.00 |
| Total | | | 900000.00 |

ii) Means of Finance

| | | | |
|---------------------|-----|----------|---------------------|
| • Promoters Capital | 5% | : | Rs. 96000/- |
| • Bank Term loan | 95% | : | Rs.1330000/- |
| • WC Loan from Bank | 95% | : | Rs .488000/- |
| | | | ----- |
| Total | | : | Rs.1914000/- |
| | | | ----- |

DETAILS OF THE PROFITABILITY OF THE PROJECT

Rs.in Lakhs

| Years | | 1 | 2 | 3 | 4 | 5 |
|--|------------|-------|-------|-------|-------|-------|
| Installed Production capacity per set of frame per day | <i>Ton</i> | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 |
| Number of shift/day | | 1 | 1 | 1 | 1 | 1 |

| | | | | | | |
|---|----------------------|---------------|---------------|---------------|---------------|---------------|
| Working days per annum | | 300 | 300 | 300 | 300 | 300 |
| Installed production capacity per annum | | 3000 | 3000 | 3000 | 3000 | 3000 |
| Capacity utilization | | 70% | 80% | 90% | 90% | 100% |
| Annual production quantity | Tons | 2100 | 2400 | 2700 | 2700 | 3000 |
| Annual Sales Realization | <i>Rs. 7,000</i> | 147.00 | 168.00 | 189.00 | 189.00 | 210.00 |
| Cost of Production | | | | | | |
| Raw material requirement | Tons | 2835.00 | 3240.00 | 3645.00 | 3645.00 | 4050.00 |
| Cost of raw material | Rs. 4,000 | 113.40 | 129.60 | 145.80 | 145.80 | 162.00 |
| Cost of Pith plus and urea | Rs. 120 | 3.40 | 3.89 | 4.37 | 4.37 | 4.86 |
| Packing & miscellaneous expenditure | 2.00% | 2.94 | 3.36 | 3.78 | 3.78 | 4.20 |
| Power cost | | 0.36 | 0.41 | 0.46 | 0.46 | 0.51 |
| Wages & salary | | 15.37 | 17.57 | 19.76 | 19.76 | 21.96 |
| Cost of Production | | 135.47 | 154.82 | 174.17 | 174.17 | 193.53 |
| Gross Profit | | 11.53 | 13.18 | 14.83 | 14.83 | 16.47 |
| Administrative & selling expenses | 2% | 2.94 | 3.36 | 3.78 | 3.78 | 4.20 |
| Interest on Term Loan | | 1.36 | 1.49 | 1.25 | 0.41 | 0.18 |
| Interest on Working capital | | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| Depreciation of machinery | | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Depreciation of building | | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| Total | | 6.06 | 6.61 | 6.79 | 5.95 | 6.14 |
| Net Profit | | 5.47 | 6.57 | 8.04 | 8.87 | 10.34 |

ESTIMATION OF BREAK EVEN POINT

Rs in Lakhs

| Particulars | 1 | 2 | 3 | 4 | 5 |
|-----------------------|----------|----------|----------|----------|----------|
| Capacity utilization | 70% | 80% | 90% | 90% | 100% |
| Break-even point | 73% | 69% | 60% | 49% | 43% |
| Break even Production | 1532 | 1648 | 1629 | 1312 | 1296 |

- **DEBT SERVICE COVERAGE RATIO**

Rs in Lakhs

| Particulars | 1 | 2 | 3 | 4 | 5 |
|-----------------------|----------|----------|----------|----------|----------|
| Capacity utilization | 70% | 80% | 90% | 90% | 100% |
| DSCR | 3.35 | 2.65 | 3.24 | 4.42 | 5.51 |
| Average DSCR | 3.83 | | | | |
| DSCR weighted average | 3.67 | | | | |

- **WORKING CAPITAL REQUIREMENTS**

Rs in Lakhs

| Particulars | 1 | 2 | 3 | 4 | 5 |
|----------------------|----------|----------|----------|----------|----------|
| Capacity utilization | 70% | 80% | 90% | 90% | 100% |
| Variable Cost | 135.47 | 154.82 | 174.17 | 174.17 | 193.53 |
| Fixed Cost | 6.06 | 6.61 | 6.79 | 5.95 | 6.14 |
| Working capital gap | 5.14 | 5.88 | 6.62 | 6.66 | 7.41 |

