

Dehydrated Vegetables

Product and Applications

Vegetables are a seasonal product and cannot be stored over a long period. Hence majority of the vegetables are not available during off season. To overcome the problem dehydration technique has been developed by which vegetables can be preserved for longer period and consumed whenever needed as fresh vegetable. Thus ensuring supply during off season. This value addition to the vegetables besides ensuring availability also improves its economics. In the present day life style when both the members of family work and do not find time to shop for fresh vegetables, clean them, sort them and size them before cooking, dehydrated vegetables are handy. Some of the popular vegetables such as peas, cauliflower, spinach, carrots etc. can be dehydrated and preserved for consumption through out the year. The technology for dehydration is available with CFTRI. Compliance with PFA Act for such a unit is essential.

Industry Profile and Market Assessment

In the Indian households vegetables are cooked every day and infact separately for lunch and dinner. This exercise is time consuming and laborious as fresh vegetables are to be procured cleaned, sorted and cooked. In the present day fast life the housewife can hardly spare time for such activity along with their career. Dehydrated vegetables are thus a solution to save time and ensure availability of vegetables for meals. Dehydration of these vegetables will ensure their availability through out the year. Further cooking dehydrated vegetables is also not troublesome as the pre cooking steps of sorting, cutting, sizing are eliminated and the vegetable is just soaked in water to hydrate it and then cooked. It is easier to store and transport. The major limitation with the bulk of Green vegetables is that they are grown in a limited period only lasting for 3-4 months and thus their availability is restricted to this period. Dehydration of vegetables results in its compactness and weight reduction thus it becomes easier to handle the product. This also helps in exporting the product to other countries where ever Indian cuisine is popular. It has a good demand in urban areas and metropolitan cities. Once the product establishes its Brand export opportunities can also be explored. Middle East countries and other western countries with Indian population are places where it has demand.

Manufacturing Process & Know How

The process of manufacturing is simple and for the purpose of this profile vegetables like cabbage, cauliflower, spinach, and carrots have been considered. In case of cauliflower the vegetable is chopped to make small pieces and washed. The pieces are then blanched and dried in cold air. Spinach leaves are separated from stalk, washed and dried in drier. Carrots are washed scrapped and cubed after washing. The cubes are blanched and dried. These dehydrated vegetables are packed and stored. Packing is very critical as any fungal growth would damage the product. Process and weight loss varies from product to product but on an average is 25% as the vegetables are dehydrated. Know how is available with Central Government research Laboratories. The machinery is all indigenously available.

The production capacity envisaged is 400 tonnes per year in 2 shifts and 300 days working.

Plant and Machinery

The main plant and machinery required comprise

- Washing Tanks with sets of cubers & slicers - 2 nos.
- Blanching Tank with Thermostat - 1nos.
- Stacking Trays.
- Pre cooling facility for vegetables.
- Vibrators - 2 nos.
- Fluidized bed dryer for dehydrating. - 1 nos
- Hot water boiler - 1 nos
- Automatic form filling & sealing m/c - 3 nos
- Testing equipment

The total cost of machinery is estimated to be Rs.18.10 lakhs. The unit will also require miscellaneous assets such as furniture, fixtures, storage facilities etc. the total cost of these is estimated to be Rs. 1.25 lakhs. The total requirement of power shall be 50 HP

Raw material and Packing Material

The basic raw material for the unit is different fresh vegetables. Depending on the availability of vegetables the product mix will change. Similarly the price would depend on the product mix. Thus without a firm mix it will be difficult to arrive at the actual price. On an average the raw material cost has been taken at Rs. 3000/- per tonne The unit will also require polythene bags for packing the finished product. The total cost of raw material and packing material at full capacity is estimated to be Rs. 14.50 lakhs. The total requirement is estimated to be 400 tonnes at 100% capacity. The price of raw material is taken at Rs. 3000 per tonne. At 60% capacity in 1st year the cost works out to Rs8.70 lakhs.

Land and Building

For smooth operation of the unit, it will require 500 sq. mts of open land and a built up area of 220 sq. mts. The total cost of land and building is estimated at Rs. 7.50 lakhs.

Manpower

For smooth functioning of the unit the requirement of man power is expected to be around 18 persons.

Sales person	self
Machine operators	4
Skilled Workers	4
Semi skilled workers	4
Helpers	6

The annual salary bill is estimated to be around Rs. 5.04 lakhs.:

Sales Revenue: (100% capacity)

Selling price varies depending on the product mix quality and the availability of vegetables and demand. An average price of Rs 50,000/- per tonne has been taken the annual income at installed capacity is Rs 50.00 lakhs considering the yield of 25%.

Cost of Project

Product	Rs. lakhs
Land & Building	7.50
Plant & Machinery	18.10
Other assets	1.25
Contingencies & pre-expenses.	5.05
Margin money	2.20
Total	34.10

Means of Finance

Promoters Contribution	10.10
Term Loan	24.00
Total	34.10

Profitability:(60% capacity)

Sales	30.00 (Rs. lakhs)
Raw material	8.70
Salary	5.04
Utilities	1.80
Stores & Spares	0.54
Repairs & Maintenance	0.60
Selling	2.25
Administrative expenses	0.66
Depreciation	3.35

Interest on T.L	2.64
Interest on W.C	0.50
Cost of production	26.08
Profit	3.92

Requirement of Working Capital

		Margin	W.C	Margin Money
Raw material	15 days	30%	0.40	0.10
Stock of finished goods	15 days	25%	1.40	0.35
Working expenses	1 month	100%	1.00	1.00
Sale on credit	1 month	25%	0.75	0.75
Margin money for W.C				2.20

Break Even point

40%

Machinery Suppliers

- M/S G.R.Engg works P. Ltd, Worli, Mumbai.
- M/s Raylon Metal Works J.B.Nagar, Andheri(E) Mumbai.
- M/S Laxicon Engg. Sita Bardi, Nagpur.
- M/S Techno Equipment 31, Parekh Street, Girgaum, Mumbai.

Contact for more information

Information
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