**AMLA OIL**

**INTRODUCTION**

Aonla (*Emblica officinalis*) is very hardy, prolific bearer and highly remunerative even without much after care. Aonla is the richest known natural source of vitamin. Its juice contains 20 times as much vitamin C as orange juice. Aonla is known for its pharmaceutical properties.

It is a wonder herb and one of the precious gifts of nature to man. It is the best of all acid fruits and most useful for health and body rejuvenation and prevents aging. It's mineral and vitamin contents include calcium, phosphorus, iron, carotene, thiamine, riboflavin and to vitamin C. Its calorific value is 58. 100 g of fruit provides 470 to 680 mg of vitamin C. The dehydrated berry provides 2428 to 3470 mg of vitamin C per 100 g.

It is largely cultivated in Uttar Pradesh (Azamgarh, Pratapgarh, Varanasi and Barelli districts), Gujarat, Maharashtra and Karnataka. In view of its diverse uses, its cultivation is increasing fast and the crop is becoming popular with the orchardists.

**PRODUCT CHARACTERISTICS AND SPECIFICATIONS COMMON NAME**

| Indian names | Amla  
|             | Aonla  
|             | Aawallaa  
|             | Aamalaki  
| English Name | Embelic  
|             | Indian gooseberry  

Botanical Name
Species: Emblica officinalis Gaertn.
Syn.: Phyllanthus emblica L.
Family: Euphorbiaceae

**HABIT**
A deciduous tree of small to medium size up to 5.5 meters with greenish-grey or red bark peeling off in scales and long strips.

**FRUIT**
Fruits, fleshy, 2.24 cm in diameter, 5.68 grams in weight.

The stone of the fruit is six ribbed, splitting into three segments. Each contains usually two seeds: seeds 4–5 mm long, 2–3 mm wide. Each weighs about 572 mg.

**Analysis of the fruit pulp:**

| Fruit pulp                  | 90.97% of the whole fruit by weight  
<table>
<thead>
<tr>
<th></th>
<th>70.5% moisture.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total soluble solids (juice)</td>
<td>23.8% of the juice</td>
</tr>
<tr>
<td>Acidity</td>
<td>3.28%</td>
</tr>
<tr>
<td>Total sugars</td>
<td>5.08%</td>
</tr>
<tr>
<td>Tannins</td>
<td>2.73%</td>
</tr>
<tr>
<td>Pectin</td>
<td>0.59%</td>
</tr>
<tr>
<td>Protein</td>
<td>0.75%</td>
</tr>
<tr>
<td>Minerals (represented by ash)</td>
<td>2.922%</td>
</tr>
<tr>
<td>Ascorbic acid</td>
<td>1094 mg/100 ml of juice</td>
</tr>
</tbody>
</table>
APPLICATIONS

Special Features
Amla is a very rich source of vitamin C. Its ascorbic acid content ranges from 1100 to 1700 mg per 100 grams which is said to be the second highest among all the fruits next only to the Barbados cherry (Malpighia glabra).

Medicinal uses
The root bark is useful in ulcerative stomatitis and gastrohelcosis. The bark is useful in gonorrhoea, jaundice, diarrhoea and myalgia.

The leaves are useful in conjuctuvitis, inflammation, dyspepsia, diarrhoea and dysentery. The fruits are useful in diabetes, cough, asthma, bronchitis, cephalalgia, ophthalmopathy, dyspepsia, colic, flatulence, hyperacidity, peptic ulcer, erysipelas, skin diseases, leprosy, haematemesis, inflammations, anaemia, emaciation, hepatopathy, jaundice, strangury, diarrhoea, dysentery, haemorrhages, leucorrhoea, menorrhagia, cardiac disorders, intermittent fevers and greyness of hair.

It is the principal constituent of the famous Ayurvedic restorative tonic called Chayavan Prash.

Amla Fruit is rich in Vitamin C and Pectin.

Tannins present in it retard the oxidation of Vitamin C.

Pectin decreases Serum Cholesterol in human beings. It inhibits Platelets aggregation and lowers cholesterol levels.
Amla Tonic has a haematinic and lipalytic function useful in Scurvy and Jaundice, prevents Indigestion and controls acidity as well as it is a natural source of anti-ageing.

**Cosmetics**

The standard extract of Amla contain about 3% Natural Vitamin C and upto 20% Tannin. The natural mix of above is a very effective skin care therapy.

Natural Vitamin C lends cementing support to the intercellular spaces of the cells thereby enhancing skin integrity, texture and sheen of the epidermal layer.

**Other uses**

Amla pulp is rich in vitamin C and hence can be used a natural ingredient in other food preparation such as juices, medicinal preparations to enrich vitamin C in the product.

The fruits are used for making preserves and pickles, several Ayurvedic medicinal preparations, hairwash powders, hair oils etc.

The fruit and bark is also used in tanning of leather by the village tanners.
MARKET POTENTIAL

GLOBAL SCENARIO

Patent

**Herbal Tea**

The Excel International has obtained a patent from the US Patents and Trademark Office (USPTO), for its herbal tea formulation under the title 'freeze dried ginseng berry tea', as recently as in April 2001.

HERBAL tea with a pinch of Amla and a cocktail of ingredients including clove, cinnamon, turmeric and arjuna could soon be the new offering, if the US-based Excel International succeeds in translating its invention into a marketable product.

**Hair Dyeing**

Unilever Corporation has claimed an invention that uses the extracts of Amla fruit for preparing a composition that helps in blackening of the hair. The grey hair dyeing composition is awaiting a Japanese patent.

USPTO has granted 5 patents for various innovations surrounding the use of Amla or phyllanthus emblica. The fruit of Amla is a common ingredient in indigenous systems of medicine.

Natreon Inc of the US, Creative Nutrition, Canada, and two individuals Mr Shah Eladevi of England and Ms Surendra Rohtagi of India are the assigned US patent holders.

Four applications have been filed by companies in the Japanese Patent Office, including one by Takara Shuzo Co of Japan and Unilever. *Takara*
Shuzo claims a medical product from the extracts of Amla fruit, bark and seed with beneficial effects on rheumatism and arthritis. The composition, which acts as an inhibitor, is added in food, beverages, bread or confectionery for easy consumption.

**Ayurvedic Composition**

Indian inventor, Mr Surendra Rohtagi, who has obtained a US patent, has made an ayurvedic composition consisting of Amla and other herbs to claim treatment for diseases such as TB, AIDS and flu. The preparation can be in the form of a powder, capsule or syrup.

There is just a solitary patent application pending with the Indian Patent Office filed by Lupin Laboratories entitled 'ayurvedic formulation from Amla and ritha'.

Indian extractor/formulators include the following

* The Ayur Beauty Care  
  P.O. Box 6032  
  New Delhi-8

* Babulal Sarabhai & Co.  
  Shop No. 1, Om Complex.  
  Fafadih, Raipur - 492 009

* Dabur India Ltd.  
  3, Factory Road, Near Safdarjum Hospital  
  New Delhi-110 029
* Dr. Jain's Forest Herbals Pvt. Ltd.
A-10 Raj Industrial Complex, Unit No.A-10, 2nd Floor,
Military Road Marol, Andheri East, Mumbai - 400 059

* Ensys Nature Products
52, 3rd Marine Street,
Marine Lines, Mumbai - 400 002

* Healthy Herbals
Factory & Office : S. Duraisamypuram
Sindalakarai Post Ettayapuram Taluk
Thookthukudi Dist.-628 902

* Kanhaiya Bajaj Gardens
1323, N. Kasba, Tilak Chowk,
Solapur - 413 007

* P.S.S. Krishnamurthi Exports (P) Ltd.
Office : C-18 & C-19A, SIPCOT Indl. Complex
Tuticorin-628 008

* Patel Distributor
Clare Road, Byculla,
Mumbai - 400 008

* Simla Chemicals Pvt. Ltd.
A-76, Phase-I Naraina Industrial Area,
New Delhi - 110 028
Recently launched of `Nihar Coconut Amla Hair Oil` which provides double nourishment combining twin benefits of coconut and Amla. The coconut oil penetrates hair roots and the Amla oil penetrates the hair shaft making hair soft and silky. The oil shall be available in three packs sizes – 200 ml priced at Rs 36, 100 ml at Rs 19 and 50 ml at Rs 10 across the country. It is available in a transparent bottle that is fresh green in colour with a tamper proof cap.
INDIAN DEMAND

Usage pattern
Amla is largely used as a Natural hair conditioner with a long history of use. Because of its beneficial properties, Shikai uses Amla oil as a principal conditioning agent in Shikai Amla conditioner.

TIFAC STUDY
In traditional Indian medicine, Amla is a critical component of triphala, a known ayurvedic formulation used as laxative and treating biliousness. The dried fruit is a detergent and is used as a shampoo. The plant extracts are so versatile in utility that many companies dealing in traditional medicines use Amla in their product.

TIFAC, a Govt. of India organisation says that with global corporate interest in patenting the applications of Amla increasing, Indian manufacturers have to be careful not to invite legal infringements abroad.

Formulations involving amla

Amla Shine Shampoo
De-ionized water, sodium laureth sulphate (from coconut oil), cocamidopropyl betaine (from coconuts & beets), vegetable glycerine, lauramide DEA (from coconuts), Ayurvedic herbal blend of Amla, shikakai & hibiscus; hydrolyzed wheat protein, citric acid (vitamin C), panthenol (vitamin B5), essential oil of rosemary, phenoxyethanol; methyl, ethyl, propyl and butyl parabens (food-grade preservatives), sodium chloride.
**Positive trends in Hair loss treatment (different natural products)**

**AMLA** [Emlica officinalis Gaertn] Fruit extract known to darken gray hair and promote hair growth.

**BHRINGARAJ** [Eclipta alba hassk] A herb preparation commonly used for the promotion of hair growth.

**SHIKAKAI** [Ritha Acacia concinna DC] Decoction of pods used in the elimination of dandruff.

**CAMPHOR** [Cinnammomum camphora nees & ebern] Common remedy for various scalp ailments.

**RASAUT** [India Berberi] Crude extract of the root. Common remedy for various scalp ailments.

**WHITE SOFT PARAFFIN BP** [Paraffinum Molle Album, Petroleum Jelly] Carrying agent for the herbs. Used in common home based lotions and baby oils.

**Amla In Spirulina Plus**

Spirulina is deficient in Vitamin C, a supplement that our body requires daily to prevent diseases.

Each capsule of SPIRULINA PLUS contains:

* Amla (the greatest source of Vitamin C).
* Beta-Carotene that overcomes eye problems caused by Vitamin A deficiency
* Proteins, Calcium, Magnesium and essential minerals
* Vitamin B-complex, a necessary nutritional supplement for children.

* Gama Linolenic Acid (GLA), an essential fatty acid that regulates the hormonal system. GLA is otherwise contained only in mother’s milk.

**Sampoos formulation**

**Lime shampoo**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Amla</td>
<td>1kg</td>
</tr>
<tr>
<td>Shikakai</td>
<td>2 kg</td>
</tr>
<tr>
<td>Char</td>
<td>1 kg</td>
</tr>
<tr>
<td>Charilla</td>
<td>1 kg</td>
</tr>
<tr>
<td>Khus</td>
<td>1 kg</td>
</tr>
<tr>
<td>Reetha</td>
<td>2 kg</td>
</tr>
<tr>
<td>Water</td>
<td>25 litres</td>
</tr>
<tr>
<td>Glycerine</td>
<td>4 gm</td>
</tr>
<tr>
<td>Lime juice</td>
<td>200 kg</td>
</tr>
<tr>
<td>Sodium benzoate</td>
<td>75 gm</td>
</tr>
</tbody>
</table>

**Lavender shampoo**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Amla</td>
<td>1kg</td>
</tr>
<tr>
<td>Shikakai</td>
<td>2 kg</td>
</tr>
<tr>
<td>Henna</td>
<td>1 kg</td>
</tr>
<tr>
<td>Khus</td>
<td>1 kg</td>
</tr>
<tr>
<td>Char</td>
<td>1 kg</td>
</tr>
<tr>
<td>Charilla</td>
<td>1 kg</td>
</tr>
<tr>
<td>Reetha</td>
<td>2 kg</td>
</tr>
<tr>
<td>Water</td>
<td>25 litres</td>
</tr>
<tr>
<td>Lavender oil</td>
<td>400 ml</td>
</tr>
<tr>
<td>Lime juice</td>
<td>200 kg</td>
</tr>
<tr>
<td>Sodium benzoate</td>
<td>75 gm</td>
</tr>
</tbody>
</table>
**Exports**

Exports are taking place in a small way, though not directly by the growers. Most of the plants are relatively young (less than 3 years) and hence they are unable to meet the export demand.

It is reported that around 5000 to 10000 kg per month are exported from Tamil Nadu to Singapore and Malaysia on an average. The demand is for fruit from the European countries also.

**Demand**

<table>
<thead>
<tr>
<th>Indian estimated demand for Amla oil</th>
<th>Around 1000 tonnes per annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth rate in demand</td>
<td>10 to 11% per annum</td>
</tr>
</tbody>
</table>

**INSTALLED CAPACITY**

A small unit for processing Amla can be installed with a capacity of 90 Tonnes per annum.

**PLANT AND MACHINERY**

The following items of plant and machinery are required for the project.

<table>
<thead>
<tr>
<th>Items</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil expeller 71/2 X 6X44 Chamber</td>
<td>1</td>
</tr>
<tr>
<td>Boiler</td>
<td>1</td>
</tr>
<tr>
<td>Filter Press</td>
<td>1</td>
</tr>
<tr>
<td>Elevators</td>
<td>1</td>
</tr>
<tr>
<td>Spares</td>
<td>1</td>
</tr>
<tr>
<td>Motors</td>
<td>1</td>
</tr>
<tr>
<td>Other electrical</td>
<td></td>
</tr>
</tbody>
</table>

The total value of machinery is estimated at Rs. 25.00 lakhs
MANUFACTURING PROCESS FOR AMLA OIL

"Amla oil" is prepared from dried Amla berries. The fruits, cut into pieces is dried preferably in the shade. These pieces are boiled which have been soaked in coconut oil for several days in order to extract the oil soluble vitamins from the fruit. The darkish filtered and purified oil is commonly called "Amla oil".

Amla oil is prepared from dried Amla berries which have been soaked in coconut oil for several days in order to extract the oil soluble vitamins from the fruit.

The filtered and purified oil is commonly called Amla oil.

Source of technology

* Oil Technological Research Institute,
  Jawaharlal Nehru Technological University,
  P.B.No.17,Anantapur-515 001.
  Andhra Pradesh

RAW MATERIAL REQUIREMENTS, UTILITY AND AVAILABILITY

Cultivation

Season: October to January

The cultivated Amla is basically a tropical fruit and is highly sensitive to temperatures below 32 F. It is grown as an orchard crop in several parts of warmer India.
Varieties developed by Tamil Nadu Agricultural University

<table>
<thead>
<tr>
<th>Amla Nursery</th>
<th>Amla Grafts</th>
<th>18 Months old plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique features</td>
<td>BSR 1 Amla</td>
<td>Other varieties</td>
</tr>
<tr>
<td>Plant type</td>
<td>Compact and Dense</td>
<td>Loose and Lanky</td>
</tr>
<tr>
<td>Pollination</td>
<td>Self fertile</td>
<td>Cross fertile</td>
</tr>
<tr>
<td>Cropping</td>
<td>Summer</td>
<td>Monsoon</td>
</tr>
<tr>
<td>Yield (kg/tree)</td>
<td>300</td>
<td>250</td>
</tr>
<tr>
<td>Outturn (Fresh:Dry)</td>
<td>6:11</td>
<td>2:1</td>
</tr>
<tr>
<td>Astringency</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Crude</td>
<td>FibreHigh</td>
<td>Fibreless</td>
</tr>
<tr>
<td>Vitamin C (mg/100g)</td>
<td>720</td>
<td>500</td>
</tr>
<tr>
<td>End use</td>
<td>Pharma &amp; Industries</td>
<td>Culinary only</td>
</tr>
</tbody>
</table>

Raw material and utility requirement
Basis: one tonne of Amla oil

Amla Fruit 9.16 tonnes

LOCATION, LAND AND BUILDING

<table>
<thead>
<tr>
<th>Built up area-Sq.ft</th>
<th>1500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent p.m.-Rs per .10 per sq.ft</td>
<td>15000</td>
</tr>
<tr>
<td>Advance-10 months. Rs</td>
<td>150000</td>
</tr>
</tbody>
</table>
UTILITIES

| Power       | 50     |
| I.e        | 37.30  |
| No. Of Working hours | 8     |
| Per day    | 298 Kwhrs |
| Per annum  | 89400 Kwhrs |
| Rate per unit | Rs.5.50 |
| Power charge per annum | Rs.4.92 lakhs |
| Fuel required per MT | 80     |
| Total      | 7200   |
| Rate       | Rs.42.00 |
| Fuel per annum-Furnace oil | 3.02   |

MANPOWER

<table>
<thead>
<tr>
<th>Category</th>
<th>Nos.</th>
<th>Monthly</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemist</td>
<td>1</td>
<td>12000</td>
<td>12000</td>
</tr>
<tr>
<td>Supervisor</td>
<td>1</td>
<td>9000</td>
<td>9000</td>
</tr>
<tr>
<td>Accountant</td>
<td>1</td>
<td>6000</td>
<td>6000</td>
</tr>
<tr>
<td>Substaff</td>
<td>2</td>
<td>5000</td>
<td>10000</td>
</tr>
<tr>
<td>Machine operators</td>
<td>2</td>
<td>7000</td>
<td>14000</td>
</tr>
<tr>
<td>Skilled workers</td>
<td>3</td>
<td>6000</td>
<td>18000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
<td></td>
<td><strong>69000</strong></td>
</tr>
<tr>
<td>Add Benefits</td>
<td>0.20</td>
<td></td>
<td><strong>13800</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>82800</strong></td>
</tr>
<tr>
<td>Annually</td>
<td></td>
<td>Rs.lakhs</td>
<td><strong>9.94</strong></td>
</tr>
</tbody>
</table>

SCHEDULE OF IMPLEMENTATION

If the financing arrangements are finalised the project can be implemented in three months time.
COST OF PRODUCTION AND PROFITABILITY

A cost and profitability statement projected for the first 3 years of operations is given in Annexure. The profitability is based on the following assumptions.

**Assumptions**

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed capacity</td>
<td>90 MTs of Amla oil per annum</td>
</tr>
<tr>
<td>Capacity utilisation</td>
<td>Year-1-60%</td>
</tr>
<tr>
<td></td>
<td>Year-2-70%</td>
</tr>
<tr>
<td></td>
<td>Year-3-80%</td>
</tr>
<tr>
<td>Selling price</td>
<td>Rs.320000 per MT.</td>
</tr>
<tr>
<td>Raw materials</td>
<td>As per the details given above</td>
</tr>
<tr>
<td>Packing materials</td>
<td>As per details given above</td>
</tr>
<tr>
<td>Power</td>
<td>Rs.7.94 lakhs per annum at 100%</td>
</tr>
<tr>
<td>Wages and salaries</td>
<td>Rs. 9.94 lakhs with increase 5% every year.</td>
</tr>
<tr>
<td>Repairs and Maintenance</td>
<td>Rs.1.20 lakhs per annum</td>
</tr>
<tr>
<td>Depreciation</td>
<td>Written down value method -15 % on machinery</td>
</tr>
<tr>
<td>Selling general and administrative expenses</td>
<td>Rs.4.80 lakhs per annum</td>
</tr>
<tr>
<td>Interest on Term loan</td>
<td>14% per annum</td>
</tr>
<tr>
<td>Interest on working capital</td>
<td>14 % per annum</td>
</tr>
<tr>
<td>Income tax</td>
<td>34 % on profits</td>
</tr>
</tbody>
</table>

**LIST OF MACHINERY SUPPLIERS**

1. Dhanalakshmi Industries
   201-204 Suramnagalam Road
   Salem 636 009
2. A.K enterprises
406 -4th Floor
Avanashi Road
Coimbatore-641 018

3. ABC Agro Food Machinerie (India) Pvt Ltd
284, Dr Mbedkar Road, Velandipalayam
Coimbatore-600025

4. Kumar Industrial works
43-45 SIDCo Industrial Estate, Five Roads
Salem-636004

**RAW MATERIAL SUPPLIERS**
The raw material can be sourced either by own growing or from other farmers locally

<table>
<thead>
<tr>
<th>FINANCIAL ASPECTS</th>
<th>1. COST OF PROJECT</th>
<th>2. MEANS OF FINANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[Rs. lakhs]</td>
<td></td>
</tr>
<tr>
<td>Land</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Building</td>
<td>1.50</td>
<td></td>
</tr>
<tr>
<td>Plant &amp; Machinery</td>
<td>25.00</td>
<td></td>
</tr>
<tr>
<td>Other Misc. assets</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td>Pre-Operative expenses</td>
<td>5.00</td>
<td></td>
</tr>
<tr>
<td>Margin for WC</td>
<td>6.24</td>
<td></td>
</tr>
<tr>
<td></td>
<td>------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>41.74</td>
<td></td>
</tr>
<tr>
<td></td>
<td>------</td>
<td></td>
</tr>
</tbody>
</table>

**2. MEANS OF FINANCE**

| Capital          | 21.87 |
| Term Loan        | 19.88 |
|                  | ------ |
|                  | 41.74  |
|                  | ------ |
### 3. COST OF PRODUCTION & PROFITABILITY STATEMENTS

<table>
<thead>
<tr>
<th>Years</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed Capacity MTs per annum</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Utilisation</td>
<td>60%</td>
<td>70%</td>
<td>80%</td>
</tr>
<tr>
<td>Production/Sales Mts per annum</td>
<td>54</td>
<td>63</td>
<td>72</td>
</tr>
<tr>
<td>Selling Price</td>
<td>Rs.325,000</td>
<td>MT</td>
<td></td>
</tr>
<tr>
<td>Sales Value</td>
<td>175.50</td>
<td>204.75</td>
<td>234.00</td>
</tr>
</tbody>
</table>

#### Sales Value

<table>
<thead>
<tr>
<th></th>
<th>175.50</th>
<th>204.75</th>
<th>234.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw Materials</td>
<td>129.81</td>
<td>151.45</td>
<td>173.08</td>
</tr>
<tr>
<td>Power</td>
<td>4.77</td>
<td>5.56</td>
<td>6.36</td>
</tr>
<tr>
<td>Wages &amp; Salaries</td>
<td>9.94</td>
<td>10.43</td>
<td>10.95</td>
</tr>
<tr>
<td>Repairs &amp; Maintenance</td>
<td>1.20</td>
<td>1.26</td>
<td>1.32</td>
</tr>
<tr>
<td>Depreciation</td>
<td>5.00</td>
<td>4.29</td>
<td>3.67</td>
</tr>
<tr>
<td>Cost of Production</td>
<td>150.72</td>
<td>172.99</td>
<td>195.38</td>
</tr>
</tbody>
</table>

| Admin, & General expenses | 4.80 | 5.04 | 5.29 |
| Interest on Term Loan   | 2.78 | 2.43 | 1.74 |
| Interest on Working Capital | 3.37 | 3.37 | 3.37 |

<table>
<thead>
<tr>
<th>Total</th>
<th>161.67</th>
<th>183.83</th>
<th>205.78</th>
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</thead>
<tbody>
<tr>
<td>Profit Before Tax</td>
<td>13.83</td>
<td>20.92</td>
<td>28.22</td>
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<tr>
<td>Provision for tax</td>
<td>4.70</td>
<td>7.11</td>
<td>9.59</td>
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<tr>
<td>Profit After Tax</td>
<td>9.13</td>
<td>13.81</td>
<td>18.63</td>
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<tr>
<td>Add: Depreciation</td>
<td>5.00</td>
<td>4.29</td>
<td>3.67</td>
</tr>
<tr>
<td>Cash Accruals</td>
<td>14.13</td>
<td>18.10</td>
<td>22.30</td>
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<td>4. WORKING CAPITAL:</td>
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<tr>
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<td>-------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Months</td>
<td>Values</td>
<td>%</td>
<td>Margin</td>
</tr>
<tr>
<td>Consumptions</td>
<td>Amount</td>
<td>Finance</td>
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<tr>
<td>Raw Materials</td>
<td>1.00</td>
<td>10.82</td>
<td>25%</td>
</tr>
<tr>
<td>Finished goods</td>
<td>0.50</td>
<td>6.28</td>
<td>25%</td>
</tr>
<tr>
<td>Debtors</td>
<td>1.00</td>
<td>14.63</td>
<td>10%</td>
</tr>
<tr>
<td>Expenses</td>
<td>1.00</td>
<td>0.50</td>
<td>100%</td>
</tr>
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<tr>
<td>Say--&gt;</td>
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<tr>
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</tr>
</tbody>
</table>

| 5. PROFITABILITY RATIOS BASED ON 80% UTILISATION |
|-------------------|-------------------|
| Profit after Tax | 18.63 |
| Sales | 234.00 |
| Profit before Interest and Tax | 33.33 |
| Total Investment | 67.70 |

| Profit after Tax | 18.63 |
| Promoters Capital | 21.87 |

<table>
<thead>
<tr>
<th>6. BREAK EVEN LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Cost (FC):</td>
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<tr>
<td>[Rs.lakhs]</td>
</tr>
<tr>
<td>Wages &amp; Salaries</td>
</tr>
<tr>
<td>Repairs &amp; maintenance</td>
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<tr>
<td>Depreciation</td>
</tr>
<tr>
<td>Admin. &amp; General expenses</td>
</tr>
<tr>
<td>Interest on TL</td>
</tr>
<tr>
<td></td>
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<tr>
<td>------------------------------</td>
</tr>
<tr>
<td>Profit Before Tax (P)</td>
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<tr>
<td>FC x 100</td>
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<tr>
<td>BEL = FC +P</td>
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<tr>
<td></td>
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</tbody>
</table>

Bel = 51.19% of installed capacity