

Pre-Feasibility Study

ROSE WATER



Small and Medium Enterprise Development Authority

Government of Pakistan

www.smeda.org.pk

HEAD OFFICE

LDA Plaza, 6th Floor, Egerton Road, Lahore
Tel: (042) 111-111-456, Fax: (042) 6304926-7
helpdesk@smeda.org.pk

REGIONAL OFFICE PUNJAB

8th Floor, LDA Plaza,
Egerton Road, Lahore.
Tel: (042) 111-111-456
Fax: (042) 6304926-7
helpdesk@smeda.org.pk

REGIONAL OFFICE SINDH

5th Floor, Bahria
Complex II, M.T. Khan Road,
Karachi.
Tel: (021) 111-111-456
Fax: (021) 5610572
helpdesk-khi@smeda.org.pk

REGIONAL OFFICE NWFP

Ground Floor
State Life Building
The Mall, Peshawar.
Tel: (091) 9213046-47
Fax: (091) 286908
helpdesk-pew@smeda.org.pk

REGIONAL OFFICE BALOCHISTAN

Bungalow No. 15-A
Chaman Housing Scheme
Airport Road, Quetta.
Tel: (081) 831623, 831702
Fax: (081) 831922
helpdesk-qta@smeda.org.pk

March 2008

DISCLAIMER

The purpose and scope of this information memorandum is to introduce the subject matter and provide a general idea and information on the said area. All the material included in this document is based on data/information gathered from various sources and is based on certain assumptions. Although, due care and diligence has been taken to compile this document, the contained information may vary due to any change in any of the concerned factors, and the actual results may differ substantially from the presented information. SMEDA does not assume any liability for any financial or other loss resulting from this memorandum in consequence of undertaking this activity. The prospective user of this memorandum is encouraged to carry out additional diligence and gather any information he/she feels necessary for making an informed decision.

For more information on services offered by SMEDA, please contact our website: www.smeda.org.pk

DOCUMENT CONTROL

| | |
|--------------|-------------------------|
| Document No. | PREF- 106 |
| Prepared by | SMEDA-Punjab |
| Approved by | Provincial Chief Punjab |
| Issue Date | March 2008 |
| Issued by | Library Officer |

| | | |
|-----------|--|-----------|
| 1 | INTRODUCTION TO SMEDA | 5 |
| 2 | PURPOSE OF THE DOCUMENT | 5 |
| 3 | PROJECT BRIEF | 5 |
| 4 | ROSE | 6 |
| 5 | ROSE VARIETIES | 6 |
| 5.1 | RED ROSE OF FRANCE | 6 |
| 5.2 | ROSA DEMASINA (SUCHA GULAB) | 6 |
| 5.3 | ROSA CENTIFOLIA | 6 |
| 5.4 | GRAUSS-EN-TAPLIZ | 6 |
| 6 | ROSE PRODUCTS | 7 |
| | PRODUCT | 7 |
| | MAIN INGREDIENT | 7 |
| 7 | ROSE WATER | 7 |
| 8 | VARIETIES USED IN ROSE WATER | 8 |
| 9 | BENEFITS OF ROSE WATER | 8 |
| 10 | MARKET ANALYSIS | 8 |
| 11 | PROCESSING | 9 |
| 12 | TECHNOLOGY | 9 |
| 12.1 | CAPACITY | 10 |
| 13 | PRODUCT | 10 |
| 13.1 | ROSE WATER | 10 |
| 14 | LAND & BUILDING | 11 |
| 15 | MACHINERY & EQUIPMENT REQUIREMENT | 11 |
| 15.1 | MACHINERY SUPPLIERS | 12 |
| 16 | HUMAN RESOURCES | 12 |
| 16.1 | HUMAN RESOURCES REQUIREMENT | 12 |
| 17 | OFFICE EQUIPMENT & FURNITURE | 13 |
| 18 | FINANCIAL ANALYSIS | 14 |
| 18.1 | PROJECT COST | 14 |
| 18.2 | PROJECT INVESTMENT | 14 |
| 19 | FINANCIAL PROJECTIONS | 16 |
| 19.1 | INCOME STATEMENT | 16 |
| 19.2 | BALANCE SHEET | 17 |
| 19.3 | CASH FLOW STATEMENT | 18 |

| | | |
|-----------|-----------------------|-----------|
| 20 | ASSUMPTIONS: | 19 |
| 20.1 | REVENUE GENERATION | 19 |
| 20.2 | OPERATING ASSUMPTIONS | 19 |
| 20.3 | EXPENSE ASSUMPTIONS | 19 |
| 20.4 | RAW MATERIAL COSTS | 20 |

1 INTRODUCTION TO SMEDA

The Small and Medium Enterprise Development Authority (SMEDA) was established with the objective to provide fresh impetus to the economy through the launch of an aggressive SME support program.

Since its inception in October 1998, SMEDA had adopted a sectoral SME development approach. A few priority sectors were selected on the criterion of SME presence. In depth research was conducted and comprehensive development plans were formulated after identification of impediments and retardants. The all-encompassing sectoral development strategy involved recommending changes in the regulatory environment by taking into consideration other important aspects including finance, marketing, technology and human resource development.

SMEDA has so far successfully formulated strategies for sectors including, fruits and vegetables, marble and granite, gems and jewelry, marine fisheries, leather and footwear, textiles, surgical instruments, transport and dairy. Whereas the task of SME development at a broader scale still requires more coverage and enhanced reach in terms of SMEDA's areas of operation.

Along with the sectoral focus a broad spectrum of business development services is also offered to the SMEs by SMEDA. These services include identification of viable business opportunities for potential SME investors. In order to facilitate these investors, SMEDA provides business guidance through its help desk services as well as development of project specific documents. These documents consist of information required to make well-researched investment decisions. Pre-feasibility studies and business plan development are some of the services provided to enhance the capacity of individual SMEs to exploit viable business opportunities in a better way.

This document is in the continuation of this effort to enable potential investors to make well-informed investment decisions.

2 PURPOSE OF THE DOCUMENT

The objective of the pre-feasibility study is primarily to facilitate potential entrepreneurs to facilitate investment and provide an overview about rose water business. The project pre-feasibility may form the basis of an important investment decision and in order to serve this objective, the document covers various aspects of rose water business concept development, start-up, and production, marketing, finance and business management.

3 PROJECT BRIEF

The project is about to produce rose water and packed in pet bottles of 250 ml and 750 ml, through water extraction process from rose flowers. "Rose Centifolia" is the particular species that is used for the rose water and rose oil extraction. This specie is suited enough to be cultivated in a warm climate, which can be easily located in Punjab. The project does not come up with revenue in execution phase(year 0), it takes one year

right from the sowing to harvesting of rose plants; hence sales are available in first year. From there onwards crop of flower would be available for next 10 years. All the expenditures that are required to be incurred during that phase are included in the capital cost of the project.

4 ROSE

Roses are the 'Queen of Flowers' and can add elegance and a real sense of joy to any yard. Roses are the most revered flower in the world today and have probably always been the most revered flower. Ancient civilizations revered them for their beauty, aromatic oil, and medicinal powers.

Rose petals have tannin, which is an astringent, and were used to control bleeding. Rose petals were also used as an infusion for diarrhea. Rose oil and rose water were used in China for stomach and colon problems. It would be easy to write a book about the many early uses of roses.

5 ROSE VARIETIES

5.1 Red Rose of France

This variety possesses excellent quality of rose oil and fragrance

5.2 Rosa Demasina (Sucha Gulab)

- Pakistan's best variety for rose water and oil extraction
- Oil quality and rose products of this variety have relatively more value in the market
- This variety yields flower only for 30 days in a year

5.3 Rosa Centifolia

- A Bulgarian variety brought and efficiently cultivated in Pakistan by Institute of Horticulture, University of Agriculture, Faisalabad
- Pakistan's climate is highly favorable for cultivation of this variety
- The oil content and quality is comparable with current Pakistani varieties
- It yields flower through out the year
- Horticulture institute is working for propagation and of this variety in Pakistan
- Flowers of this variety have no ornamental value. These can only be used for oil extraction and other rose product production

5.4 Grauss-en-tapliz

- Ornamental red rose
- Oil contents are low
- Inferior oil and product quality

6 ROSE PRODUCTS

Following rose products are being produced in Horticulture Institute of Agriculture University. Faisalabad.

| Product | Main Ingredient |
|--------------------|-------------------------|
| Rose perfume | Rose oil |
| Mouth Wash | Rose water and Rose oil |
| Rose water | Rose petals |
| Rose cream | Rose petal |
| Rose jam (Gulkand) | Rose petal |

- Presently rose oil is being extracted by solvent extraction method using soxhlet apparatus in Institute of Horticulture, University of Agriculture Faisalabad¹. This oil is in crude form and needs further refining.
- Institute is also in process of importing latest rose oil extraction technology named Super Critical Fluid Extractor. The residue of rose petals from this plant after oil extraction can be used in production of rose jam (Gulkand).
- Rose variety *Rosa Centifolia* is under cultivation in Institute of Horticulture, University of Agriculture Faisalabad University. Institute is working on its multiplication and providing the plants to interested farmers and private sector.
- Two big clusters of rose flower, Pattoki (Gaillan) and Kallarkahar do not have *Rosa Centifolia* variety at present. These areas can be visited and explored for cultivation of this particular variety.

7 ROSE WATER

It is suspected that the rose was probably the very first flower from which rose oil and rose water were distilled; possibly in the 10th Century Persia. Today, most of the rose oils are still produced in that region of the world. A very large quantity of rose petals is needed to produce a very small quantity of oil. Thus, it is very costly. Thankfully only a small amount of rose oil is needed in therapeutic preparations. It is not used in its concentrated state, but rather in a carrier oil such as almond, jojoba, and grapeseed.

¹ Institute of Horticulture, University of Faisalabad. Pakistan Tel: 041-9200161-70 (Ext.2944)

8 VARIETIES USED IN ROSE WATER

Three varieties of rose are used in commercial production of rose oil and rose water: Rosa Centifolia, Rosa Damascena and Rosa Gallica. The product will vary slightly in colour between these species but the therapeutic benefits are the same.

9 BENEFITS OF ROSE WATER

Aside from providing an aesthetic appeal, which contributes to the overall pleasure and feeling of well being, roses have a genuine practical use in our regimens of good health. Rose oil and rose water are derived from the flowers and rose hips have many valuable properties.

Generally rose oil and rose water (a by-product of distillation) are used topically rather than internally; with the exception of aromatherapy. In this case the rose essence may be inhaled, via steam or diffusion.

The use of the rose is far and varied. It has a long history in its use in folk remedies, especially in the area of skincare. It is suitable for all skin types, but it is especially valuable for dry, sensitive or aging skins. It has a tonic and astringent effect on the capillaries just below the skin surface, which makes it useful in diminishing the redness caused by enlarged capillaries. It is important to ensure that the product contains the genuine natural rose oil. Many manufacturers label their products containing rose essence but it could be synthetic. Synthetic rose ingredients have no therapeutic value at all! Remember, with authentic rose oil, a little goes long way. Certainly rosewater is a less expensive way to provide skincare. It is very soothing to irritated skin. It is also a tonic and antiseptic. Rosewater has been shown to be very valuable as an antiseptic in eye infections.

The rose also offers a soothing property to the nerves and emotional /psychological state of mind. It is regarded as a mild sedative and anti-depressant. It is increasingly used in treatments for conditions of stress: nervous tension, peptic ulcers, heart disease, among others. There is indication that rose essence may also positively influence digestion, bile secretion, womb disorders and circulation. In addition, a tea made with rose petals (pour 150 ml of boiling water over 1 /2 grams of rose petals) often soothes a mild sore throat.

To best use of rose oil for topical purposes (i.e. skin care), use approximately 8 drops of essential rose oil for every 10 ml of carrier oil. Apply directly onto skin. Rosewater may be used with abandon. There is no such thing as too much of it. For emotional wholeness and wellness, rose oil may also be used in a room diffuser, aromatherapy ring (a brass ring placed atop a hot light bulb will work to evaporate the essential essence throughout the room) or in steaming hot water on the stove. Whatever works!

10 MARKET ANALYSIS

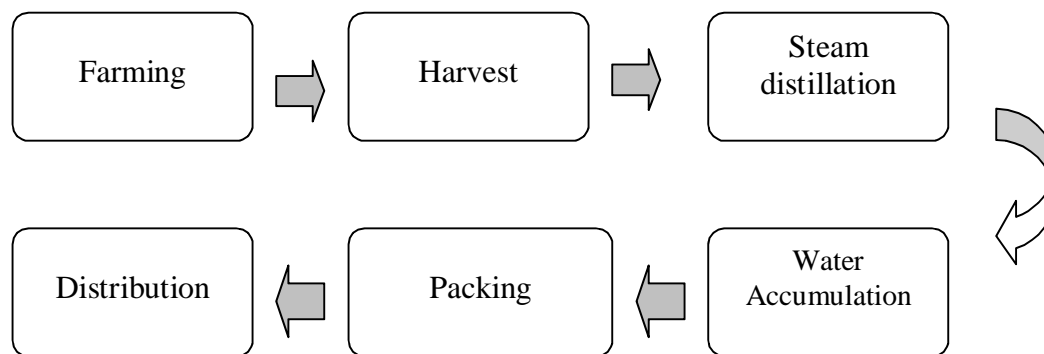
In Pakistan rose water is produce in large quantity, its major producers are *Qarshi Industries Pvt Ltd*, *Versatile Herbal Pharma*, *Hamdard* and *Marhaba Laboratories*.

Rose water is available in markets in different quantities, following tables shows the quantities available and their respective price.

Table 10-1 Product Prices

| Form | Quantity | Versatile Herbal Pharma | Qarshi Industries Pvt Ltd | Marhaba Laboratories |
|---------|----------|----------------------------|------------------------------|-------------------------|
| Dropper | 25ML | 10 | 10 | 10 |
| Bottle | 60ML | 15 | 15 | 15 |
| Bottle | 120ML | 25 | 25 | 25 |
| Bottle | 240ML | 40 | 45 | 45 |
| Bottle | 800ML | 55 | 75 | 75 |

11 PROCESSING



12 TECHNOLOGY

Rose water plant is a simple steam distillation/distillation still unit and comprises of following units.

- Main Still Container: is a big steel container in which rose petals are boiled.
- Condenser: is a cooler which is used to convert evaporated rose water back to liquid format. It runs on electricity.
- Burner: is used to boil materials in main still container. It can run on sui gas, electricity, furnace, crop wastes & cheap wood. Normal village crop waste and is most economical, while Sui gas is most suited with a blend of ease of use and cost effectiveness. Electricity and furnace are among most expensive options.
- Collector: is a container where extracted rose water is collected.

12.1 Capacity

Capacity is depended on plant size. Common and feasible sizes are 5 Kg petal unit and 10 Kg petal unit.

It takes approximately 3 hours for a complete production cycle (from petals input till rose water extraction). 1 Kg Rose petals are enough to extract 10 liters of rose water. Rose petals cost Rs.40-50/Kg depending on the season. Cost of rose water is approximately Rs.8-10 per liter which is excluding electricity costs being used for condenser.

Capacity of plant is highly dependent on the quality of machinery being used. Thus it is highly recommended to get the machinery custom made form a highly equipped manufacturing unit.

On a good unit, energy costs are approximately Rs. 4-5 per liter.

Plant productivity can vary with respect to plant quality a great deal. It may vary from 5 liters per hours to 17 liters per hour using same energy.

13 PRODUCT

13.1 Rose Water

The project will be producing rose water packed in pet bottles of 750 ml and 250 ml with a ratio of 80%-20% respectively, through water extraction process from rose flowers. Roses will be cultivated rather then purchasing from the open market, special specie of rose (*Rosa Centifolia*) is required for the project. Cuttings of *Rosa Centifolia* are available from Agriculture University Faisalabad.

Table 13-1 Project Capacity (Based on one Acer land)

| | |
|---|-----------|
| Plants available per acre | 5,000 |
| Flowers per plant in a year | 420 |
| Maximum rose flowers available per annum | 2,079,000 |
| Maximum rose flowers available per annum(Kg) | 4,158 |
| Rose water production from 1 kg flowers (in liters) | 10 |
| Maximum Rose water available per annum (liters) | 41,580 |
| Maximum bottles 750 ml per annum | 44,352 |
| Maximum bottles 250 ml per annum | 33,264 |

Table 13-2 Project Capacity (After expansion, Three Acer Land)

| | |
|---|-----------|
| Maximum rose flowers available per annum | 6,237,000 |
| Maximum rose flowers available per annum(Kg) | 12,474 |
| Maximum Rose water available per annum (liters) | 124,740 |
| Maximum bottles 750 ml per annum | 133,056 |
| Maximum bottles 250 ml per annum | 57,024 |

14 LAND & BUILDING

Area required for the project is at least 1 Acre for cultivation purposes. Suitable location is an agricultural land with access to power resources such as gas and electricity. Land can be purchased or leased depending upon the choice of entrepreneur. This feasibility assumes that land is leased / rented near by Puttoki, Kasur at Rs. 15,000 per year. Land prices vary according to the location, however for this pre feasibility report we have assumed to acquire a land for Rs.1, 000,000 per acre.

Apart from agriculture land, office and production site is also required. Due to the nature of project and plant, 1,125 sq.ft are enough for this purpose. This feasibility accounts for a purchased land and constructed building. Detail is given below in the table.

Table 14-1 Area Requirements⁴

| Description | Area Required | Total cost / Rs. |
|----------------------------|----------------------------|------------------|
| Area for cultivation | 8 kanals (1 acre) | 1,000,000 |
| Covered Area | 1,125 Sq Ft (4 marla) | 31,250 |
| Total Area required | 8 Kanal and 4 Marla | 1,031,250 |

Approximate construction requirement are given below

Table 14-2 Construction Requirements

| Item | Area required Sq Ft | Cost/ Sq Ft | Total construction Cost (Rs.) |
|----------------------------|---------------------|-------------|--------------------------------|
| Production Hall | 675 | 600 | 405,000 |
| Office | 450 | 800 | 360,000 |
| Total Building | 1,125 | | 765,000 |
| Total Land | | | 1,031,250 |
| Land & Building | | | 1,638,750 |

15 MACHINERY & EQUIPMENT REQUIREMENT

Table 15-1 Machinery & Equipment Requirement²

| Description | Qty | Total Rs. |
|------------------|-----|----------------|
| Machinery | | 124,650 |

² Hot&Cold Engineering Work, 48/12-b Jinah Street, Hassan Town, Multan Road, Lahore. Tel: 042-5413857 Mob:0300-8007724

| | | |
|------------------------|---|----------------|
| SS Tank 500 LTR | 1 | |
| SS Coil 40 ft | 1 | |
| Coil Box S.S | 1 | |
| Fitting Coil ½” S.S | 1 | |
| Others | | |
| Total Machinery | | 124,650 |

15.1 Machinery Suppliers

- PAMICO Technologies P-214, Street No.2, Shadab Colony Jhang Road , Faisalabad .Ph: 041-2551911, Fax: 041-2551117 .www.pamico.com.pk
- Fiaz Muhammad Mirza
Fastech Labs International Nigehban Pura , Railway Crossing ,Faisalabad

Apart from the machinery, 5,000 plants would require to be cultivated on one acre. Cuttings of Rosa Centifolia are available from Faisalabad Agriculture University at a cost of 6-8 Rs. per cutting. Total cost of plants is estimated to be Rs. 35,000. @ Rs. 7 per Cutting.

16 HUMAN RESOURCES

16.1 Human Resources Requirement

Following human resource would be required to run proposed project efficiently.

Table 16-1 Human resource requirements

| Designation | No. | Salary/Month | Total Salary/Year |
|------------------------------|----------|--------------|-------------------|
| Direct Labor: | | Rs. | Rs. |
| Supervisors | 1 | 10,000 | 120,000 |
| workers | 2 | 5,500 | 132,000 |
| Total Direct Labor | 3 | | 252,000 |
| Administrative Staff: | | | |
| Operations manager | 1 | 20,000 | 240,000 |
| Accountant | 1 | 10,000 | 120,000 |

| | | | |
|-----------------------------------|-----------|--------|------------------|
| Security Guards | 1 | 6,000 | 72,000 |
| Driver | 1 | 6,000 | 72,000 |
| Total Administrative Staff | 4 | | 504,000 |
| Selling Staff | | | |
| Sales executive | 2 | 12,000 | 288,000 |
| Total Selling Staff | 2 | | 288,000 |
| Total | 10 | | 1,044,000 |

In addition to manpower listed above, at least 5 workers would be required to look after rose cultivation on one acre land at a monthly salary of Rs. 5,500 each. This cost has been included in the production cost of flowers.

17 OFFICE EQUIPMENT & FURNITURE

The business will be having office furniture of around Rs. 70,000. Besides this some office computers and motor vehicles will also be there to support the staff. The cost is estimated as in the table below.

Cost of office furniture required is estimated at around Rs. 70,000.

Table 17-1 Office Furniture

| Item | Quantity | Cost per Item | Cost/ Rs. |
|---|--------------------|---------------|---------------|
| Executive Furniture | 3 Chairs, 3 tables | | 28,000 |
| Chairs | 5 | 1,500 | 7,500 |
| Tables | 1 | 10,000 | 10,000 |
| Others (Almirahs, File board, Decoration etc) | | | 24,500 |
| Total | | | 70,000 |

Estimated cost of office equipment given in table below:

Table 6-1 Office Equipment Details

| Office Equipment | Units | Rate/Unit (Rs.) | Total Amount (Rs.) |
|----------------------|-------|-----------------|--------------------|
| Computer | 1 | 28,000 | 28,000 |
| Printer | 1 | 18,000 | 18,000 |
| Fax | 1 | 10,000 | 10,000 |
| Telephone/connection | 2 | 3,700 | 7,400 |

| | | |
|--------------|----------|---------------|
| Total | 5 | 63,400 |
|--------------|----------|---------------|

Estimated Cost of Vehicles is given below.

Table 17-2: Vehicles

| Item | Cost Rs. |
|-------------------|-----------------|
| Suzuki Pick Up | 450,000 |
| Total Cost | 450,000 |

18 FINANCIAL ANALYSIS

18.1 PROJECT COST

Project is expended further in year second. Additional two Acer land is purchased after two years of operations. This expansion leads to an increase in processing capacity of machine from 23% to 69%. Cash generation resulting from expansion would start from next year. Expansion would be financed through owner's equity. The estimated total project cost is given below:

18.2 Project Investment

Total project cost for project is estimated to be around Rs.2.905 million. This includes capital expenditure as well as working capital. Details are highlighted below.

Table 18-1 Project Cost

| | |
|-------------------------------------|------------------|
| Land | 1,031,250 |
| Building | 765,000 |
| Plant and Machinery | 159,650 |
| Rosa Centifolia cuttings | 70,000 |
| Furniture and Fixtures | 63,400 |
| Office Equipment | 450,000 |
| Vehicles | 272,685 |
| Pre Operating Expenses ³ | 2,811,985 |
| Total Fixed Assets | 1,031,250 |
| Initial working Capital | 93,978 |
| Total Project Investment | 2,905,963 |

³ These expenses include the cost incurred for the first year, such as pesticides, labor force, water irrigation and other unseen expenses.

Table 18-2 Project Financing

| | | |
|------------------------------|-----|-----------|
| Debt / Lease | 50% | 1,452,981 |
| Equity Financing | 50% | 1,452,981 |
| Expansion of Land (2 Acers) | | 2,000,000 |

Table 18-3 Project Returns

| | | |
|-----------------|------|-----------|
| IRR | % | 37% |
| Pay Back period | Yrs. | 3.47 |
| NPV@ 20 % | Rs. | 3,378,714 |

19 FINANCIAL PROJECTIONS

19.1 Income Statement

| Rose Water | | | | | | | | | | |
|-------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| Projected Income Statement | | | | | | | | | | |
| Years | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
| Sales | 2,439,360 | 2,561,328 | 7,125,149 | 7,481,406 | 7,855,477 | 8,248,250 | 8,660,663 | 9,093,696 | 9,548,381 | 10,025,800 |
| CGS | 905,621 | 950,902 | 2,622,918 | 2,754,064 | 2,891,767 | 3,036,355 | 3,188,173 | 3,347,582 | 3,514,961 | 3,690,709 |
| Wages and salaries | 252,000 | 277,200 | 304,920 | 335,412 | 368,953 | 405,849 | 446,433 | 491,077 | 540,184 | 594,203 |
| Electricity | 12,000 | 13,200 | 14,520 | 15,972 | 17,569 | 19,326 | 21,259 | 23,385 | 25,723 | 28,295 |
| Repair and Maintenance | 1,597 | 1,628 | 1,661 | 1,694 | 1,728 | 1,763 | 1,798 | 1,834 | 1,871 | 1,908 |
| Depreciation | 15,965 | 15,965 | 15,965 | 15,965 | 15,965 | 15,965 | 15,965 | 15,965 | 15,965 | 15,965 |
| Cost of Sales | 1,187,182 | 1,258,895 | 2,959,984 | 3,123,107 | 3,295,982 | 3,479,258 | 3,673,628 | 3,879,842 | 4,098,704 | 4,331,080 |
| Gross Profit | 1,252,178 | 1,302,433 | 4,165,165 | 4,358,299 | 4,559,494 | 4,768,993 | 4,987,035 | 5,213,854 | 5,449,677 | 5,694,720 |
| Administrative & Selling salary | 792,000 | 871,200 | 958,320 | 1,054,152 | 1,159,567 | 1,275,524 | 1,403,076 | 1,543,384 | 1,697,722 | 1,867,495 |
| Marketing Expenses | 48,787 | 51,227 | 142,503 | 149,628 | 157,110 | 164,965 | 173,213 | 181,874 | 190,968 | 200,516 |
| Telephone & telex | 12,000 | 12,360 | 12,731 | 13,113 | 13,506 | 13,911 | 14,329 | 14,758 | 15,201 | 15,657 |
| Printing & stationery | 24,000 | 24,720 | 25,462 | 26,225 | 27,012 | 27,823 | 28,657 | 29,517 | 30,402 | 31,315 |
| Legal & professional charges | 50,000 | 51,500 | 53,045 | 54,636 | 56,275 | 57,964 | 59,703 | 61,494 | 63,339 | 65,239 |
| Insurance | - | - | - | - | - | - | - | - | - | - |
| Bad Debts | 1,355 | 1,423 | 3,958 | 4,156 | 4,364 | 4,582 | 4,811 | 5,052 | 5,305 | 5,570 |
| Entertainment | 12,000 | 12,360 | 12,731 | 13,113 | 13,506 | 13,911 | 14,329 | 14,758 | 15,201 | 15,657 |
| Factory rent | - | - | - | - | - | - | - | - | - | - |
| Depreciation on Building | 38,250 | 38,250 | 38,250 | 38,250 | 38,250 | 38,250 | 38,250 | 38,250 | 38,250 | 38,250 |
| Depreciation on Motor Vehicles | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 |
| Depreciation on F& F, MV & OE | 13,340 | 13,340 | 13,340 | 13,340 | 13,340 | 13,340 | 13,340 | 13,340 | 13,340 | 13,340 |
| Traveling & conveyance | 36,000 | 37,080 | 38,192 | 39,338 | 40,518 | 41,734 | 42,986 | 44,275 | 45,604 | 46,972 |
| Amortization | 54,537 | 54,537 | 109,074 | 109,074 | 109,074 | 54,537 | 54,537 | - | - | - |
| Others | 10,000 | 10,300 | 10,609 | 10,927 | 11,255 | 11,593 | 11,941 | 12,299 | 12,668 | 13,048 |
| Operating Expenses | 1,182,269 | 1,268,297 | 1,508,215 | 1,615,953 | 1,733,778 | 1,808,134 | 1,949,172 | 2,049,002 | 2,218,000 | 2,403,058 |
| Operating Profit | 69,909 | 34,136 | 2,656,950 | 2,742,346 | 2,825,716 | 2,960,859 | 3,037,863 | 3,164,852 | 3,231,678 | 3,291,662 |
| Less: | | | | | | | | | | |
| Financial expenses | 189,919 | 157,694 | 120,656 | 78,088 | 29,161 | - | - | - | - | - |
| | 189,919 | 157,694 | 120,656 | 78,088 | 29,161 | - | - | - | - | - |
| Profit Before Taxation | (120,011) | (123,558) | 2,536,294 | 2,664,259 | 2,796,555 | 2,960,859 | 3,037,863 | 3,164,852 | 3,231,678 | 3,291,662 |
| Income Tax | - | - | 507,259 | 532,852 | 559,311 | 592,172 | 607,573 | 632,970 | 646,336 | 658,332 |
| Net profit After Taxation | (120,011) | (123,558) | 2,029,035 | 2,131,407 | 2,237,244 | 2,368,687 | 2,430,291 | 2,531,882 | 2,585,342 | 2,633,330 |
| Retained earnings | - | (120,011) | (243,569) | 1,785,466 | 3,916,873 | 6,154,117 | 8,522,804 | 10,953,095 | 13,484,977 | 16,070,319 |
| Profit transferred to balance sheet | (120,011) | (243,569) | 1,785,466 | 3,916,873 | 6,154,117 | 8,522,804 | 10,953,095 | 13,484,977 | 16,070,319 | 18,703,649 |

19.2 Balance Sheet

| Rose Water | | | | | | | | | | | |
|--|------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Balance Sheet | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
| Capital and Reserves | | | | | | | | | | | |
| Share Capital | 1,452,981 | 1,452,981 | 1,452,981 | 1,452,981 | 1,452,981 | 1,452,981 | 1,452,981 | 1,452,981 | 1,452,981 | 1,452,981 | 1,452,981 |
| Retained Earnings | - | (120,011) | (243,569) | 1,785,466 | 3,916,873 | 6,154,117 | 8,522,804 | 10,953,095 | 13,484,977 | 16,070,319 | 18,703,649 |
| | 1,452,981 | 1,332,971 | 1,209,413 | 3,238,448 | 5,369,854 | 7,607,098 | 9,975,786 | 12,406,076 | 14,937,958 | 17,523,300 | 20,156,630 |
| Long Term Loan | 1,452,981 | 1,237,201 | 989,195 | 704,151 | 376,539 | 0 | - | - | - | - | - |
| Current Liabilities | | | | | | | | | | | |
| Tax Payable | - | - | - | 507,259 | 532,852 | 559,311 | 592,172 | 607,573 | 632,970 | 646,336 | 658,332 |
| Accounts Payable | - | 754,684 | 792,418 | 2,185,765 | 2,295,053 | 2,409,806 | 2,530,296 | 2,656,811 | 2,789,651 | 2,929,134 | 3,075,591 |
| | - | 754,684 | 792,418 | 2,693,024 | 2,827,905 | 2,969,117 | 3,122,468 | 3,264,383 | 3,422,622 | 3,575,469 | 3,733,923 |
| | 2,905,963 | 3,324,855 | 2,991,026 | 6,635,622 | 8,574,298 | 10,576,215 | 13,098,253 | 15,670,460 | 18,360,580 | 21,098,770 | 23,890,553 |
| Fixed Assets | | | | | | | | | | | |
| Land | 1,031,250 | 1,031,250 | 3,031,250 | 3,031,250 | 3,031,250 | 3,031,250 | 3,031,250 | 3,031,250 | 3,031,250 | 3,031,250 | 3,031,250 |
| Building | 765,000 | 726,750 | 688,500 | 650,250 | 612,000 | 573,750 | 535,500 | 497,250 | 459,000 | 420,750 | 382,500 |
| Plant and Machinery | 159,650 | 143,685 | 127,720 | 111,755 | 95,790 | 79,825 | 63,860 | 47,895 | 31,930 | 15,965 | - |
| Furniture an Fixture | 70,000 | 63,000 | 56,000 | 49,000 | 42,000 | 35,000 | 28,000 | 21,000 | 14,000 | 7,000 | - |
| Office Equipment | 63,400 | 57,060 | 50,720 | 44,380 | 38,040 | 31,700 | 25,360 | 19,020 | 12,680 | 6,340 | - |
| Vehicles | 450,000 | 360,000 | 270,000 | 180,000 | 90,000 | - | - | - | - | - | - |
| Fixed Assets | 2,539,300 | 2,381,745 | 4,224,190 | 4,066,635 | 3,909,080 | 3,751,525 | 3,593,970 | 3,436,415 | 3,278,860 | 3,121,305 | 2,963,750 |
| Pre-operating expenses & Contengencies | 272,685 | 218,148 | 436,296 | 327,222 | 218,148 | 109,074 | 54,537 | - | - | - | - |
| Current Assets | | | | | | | | | | | |
| Advance rent | - | - | - | - | - | - | - | - | - | - | - |
| Raw Material Inventory | - | - | - | - | - | - | - | - | - | - | - |
| Finished Goods Inventory | - | 25,156 | 26,414 | 72,859 | 76,502 | 80,327 | 84,343 | 88,560 | 92,988 | 97,638 | 102,520 |
| A/C Receivable(Net of Bad Debts) | - | 66,405 | 69,725 | 193,962 | 203,661 | 213,844 | 224,536 | 235,762 | 247,551 | 259,928 | 272,925 |
| Cash/Bank | 93,978 | 633,401 | (1,765,599) | 1,974,944 | 4,166,908 | 6,421,446 | 9,140,868 | 11,909,722 | 14,741,181 | 17,619,899 | 20,551,359 |
| | 93,978 | 724,962 | (1,669,460) | 2,241,765 | 4,447,070 | 6,715,616 | 9,449,746 | 12,234,045 | 15,081,720 | 17,977,465 | 20,926,803 |
| | 2,905,963 | 3,324,855 | 2,991,026 | 6,635,622 | 8,574,298 | 10,576,215 | 13,098,253 | 15,670,460 | 18,360,580 | 21,098,770 | 23,890,553 |
| | - | - | - | - | - | - | - | - | - | - | - |

19.3 Cash Flow Statement

| Rose Water | | | | | | | | | | | |
|--|---------------|----------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Cash Flow Statement | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
| Operating activities | | | | | | | | | | | |
| Net profit | - | (120,011) | (123,558) | 2,029,035 | 2,131,407 | 2,237,244 | 2,368,687 | 2,430,291 | 2,531,882 | 2,585,342 | 2,633,330 |
| Amortization (Pre-operational Expenses) | - | 54,537 | 54,537 | 109,074 | 109,074 | 109,074 | 54,537 | 54,537 | - | - | - |
| Depreciation | - | 157,555 | 157,555 | 157,555 | 157,555 | 157,555 | 157,555 | 157,555 | 157,555 | 157,555 | 157,555 |
| Raw Material Inventory | - | - | - | - | - | - | - | - | - | - | - |
| Finished Goods Inventory | - | (25,156) | (1,258) | (46,445) | (3,643) | (3,825) | (4,016) | (4,217) | (4,428) | (4,649) | (4,882) |
| Accounts receivable | - | (66,405) | (3,320) | (124,237) | (9,698) | (10,183) | (10,692) | (11,227) | (11,788) | (12,378) | (12,996) |
| Accounts payable | - | 754,684 | 37,734 | 1,393,347 | 109,288 | 114,753 | 120,490 | 126,515 | 132,841 | 139,483 | 146,457 |
| Tax Payable | - | - | - | 507,259 | 25,593 | 26,459 | 32,861 | 15,401 | 25,398 | 13,365 | 11,997 |
| Building rent prepayments | - | - | - | - | - | - | - | - | - | - | - |
| Prepaid Payments | - | - | - | - | - | - | - | - | - | - | - |
| <i>Cash provided by operations</i> | - | 755,204 | 121,690 | 4,025,587 | 2,519,576 | 2,631,077 | 2,719,422 | 2,768,854 | 2,831,459 | 2,878,718 | 2,931,460 |
| Financing activities | | | | | | | | | | | |
| Long term debt principal repayment | - | (215,781) | (248,006) | (285,044) | (327,612) | (376,539) | - | - | - | - | - |
| Addition to long term debt | 1,452,981 | - | - | - | - | - | - | - | - | - | - |
| Owner's investment | 1,452,981 | - | - | - | - | - | - | - | - | - | - |
| <i>Cash provided by/ (used for) financing activities</i> | 2,905,963 | (215,781) | (248,006) | (285,044) | (327,612) | (376,539) | - | - | - | - | - |
| Investing activities | | | | | | | | | | | |
| Capital expenditure | (2,811,985) | - | (2,272,685) | - | - | - | - | - | - | - | - |
| <i>Cash (used for)/ provided by investing activities</i> | (2,811,985) | - | (2,272,685) | - | - | - | - | - | - | - | - |
| Net Cash | 93,978 | 539,423 | (2,399,000) | 3,740,544 | 2,191,964 | 2,254,538 | 2,719,422 | 2,768,854 | 2,831,459 | 2,878,718 | 2,931,460 |
| Cash balance brought forward | - | 93,978 | 633,401 | (1,765,599) | 1,974,944 | 4,166,908 | 6,421,446 | 9,140,868 | 11,909,722 | 14,741,181 | 17,619,899 |
| Cash carried forward | 93,978 | 633,401 | (1,765,599) | 1,974,944 | 4,166,908 | 6,421,446 | 9,140,868 | 11,909,722 | 14,741,181 | 17,619,899 | 20,551,359 |

20 ASSUMPTIONS:

20.1 Revenue Generation

| | |
|-------------------------------|-----|
| Sales price per 750 ml bottle | 40 |
| Sales price per 250 ml bottle | 20 |
| Product Mix | |
| 750 ml bottle | 80% |
| 250 ml bottle | 20% |
| Sales Price growth rate | 5% |

20.2 Operating Assumptions

| | |
|---|-------|
| Working Months in a year | 12 |
| Days Operational in a year | 360 |
| Days operational in a month | 30 |
| Shifts Operational | 1 |
| Hours per shift | 8 |
| Land Available (Acre) | 1 |
| Plants Available per Acre | 5,000 |
| Flowers per plant per year | 420 |
| Average weight per plant (Grams) | 2 |
| Initial year Capacity utilization (Land) | 100% |
| Cash in hand (days) | 30 |
| Finished Goods Inventory (days) | 10 |
| A/C Receivable | 10 |
| A/C Payable | 10 |

20.3 Expense Assumptions

| | |
|---|--------|
| Electricity Growth rate | 5% |
| Electricity Expense per month | 1,000 |
| Salaries Growth rate | 10% |
| Repair and Maintenance (as percentage of machinery) | 1% |
| waste | 1% |
| (DAP) Di Ammonium Phosphate (First year only) | 1,000 |
| (NPK) Nitrogen Phosphors Potassium per year | 21,600 |
| Debt tenure (Years) | 5 |

| | |
|--|--------|
| Depreciation on machinery (Straight Line method) | 10% |
| Depreciation on F&F, Office Equipment | 10% |
| Depreciation on Vehicles | 20% |
| Telephone and Telex (per month) | 1,000 |
| Administrative Expense growth rate | 10% |
| Printing and Stationery (per month) | 2,000 |
| Legal & professional charges (annual) | 50,000 |
| Entertainment (per month) | 1,000 |
| Traveling & conveyance (per month) | 15,000 |
| Others (annual) | 10,000 |
| Tax rate | 20% |
| Amortization of pre-operating expenses | 5 |

20.4 Raw Material Costs

Raw material is the largest component of cost of sales. Cost per item is shown below.

| | Rs./Kg |
|------------------------------------|--------|
| Centifolia Cuttings | 7 |
| Water Irrigation per Acer per Year | 85 |
| Manpower / Labor (total) | 58 |
| Energy cost (Gas) | 4 |
| Printing cost 750 ml bottles | 0.40 |
| Printing cost 250 ml bottles | 0.20 |
| Pet bottle 750 ml | 6 |
| Pet bottle 250 ml | 5 |
| Total cost 750 ml bottles | 14 |
| Total cost 250 ml bottles | 8 |