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SWANUBHAV GREEN
BIOTECHNOLOGIES PVT. LTD.

CULTIVATION, PROCESSING
AND TRADING OF **ESSENTIAL OILS**
LIKE GERANIUM ESSENTIAL OIL,
SHATAVARI PLANT,
LEMON GRASS, CINTRONELLA OIL
AND ENCALYPTNS

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Essential Oils have added a lot of value to the growth of flavor and fragrance industry as well as agriculture. The economy of the country being agriculture based, its farmers were engaged in traditional agriculture growing mostly food crops, which has caused them low returns. Imperative need has, therefore, been felt of growing essential oil bearing crops for a long time past, under diversified farming programme which have proved to be cash crops offering much better returns to the farmers. In our country, some 1300 species are known to contain Aromas, but only about 50 of these plants and oils derived from them are in consistent demand in trade & industry. The process of globalization of Fragrance and Flavor industry, which started about a decade before, is now growing rapidly. Essential oils are the backbone of the Fragrance and Flavor industry all over the world.

Industry sources suggests that Essential oils of Basil, Citronella, Lemongrass, various varieties of mints, Palmarosa, Sandalwood, Geranium, Lavender, Patchouli are finding increasing use infragrances and flavors formulations for use in variety of industrial & consumer applications. Besides, flavor & fragrance applications, essential oils are now finding in roads in 'Aromatherapy'. Beside this, essential oils will gain added importance due to environmental safety and regulatory provisions applicable to petroleum based aroma chemicals causing pollution.

Thus, the principal sector using essential oils are:

PERSONAL CARE PRODUCTS:

- Cosmetics & Toiletries (eg. Skincare, hair care products)
- Perfumery (Eau De Toilette, Eau de Cologne, etc)

HOUSEHOLD PRODUCTS:

- Cleaning Preparations for hospitals & schools.
- Room fresheners

FOOD & BEVERAGES

- As a flavor ingredient, natural essential oils are preferred over synthetic substitute on account of stringent laws governing the food preparations.
- Soft drinks (citrus oils & vanilla based formulations)

HEALTH CARE PRODUCTS

- Traditional medicines
- Alternative medicines (Aromatherapy)

Since the beginning of recorded history, humans have attempted to mask or enhance their own odor by using perfume, which emulates nature's pleasant smells. Many natural and man-made materials have been used to make perfume to apply to the skin and clothing, to put in cleaners and cosmetics, or to scent the air. Because of differences in body chemistry, temperature, and body odors, no perfume will smell exactly the same on any two people.

Perfume comes from the Latin "per" meaning "through" and "fumum," or "smoke." Many ancient perfumes were made by extracting natural oils from plants through pressing and steaming. The oil was then burned to scent the air. Today, most perfume is used to scent bar soaps. Some products are even perfumed with industrial odorants to mask unpleasant smells or to appear "unscented."

While fragrant liquids used for the body are often considered perfume, true perfumes are defined as extracts or essences and contain a percentage of oil distilled in alcohol. Water is also used. The United States is the world's largest perfume market with annual sales totalling several billions of dollars.

The scented oil obtained from natural sources is called Essential oil. An essential oil maybe defined as a volatile perfumery material derived from a single source of vegetable or animal origin, which has been separated from that source by a physical process.

We must appreciate efforts and enterprise selection by Silveroak Farms, in bringing out “Set up a processing plant and trading arm”, which is one of the well profitable ventures within Industry.

The bankable project report consists of various chapters as, project objective which drive client to establish this industry, promoter’s profile details, background of cultivation, processing of essential oils, its industry, geographical advantage for promoter to establish the unit, facility management, forward and backward linkage about proposed manufacturing unit, strength and strategies of promoter behind project, economics of the project with various financial ratio analysis, architectural and engineer supported layouts, all the details are mentioned.

Swanubhav Green Biotechnologies Pvt Ltd is Private Limited company in the State of Maharashtra, at S no. 13/1, 13/5, A Wing, FL 09, Ganesh Heights, Dapodi Pune 411012.

Proposes to set up a plant for extracting the essential oils from various natural sources which are 1) Geranium 2) Shatavari Plant3) Lemon Grass 4) Citronella 5) Khas 6) Rosha 7) Patcholi.

MISSION

The "Swanubhav Green Biotechnologies Pvt Ltd" shared vision is a reflection of the aspirations of key stakeholders: farmers, manufacturers, consumers and the government. The company has a vision for achieving high economic growth, minimizing risks, enhancing farmer miller relationships, meeting rowing domestic demand and contributing to the nation's needs. The shared vision provides the direction for the future roadmap.

1) To create a centre of excellence in agriculture
2) To be a well known for rural leadership
3) Pride and prosperity through self reliance
4) Access better marketing opportunities

Essential Oil Cultivation and Processing Plant

through adoption of appropriate technology, utilization of resources, quality production and suitable market strategy.

Some important objectives behind setup of the unit are;
• Manufacture, Process, Mix, Produce, Export, sell, buy trade and deal in

1) Geranium Oil 2) Shatavari Medicinal roots 3) Lemon Grass Oil 4) Citronella Oil 5) Khas Oil 6) Rosha Oil 7) Patcholi Oil.

• Employment generation in Rural Area.
• Rural Leadership and development.
• Agriculture services

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OPPORTUNITY OF ESSENTIAL OIL CULTIVATION, PROCESSING AND MARKETING IN INDIA AND WORLD

Essential Oil Market is expected to reach $11.188 million by 2022, with a CAGR of 8.7% from 2016 to 2022. Essential oils, also known as volatile oils/aetherolea/ethereal oils, are derived from leaves, stems, flowers, bark, roots, or other parts of a plant. Essential oil is obtained from various herbs and plants, such as Geranium, Lemongrass, Khas, Patcholi, Shatavari plants root, orange, eucalyptus, corn mint, peppermint, citronella, lime clover leaf, and spearmint, using distillation methods such as steam and water distillation. An essential oil contains volatile aroma compounds and real essence of the plant from which it is derived. Essential oils are primarily used in cosmetics & toiletries, food items and beverages.

The major factor boosting the market growth is the increasing consumer preference for natural and organic products be it cosmetics, food or similar other product categories. This in turn, has led the manufacturers operating in such industries to develop products that contain natural additives.

Thus, the growing usage of essential oils among the aforementioned industries, coupled with factors which include increasing disposable income and improved standards of living in emerging economies, supplement the market growth. The factors restricting the market growth are high price of essential oils, availability of synthetic substitutes, and limited availability of raw materials. Government support and favorable regulations are likely to offer lucrative opportunities for market growth.

INTERNATIONAL TRADE OPPORTUNITY

Asia Pacific is expected to be the fastest growing regional market which accounted for 10.2% of the total volume share in 2015. The region is expected to reach 10.7% of the overall market share by 2024 owing to rapid industrialization, growing consumer disposable income, and increasing interest and awareness regarding essential oils and natural products are expected to foster regional development.

Increasing production of essential oils along with growing demand from various crucial user industries are probable to increase the demand for different types of essential oil products across the globe. Innovative extraction techniques along with technological advancement in the production process are likely to surge the preference for products.

North America accounted for approximately 40.8% of the market in 2015 by volume. The U.S. is the primary exporter & importer of essential oils. It chiefly exports to United Kingdom, Germany, Japan and Canada. However, the U.S. imports most of its requirements from France and India. It is also the principal importer of citronella oil along with other European countries such as Netherlands Germany, France & United Kingdom.

The region is expected to witness a high growth owing to increasing medical applications with growing consumer interest and awareness regarding health benefits associated with essential oils and natural ingredients. High geriatric population coupled with rising prevalence of diseases and epidemics has fostered regional development across the medical and pharmaceutical sectors.

Increasing demand for natural ingredients in cosmetics and beauty products is also likely to boost demand in the U.S. personal care products sector.

It is essential to cover all time in demand oils, so that market can be captured at earliest and keep it for long time. M/S Swanubhav Green Biotechnologies Pvt Ltd has following product portfolio.

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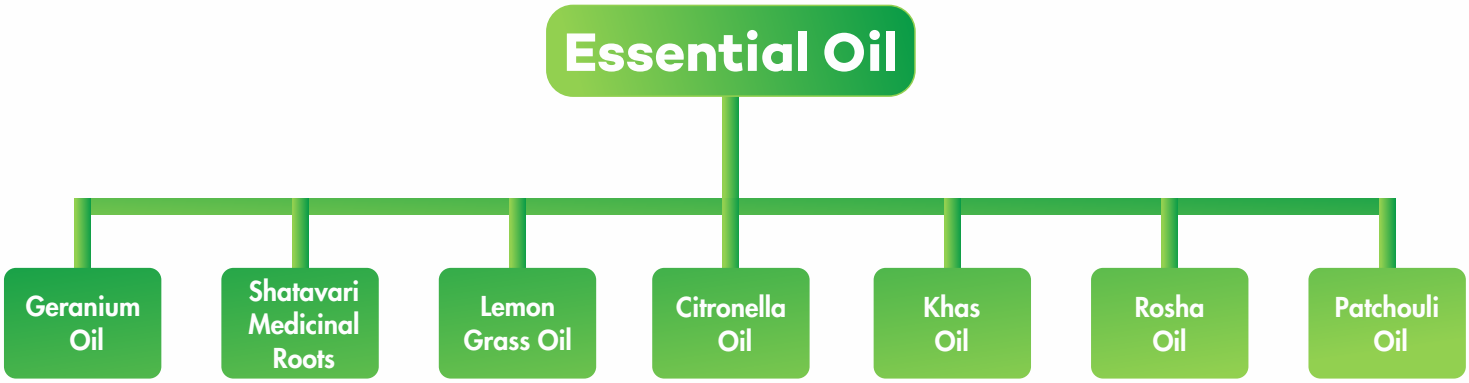


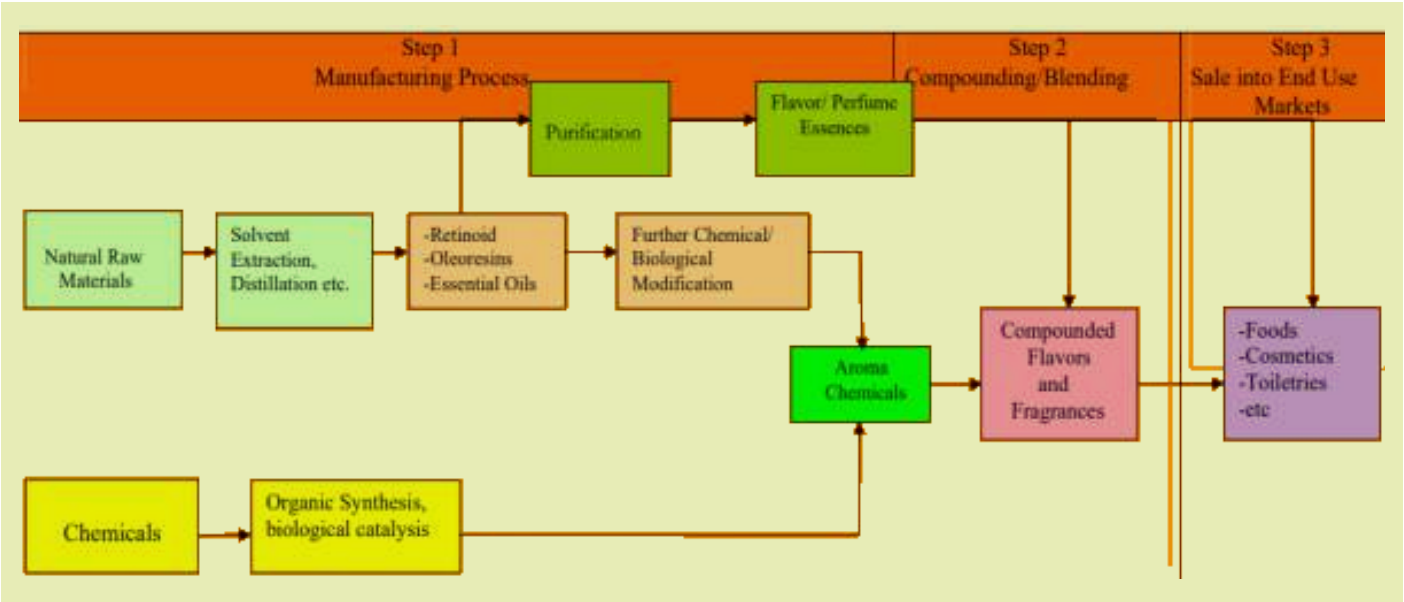
LEMON GRASS OIL

CITRONELLA OIL

KHAS OIL

PATCHOULI OIL

GERANIUM OIL



GERANIUM OIL

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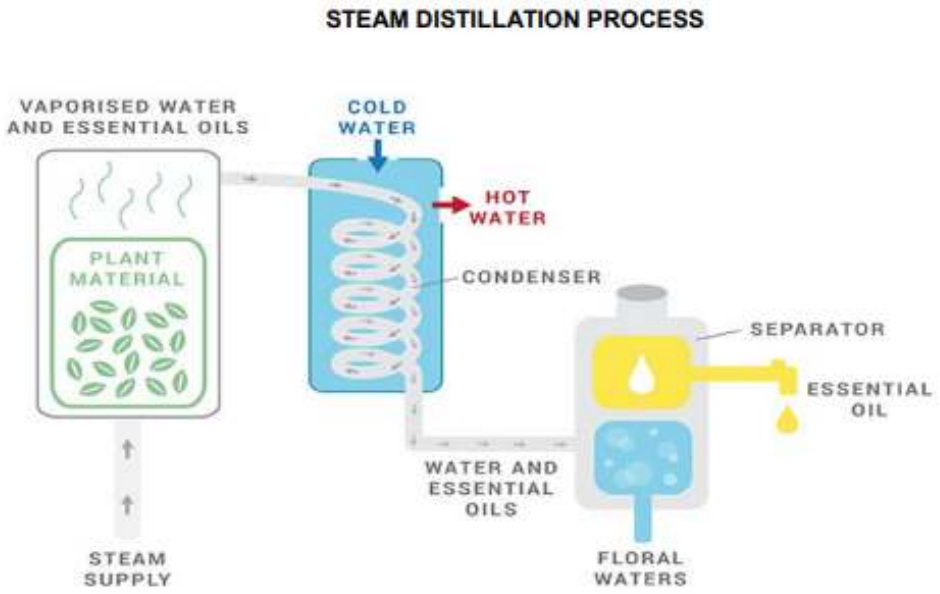
Geranium Essential Oil.

STEAM DISTILLATION

Steam Distillation is the most popular method used to extract and isolate essential oils from plants for use in natural products. This happens when the steam vaporizes the plant material's volatile compounds, which eventually go through a condensation and collection process.

STEAM DISTILLATION PROCESS

1. A large container called a Still, which is usually made of stainless steel, containing the plant material has steam added to it.
2. Through an inlet, steam is injected through the plant material containing the desired oils, releasing the plant's aromatic molecules and turning them into vapor.
3. The vaporized plant compounds travel to the condensation flask or the Condenser. Here, two separate pipes make it possible for hot water to exit and for cold water to enter theCondenser. This makes the vapor cool back into liquid form.
4. The aromatic liquid by-product drops from the Condenser and collects inside a receptacle underneath it, which is called a Separator. Because water and oil do not mix, the essential oil floats on top of the water. From here, it is siphoned off. (Some essential oils are heavier than water, such as clove essential oil, so they are found at the bottom of the Separator.)



SOLVENT EXTRACTION

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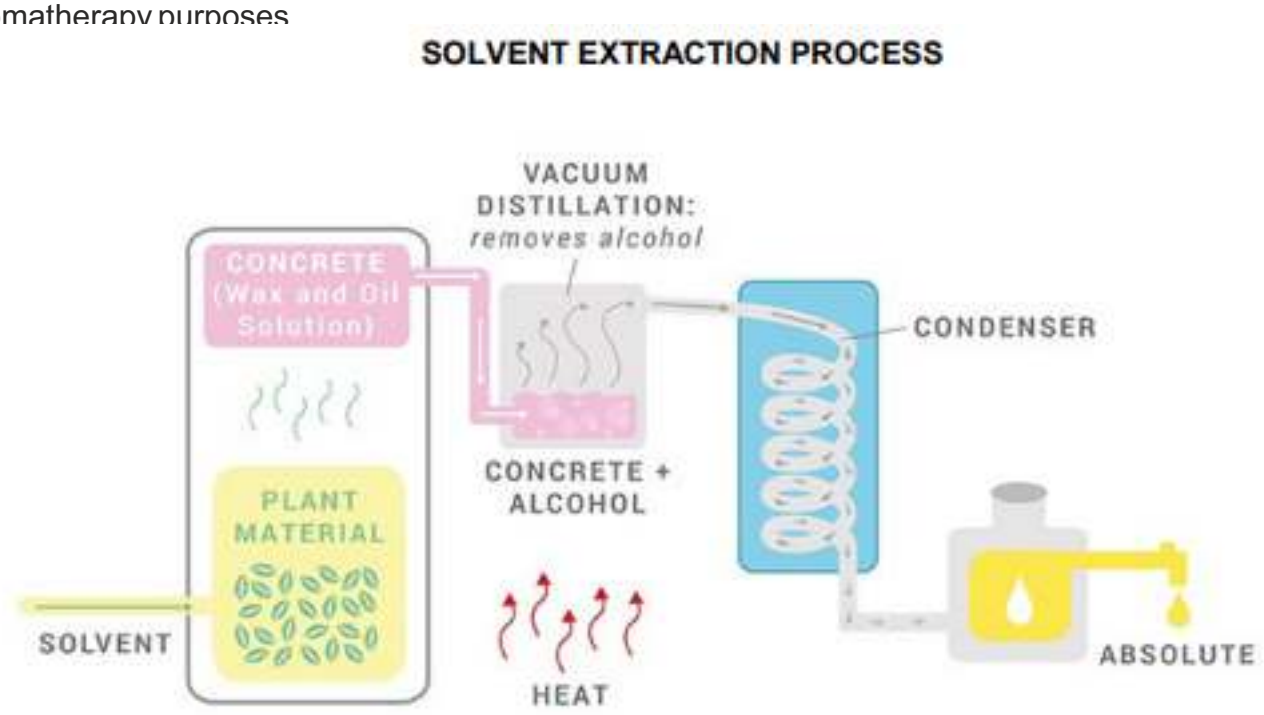
This method employs food grade solvents like hexane and ethanol to isolate essential oils from plant material. It is best suited for plant materials that yield low amounts of essential oil, that are largely resinous, or that are delicate aromatics unable to withstand the pressure and distress of steam distillation. This method also produces a finer fragrance than any type of distillation method.
Through this process, the non-volatile plant material such as waxes and pigments, are also extracted and sometimes removed through other processes.
Once the plant material has been treated with the solvent, it produces a waxy aromatic compound called a "concrete." When this concrete substance is mixed with alcohol, the oil particles are released.
13 DPR on Cultivation, Processing and Trading of Essential oils The aforementioned chemicals used in the process then remain in the oil and the oil is used in perfumes by the perfume industry or for aromatherapy purposes



Solvent Extraction encompasses the following methods: Hypercritical CO2 (Carbon Dioxide), Maceration, Enfleurage.

Co2 EXTRACTION

Essential oils derived from the supercritical CO2 extraction of herbs are similar to the oils produced through distillation in that they can be used in aromatherapy and natural perfumery.

Oils derived from steam distillation vary in their qualities depending on the temperatures, pressures, and length of time applied for the process. The CO2 extraction process might thus produce higher quality oils that have not been altered by the application of high heat, unlike the steam distillation process. In CO2 extraction, none of the constituents of the oil are damaged by heat.

Thus, the difference between traditional distillation and supercritical extraction is that instead of heated water or steam, CO2 is used as a solvent in the latter method. The supercritical extraction process operates at temperatures between 95 to 100 degrees F whereas steam distillation operates at temperatures between 140 to 212 degrees F.

In steam distillation, the molecular composition of both the plant matter and the essential oil are changed due to the temperature applied. On the other hand, a CO2 extract is closer in chemical composition to the original plant from which it is derived, as it contains a wider range of the plant's constituents.

For example, CO2 Extraction of German Chamomile flowers yields a green extract, because the absence of heat means it was not altered from its natural state or “denatured.” The resulting extract is thus more similar in composition to the original flower than the distilled essential oils is.

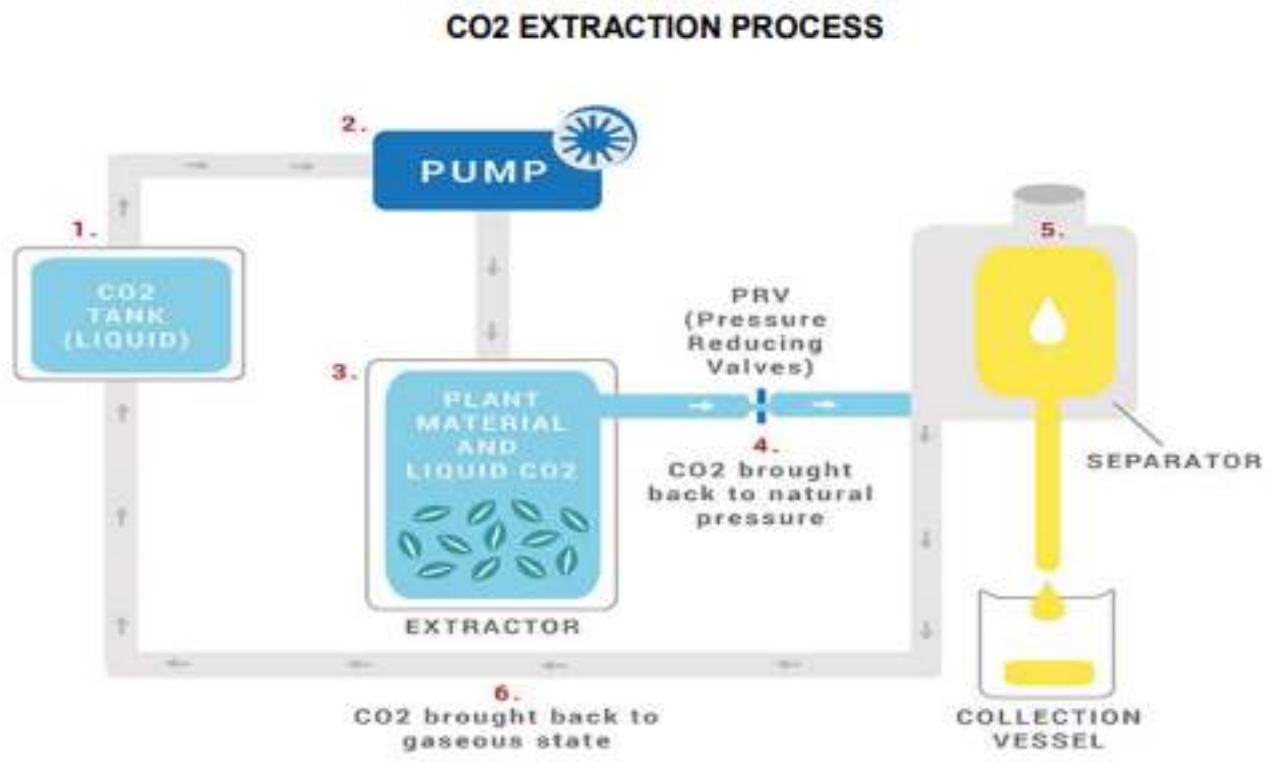
CO2 extracts are usually thicker than their essential oil counterparts and often give off more of the aroma of the natural herb, spice, or plant than a distilled essential oil. CO2 extracts have been said to contain more plant constituents than the amount extracted from the same plant using steam distillation.

THE CO2 EXTRACTION PROCESS

- Pressurized carbon dioxide becomes liquid while remaining in a gaseous state, which means it is now "supercritical." In this state, it is pumped into a chamber filled with plant matter.

- Because of the liquid properties of the gas, the CO2 functions as a solvent on the natural plant matter, pulling the oils and other substances such as pigment and resin from the plant matter. The essential oil content then dissolves into the liquid Co2.

- The CO2 is brought back to natural pressure and evaporates back into its gaseous state, while what is left is the resulting oil.



C02 is colorless, odorless, and can be easily and completely removed by releasing the pressure in the extraction chamber. It is what we exhale and is needed by plants in order for them to thrive, which illustrates its harmlessness when employed in the extraction process. This absence of potentially harmful solvents in C02 extraction means neither the human body nor the environment is polluted.

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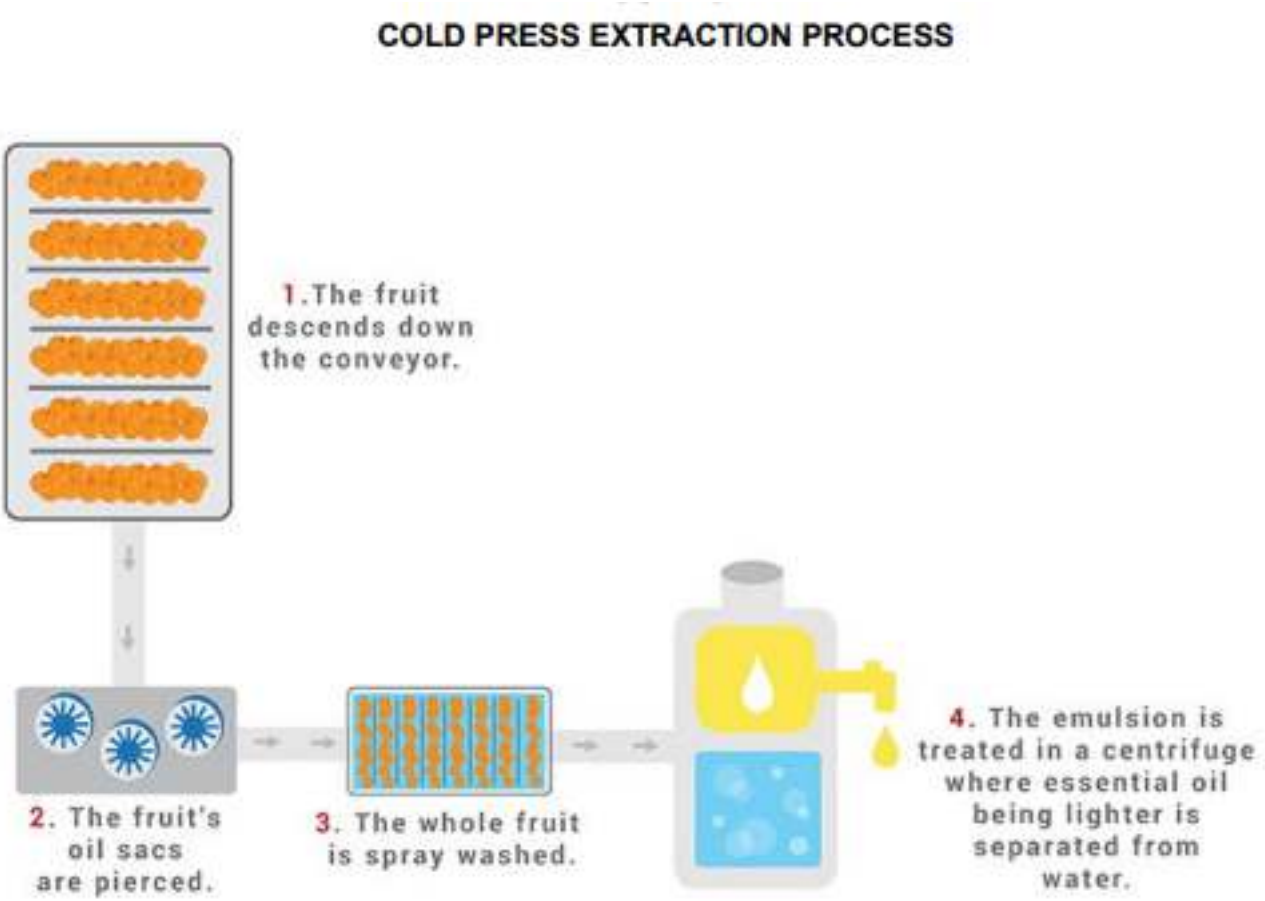
COLD PRESS EXTRACTION

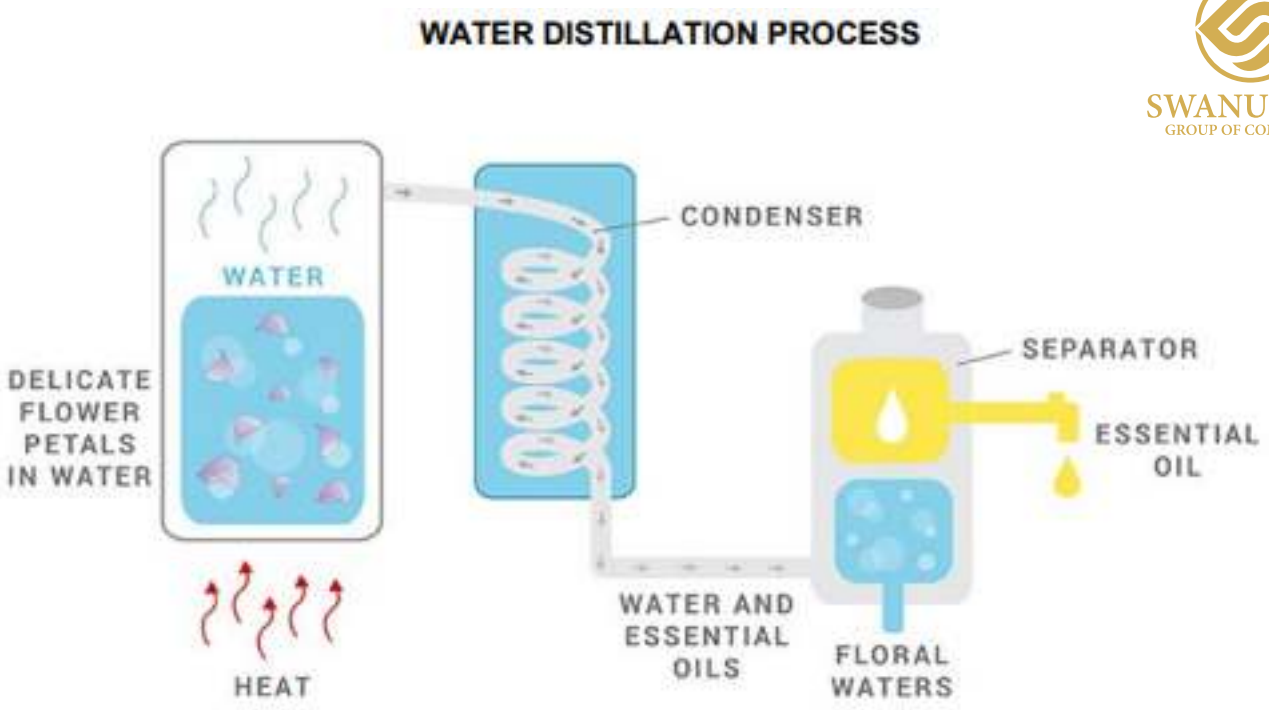
This method is also called Expression or Scarification and is used for citrus peels in particular.

- The whole fruit is placed in a device that mechanically pierces it to rupture the essential oil sacs, which are located on the underside of the rind. The essential oil and pigments run down into the device's collection area.
- The whole fruit is pressed to squeeze out the juice and the oil.
- The oil and juice that are produced still contain solids from the fruits, such as the peel, and must be centrifuged to filter the solids from the liquids.
- The oil separates from the juice layer and is siphoned off into another receptacle.Evaporation of juice to syrup taking cares to stop short saturation. For first step multiple evaporators are used. The vapors of first effect are used for healing the following effect juice heaters and vacuum pans. The system mostly used is countercurrent barometric condenser and MJ condensers.



WATER DISTILLATION

Delicate flowers such as roses and orange blossoms would clump together when introduced to steam in the distillation process, so the most effective method of extraction in this situation is to submerge fragile plant material in pure boiling water instead. The water protects the extracted oil from overheating. The condensed liquids cool down and separate from each other. The remaining water, 16 DPR on Cultivation, Processing and Trading of Essential oils which can sometimes be fragrant, is referred to by several names including hydrolate, hydrosol, herbal water, essential water, floral water, or herbal distillate. The juice received from mills is screened, weighed and heated up to 65 degree centigrade and sent to juice Reactor where some required Chemicals are added with proper dose reaction is made for 5 minutes. This reacted juice is again heated to 98 to 300 degree centigrade to make reaction optimum and send for clarification



PROMOTER'S FACILITY MANAGEMENT

Facility management is very important for the project which decides the success of any agribusiness and its feasibility. Certain criteria are there which plays very important role in the selection of site according to project basic requirements to run. While selecting location for the project following criteria we have taken in to consideration for Silveroak Farm. for Setup "Cultivation, Processing and Trading of Essential Oil Unit".

Available Facilities are;

- ✓ Land
- ✓ Geographical Location
- ✓ Water
- ✓ Electricity
- ✓ Labor
- ✓ Raw Material
- ✓ Transport

All above facilities are very important for successful running of the "Cultivation, Processing and Trading of Essential Oil Unit". All the facilities are properly available with Silveroak Farms. and because of the same the site selection is ideal for the project.

PROMOTER'S FACILITY MANAGEMENT

LAND

Total area with company is around 1000 acr. land. The main reason behind this business selection was, less area requirement, moderate labor and water requirement with high returns in the business.

Project land area is rectangular with proper approach to the land. Land is not in use for crop cultivation and can be used for project purpose. Land is attached with the main road. For furthermore details one can refer the annexure part of the project. Also, Gat map is attached for more information in the annexure part of the report.

WATER
Water facilities are available Silveroak Farms. for the project. As per project requirement the water availability with company is abundant, which can be easily fulfilled by available resource.

ELECTRICITY
Electricity is not at all a problem for the project in area. The company has sufficient power supply from MSEDCL.

LABOUR
As Processing of Essential oil is technical subject, here project need technical advisor who can take care of complete operations for the project. Project requires 5-10 labors for various activities. If extra labours are required then provision has been already done by promoter by intimating this to the local labors.

RAW MATERIAL
The promoter already have own cultivation on around more than 175 acres and he also have more than 1000 acres land for future cultivation and raw material requirement of project.

TRANSPORT
The regular transport facility is available. Promoter also have plan to arrange own transport vehicle for daily supply.

PROMOTER'S STRENGTH (FORWARD & BACKWARD LINKAGE)

The chapter explains strength & Management of Forward & Backward linkage for Cultivation, Processing and Trading of Essential Oil Unit for Swanubhav Green Biotechnologies Pvt Ltd Project feasibility is with Swanubhav Green Biotechnologies Pvt Ltd. as explained in above chapters, technically and physically.

Important Strength factors of promoter are explained as follows.

- ✓ Industry Background and Technical Knowhow
- ✓ Resources
- ✓ Organization Structure and
- ✓ Jaggery Buyers

9.1 INDUSTRY BACKGROUND

For setting of any agribusiness, it is very important that the promoter should have some practical experience and working field or at least in to agriculture field to get acquainted with the farm operations and work accordingly. Jaggery industry is purely expecting the results from the farmers and promoters and it is possible only when person or organization should have that background at least for the entire industry in general.

Silveroak Farms officials have agriculture and farming background since their ancestors. Also they come from business disciplines, Which ensure that there is an expertise for overall management of the project. They also involved in agriculture activities, and they are in trading of essential oil from last 30 years.

RESOURCES

Here location or site selection plays very important role in business to make venture successful and have long journey. As explained in above chapters all the resources required for the project are adequately available with promoter.

Land available for project has proper dimensions and Well connected to road. Migration of lots of labors to metros for employment is another issue in front of food processing industry today. Promoter have already provision for labors from locality.

It is said that, logistics is main strength of any agribusiness behind perishable nature of the products. Since the project is situated near pune. and they are going to supply Essential oil in to domestic as well as export market. Logistics facilities are easily available for project. Along with water and labor availability, company has electric connections reached allover to their farms for pumps and machinery workings.

However, Land, Labor, Water, Electricity, and sugarcane as raw material all the basic requirements are available for the project and well explained in the Chapter No.11. Kindly refer the same for more details

ORGANIZATION STRUCTURE

Swanubhav Green Biotechnologies Pvt Ltd is promoted by Shri Anilkumar Eknathrao Bhonsale is the Proprietor of firm.
The organization structure of Swanubhav Green Biotechnologies Pvt Ltd is as per following.

A) Promoter Background & Experience

Mr. Ravindra Dattatray Zagade
He is born in farmers family. He has innate interest in Agriculture sector.

He have great experience of trading and processing of essential oil. With the help of that experience they are going to setup new unit. Under that unit they are going to do cultivation, Processing and trading of essential oil. They have very good experience of market.

ESSENTIAL OIL BUYERS

The project capacity is for 1) Geranium – 1800 tonnes, 2) Shatavari Plant – 840 3) Lemon grass – 400 tonnes 4) Citronella – 400 tonnes 5) Khas – 150 tonnes 6) Rosha – 400 tonnes 7) Patchouli – 400 tonnes, which is easily getting sold to customers of domestic as well as local market. Indian market of essential oil is going to increase day by day. The market part is already in secure for promoter.

PROJECT MARKETING PLAN

MARKETING PLAN

Swanubhav Green Biotechnologies Pvt Ltd is going to apply for their product sale in the market; here main important strategy for marketing is adopted by client is 4 P's of Marketing Mix. The 4 Ps are a set of recognized marketing tactics, which we use in any combination to satisfy customers in your target market. The 4 Ps is controllable, but subject to your internal and external marketing environments. Combining these different marketing tactics to meet customers' needs and wants is known as using a 'tactical marketing mix'. Here we are using same strategies for satisfying our customers and increasing customer base for Essential oil manufacturing business.

Product
The product selected is Essential Oil. The quality of product is different for each segment. The selection of the product is done based on requirement of the product in the market and not fulfilling demand in the market.People are getting more aware about their health so demand is increasing in the market.

Price:
The pricing strategies for the product will be different according to the region and type of customer.
For Essential oil wholesaler, Retailer, Exporter are main target for pricing according to market price.

Promotion
In marketing, promotion refers to any type of marketing communication used to inform or persuade target audiences of the relative merits of a product. The aim of promotion is to increase awareness, create interest, generate sales or create brand loyalty. It is one of the basic elements of the market mix, which includes the four P's: price, product, promotion, and place.

Place
The essential oil is increasing day by day in India. The Essential oil is traded through open market. Following is the major markets of Jaggery trading in india.

Muzzafarnagar, Mumbai, Delhi, Bhatinda, Ludhiana, Meerut, Kolkata, Hapur, Gwaliar, Hyderabad, Chennai

ECONOMICS OF THE PROJECT (FINANCIAL RATIO ANALYSIS)

The chapter explains detailed information regarding economics of the project i.e. financial ratio analysis for proposed unit. All numbers have been presented in ANNEXURE I.

The detailed ratio analysis shows the financial status and viability for the proposed project for promoter. Estimated project cost explains the actual fixed cost and working capital requirement of the proposal. Further it explains the financial institution and promoter's contribution towards project establishment. All the ratio has been calculated here which are important for financial institution and Government subsidy agencies.

OTHER

- ➢ Company Incorporation Certificate
- ➢ SSI Certificate
- ➢ Architectural Plant Layout
- ➢ Promoter Certificates
- ➢ Land Documents
- ➢ Buyer Letter of Intent (LOI)

ACRONYMS / ABBREVIATIONS

Acronyms / Abbreviations	Full form / Explanation
DPR	Detail Project Report
NOC	No Objection Certificate
LOI	Letter of Intent
EPC	Estimated Project Cost
DSCR	Debt Service Coverage Ratio

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SWANUBHAV GREEN BIOTECHNOLOGIES PVT. LTD.

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THANK YOU !