

A review article: economically important plants of essential oil yielding plants

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Abstract

The importance of plants are discussed with reference to their value as a source of sustenance: food, sugars, starches, spices and condiments, beverages, fumitories, masticatories and narcotics, medicines, essential oils, fatty oils and vegetable fats, waxes, soap substitutes, vegetable ivory, fodder, fuel, bioenergy or biofuel, fertilizers, fiber, pulp and paper, tannins, dyes, rubber and other latex products, gums, resins and cork. Essential oils are a class of vegetable oils which have complex mixtures of organic substances. They are terpene derivatives, phenyl propanoids, hydrocarbons and straight chain compounds. Essential oils are by products of plant metabolism rather than reserve food.

Keywords: Propanoids, narcotics, soap substitutes, resin

Introduction

Essential oils may occur throughout the plant or restricted to specific organs. They occur as droplets in cells lining the glandular hairs or in secretory cavities which permeate the tissue or between the cell wall and cuticle of epidermal hairs, where slight break permits volatilization results in fragrance. The amount of oil varies from as 1-2 percent. The chemical composition and quality of an essential oil depends upon the varietal form, prevailing climatic condition, time of harvesting and extraction procedure. There are methods of extracting essential oils from plants i.e distillation, maceration, solvent extraction, mechanical expression, adsorption. Essential oil have many application and are used in manufacture of perfumes, creams, lotions, soaps, detergents, incense, shampoos, bath oils, talcum, toiletries. Essential oil in plants act as attractants for certain pollinating insects, feeding animals. They provide a defense mechanism against plant parasite, hostile insects, attack of microbes.

Citronella grass Family: Poaceae



1. The plant is a robust, stoloniferous, tufted perennial grass, about 1m tall with thin leaves (about 1m in length) having white midrib and scabrous margin. The inflorescence is a large compound panicle. Two distinct cultivars of this species are recognized, both known to

- yield more oil of high quality than wild counterparts
2. *C.nardus* which is grown in Guatemala, Taiwan, China, Java and to lesser extent in Brazil, India, Indonesia, Sri Lanka, East Africa, West Indies. It yields twice as much essential oil as the Ceylon type and contains more of citronellal, geraniol, small proportion of geranyl acetate and citronellyl acetate.
 3. Oil is used for perfumery and also raw material for the isolation of citronellal and geraniol, both used as source material in the synthesis of large number of fragrance compounds including menthol. Oil is obtained through steam distillation of fresh and partially dried leaves and stems.

Lavender, Family: Lamiaceae

1. It is a small aromatic perennial shrub with opposite, very narrow, entire, lanceolate, 2-5 long leaves. The inflorescence is a terminal spike bearing small, bilabiate, fragrant, bluish mauve flowers. The leaves and flowers are covered with shinning oil glands. It is propagated by slips taken from older but planted out in rather poor sandy calcareous but well drained soils in the full sun. The first harvest is gathered three years after planting and the plants remain productive for three to four years.
2. Oil is extracted by steam distillation, by using solvents. It is pale yellow, liquid with refreshing odour and has been most popular scents. Its main constituents are linalool, linalyl acetate and ethylpentyl acetate.
3. The oil is employed for making high class perfumes, while inferior oil is used as soaps, manufacture of varnishes. Because of its disinfectant and insect repelling qualities, it is used as protection against moths and insects damaging linen. Most valuable oil is extracted by steam distillation and by using solvents. It is pale yellow, amber tinged liquid with refreshing odour and is among most popular scents

**Geranium*****Pelargonium graveolens*, Geranium Family: Geraniaceae**

1. Pelargonium is a large genus of ornamental plants called geraniums. They are indigenous to dry rocks slopes of south Africa, but few are found on mediterranean and in Australia
2. It is highly branched aromatic perennial shrub upto 1m tall which become woody at base. The leaves are hairy, opposite, long petioled and deeply palmately lobed with toothed margin
3. Flowers are small, numerous pink, scentless are produced in small axillary umbels. Propagation is done with cuttings which are rooted in nursery beds and later planted out in the fields. This shrub prefer sheltered warm, dry climate, rich permeable soil with huge humus and sufficient time.
4. Leaves are distilled white, solvent extraction is too carried out in Morocco. The oil is colourless to yellowish green liquid with rose like odour.
5. Geranium oil with delicate odour is used in perfume and soap industry as an extender for expensive perfume. The oil with pronounced odour is employed for isolation of citranellol which is used for scenting soaps and powders
6. Fresh leaves are used to flavor sweet cakes, gelatins, puddings. Geraniums are attractive house plants.

Natural camphor***Cinnamomum camphora* (L.), Family: Lauraceae**

1. The tree is about 12 m tall bears dark green, leathery, camphor scented, alternate, ovate, leaves with smooth, shining upper surface
2. The yellow flowers are produced in axillary panicles

appearing in summer and later into red fruit

3. The trees are propagated from seeds in nurseries and later transplanted to fields
4. It comes up well on fertile, well drained sandy loams
5. Camphor oil is obtained from distillation of wood and leaves are large evergreen tree indigenous to Taiwan, Japan, Southern china
6. Natural camphor is a white crystalline compound with characteristic odour and pungent taste
7. Both camphor and oil is used in cold remedies, perfumery and insecticides. About 70 percent of camphor was used for manufacture of celluloid used in cinema industry
8. It is used medicinally and as component of incense. Oil is employed as counter irritant, expectorant, analgesic

Eucalyptus globules*, Blue gum,*Family: Myrtaceae:**

1. Eucalyptus is large genus comprising more than 500 species is native of Australian mainland, Tasmania and Papua New guinea
2. *E. globules* is large tree with height of 300 ft or more with straight clean bole when cultivated under
3. Essential oil is colourless liquid with aromatic odour. It is used in perfumery oil, medicinal oil, industrial oil
4. Essential oil intended for medicinal use contain 70 to 85 % cineol or eucalyptol
5. It constitute a major hardwood timber and employed for pulpwood, firewood, windbreak and erosion control
6. Its essential oil is used as an antiseptic, deodorant, expectorant in mosquito and vermin repellent preparation as well as ingredient in aerosol
7. The vapours are inhaled to relieve cough in chronic bronchitis and asthma
8. Oil is used in refinement of mineral oil by floatation and manufacture of thymol and menthol

Sandalwood**Family: Santalaceae**

1. It is small to medium sized, evergreen, semiparasitic tree bearing slender and drooping branches with thin ovate leaves

2. The flowers are small, bisexual unscented , marooncoloured borne in axillary paniculate cymes
3. The fruits are purple black with sweet pulp , relished by birds and help in seed dispersal
4. Tree starts flowering at an early age beginning from February and till april. The tree is a prolific seed bearer
5. The tree thrives best in region with cool climate, moderate rainfall over well drained loamy soil, ample sunshine, long periods of dry weather
6. The growth is slow so that it may take more than 30 years to develop 8 cm central core of oil rich heartwood.
7. Heartwood is scented. The essential oil is deposited in elements of heartwood and not secreted by any cell.

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Conclusions

Some of the commercially used products contain essential oil which are extarcted from plants through various extraction methods through various parts of plant. Almost every part of plant either root, stem, leaf, bark, flower, fruits, seed contain oils which are secondary metabolite products and can be used for industrial purposes.

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