



**Biotica
Research
Today**

**Vol 2:9 938
2020 940**

Essential Oils in India - History and Future Prospects

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 Open Access

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 **Keywords**

Aroma, Essential oil, Future Prospects, History

Article History

Received in 16th September 2020

Received in revised form 20th September 2020

Accepted in final form 21st September 2020

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How to cite this article?

Pujari *et al.*, 2020. Essential Oils in India - History and Future Prospects. *Biotica Research Today* 2(9): 938-940.

Abstract

Essential oils are aromatic essences extracted from natural plant sources and synthesized artificially also they can be used in perfumery, pharmaceutical, paint industries, food applications, sanitary and cosmetic products. India is known to have a good old history in the usage of these essential oils. Essential oils do have a significant role in the day to day life as such they are needed from cradle to the grave in all the social functions.

Introduction

These are the chemical compounds of odoriferous nature which are highly volatile insoluble in water but soluble in organic solvents and are obtained from plant tissues by different distillation methods (Naeem *et al.*, 2018). The consumers are showing increasing preference for natural material over the synthetic. During the last few years with the spurt in the production of essential oils it is emerging as a potential agro based industry in India. At present in India about 30% of the fine chemical used annually in perfumes and flavors come from essential oils.

History of Essential Oils in India

India came to be known as a source of fine perfumes by centers like Kanauj, Jaunpur, Ghazipur and Lucknow which has acquired high reputations in this respect. Even in Vedas, which are some 3000 years old, cosmetics and perfumes, used chiefly in religious ceremonies, are referred to knowledgeably and in detail. Among the materials mentioned in such writings, from the earliest record times down to the period in which Kalidasa lived (470 AD), are the flowers of henna, jasmine, champak, lotus, mango, hycianth, rose, lily, sandal wood and vetiver roots (Rao and Bhattacharya, 1992).

Commenting upon the difficulty of obtaining reliable recipes for the ancient Hindu writings, Cola nevertheless asserts that the following are authentic and were highly successful in the Mogul epoch. The first was called as Abir and consisted of sandalwood, vetiver root, patchouli leaves and camphor. Traditional Indian medicine called "Ayur Veda" has a 3000-year history of incorporating essential oils into their healing treatments.

Vedic literature lists over 700 substances including cinnamon, ginger and sandal wood as effective for healing. During the outbreak of the Bubonic Plague, Ayur Veda was used successfully in replacing ineffective antibiotics. The purpose of aromatic plants and oils were not only for medicinal purposes, but were believed to be a Godly part of nature and played an integral role to the spiritual and philosophical outlook in Ayurvedic medicine.

As far back as 3000 B.C., the Egyptians used aromatic plants

for medicinal and cosmetic purposes. Hippocrates, venerated today as the father of medicine, cites a number of medicinal & medicinal plants in his writings. In the 10th century, Arabic physician Avicenna left us valuable written documents describing 800 plants and their effects on the human body. He is also credited with the development of the distillation process for essential oils.

Today it seems more probable that he did not discover the process of distillation, but rather perfected it, for archaeologists have found primitive distillation equipment that dates from before his lifetime. In the 12th century, the "Fragrances of Arabia" - in other words, essential oils - became famous in Europe.

In the 16th century, there were comprehensive plant catalogs and anyone who could read had access to recipes for oils, perfumed waters and other methods of treating ailments. In the 17th century, Nicholas Culpeper wrote passionate tirades against doctors who prescribed poisonous substances such as mercury; today's concern about the side effects of dangerous (allopathic) pharmaceuticals is, therefore, nothing new.

The major witch burnings coincide with the emergence of chemical-therapy and were urged on as a consequence of establishment physicians' desire to suppress the knowledge of the "wise women", as well as by the church's desire to eradicate the heretics. In the 18th and 19th centuries, chemists researched the active components of medicinal plants and identified many substances (e.g. caffeine, quinine, morphine, and atropine).

Though these do, indeed, play an important role, the search for isolated substances actually led away from the natural use of the whole plant. Essential oils continued to be used on the side, many remaining in the official pharmaceutical manuals until well into the 20th century, while a small number of them, such as lavender, peppermint and myrrh, are still used pharmaceutically today.

More and more, however, they were replaced by synthetically produced medications, the majority of which were actually byproducts of coal-tar refining. This development accelerated in the second half of the 20th century, with the catastrophic consequences we are now well aware of. In the Far East, especially in India and China, the use of plants for therapeutic purposes looks back on an unbroken, thousand-year-old tradition, in complete contrast to Europe, where we only now are beginning to rediscover this once almost lost knowledge.



Figure 1: Aromatic oils of different countries (Source: Google image)

Distillation of Essential Oils

Arabian chemist (and physician) Ibn Sina - also known as Avicenna, who lived 980 – 1037 AD, since he was the first one to perfect steam distillation – and his process was so good that it stayed unchanged for a couple of hundred years. The first real documented uses of essential oils for therapeutic reasons were found among the ancient artifacts of the Egyptians.

Future Prospects of Essential Oils in India

India is one of the few countries in the world having varied agro climatic zones suitable for the cultivation of most of essential oil bearing plants. Due to increased awareness of health hazards associated with synthetic chemicals coupled with the increase cost of petroleum products, the use of essential oils have been gradually increasing.

The total consumption of perfumery and flavorings material in India is about 56800 MT/annum valued at 155 billion US \$. Food, dental, Pharmaceutical flavors share is around 22000 MT and the rest represents perfumery. The estimated production of perfumery raw material is around 57252 million tones/ annum valued at Rs. 175 billion US \$.

A number of essential oils from palmarosa, citronella ginger grass, basil, mint, lemon grass, eucalyptus cedar wood, lavender oil, davana oil, celery seed oil, fennel and other oils have been widely used in a variety of products in India. Out of these the essential oils currently being produced in India are oil of citronella, lemon grass, basil, mint, sandal wood, palmarosa, eucalyptus, cedar wood, vetiver and geranium Rose oil, lavender, davana oil, oil of khus.

During last forty year the importance of developing essential oil bearing plants is being increasingly realized. With the introduction of Japanese mint and subsequent improvement there upon, India produces 5000 tonnes of menthol values Rs. 1000 crores and is one of the leading Mint produced in India. Presently the areas under mint cultivation are estimated to the around 40000 hectares mainly in U.P., Punjab, Haryana and to some extent in Bihar and M.P.

The export of essential oils during the year 2010-2011 ha been 170 US \$ as against to 150 US \$ during the year 2009-2010. An amount of Rs. 601 crores have been saved foreign exchange annually by means of production of certain oils of mint, aromatic grass, linalool, geranium, lavender and rose oil during 2010-2011.

With the increase in production of above essential oil, it would be possible for the country to save more valuable foreign exchange in the coming years. The magic items of expert are ginger oil, sandal wood oil, lemon grass oil, jasmine oil, tuberose concrete and other essential oils.

Future Demand

Approximately 90% of the present requirement of essential oil in the country is met by the indigenous production and 10% from import. This has been both vertical and horizontal growth in the production of essential oil.

- Peppermint and spearmint and other mint oil constitute 68% of total volume of production of essential oil in the country.
- The annual growth rate of pharmaceutical industry in terms of volume & value is expected to be between 11-13 % in the next 5 years.
- The other important sector showing rapid expansion is the processed food industry particularly ice cream and confectionery items.
- Fragrance finds use in toiletries and personal care products. Volume wise toiletries constitute 90% of all these products.
- The requirement of essential oils by consumer industries under fragrances, flavour and aroma chemicals are 60%, 20% and 20% respectively.

Conclusion

The essential oils were the item of luxury in the last few decades but now they have become the day to day usage commodities in the life of the common people also. It is been possible only because of the production of the synthetic oils. The usage of essential oil begins from the birth of an individual and ends at the stoppage of the breath. The usage of the natural essential oils is been boosted these days due to the awareness regarding the usage of them and less side effects when compared to the artificial oils.

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