

## Aromatic and Medicinal Plants: Why so Interesting Today?

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The content of this journal is dedicated to scientists belonging to the fields of Ethnobotany, Phytoanalysis, Chemistry and Ethnopharmacology, respectively. The history of plants being used for medicinal purpose is probably as old as the history of mankind. In fact, aromatic and medicinal plants are of special importance taking into account their role in health protection as preventive or supportive therapy for numerous diseases and disorders. The message to eat at least five servings of different fruit, berries and vegetables per day that will increase the diet with compounds that have beneficial health effects is not any more a hypothesis but a 'truth'. Currently, there is an increased interest for qualitative and quantitative analysis of plants as a source of potential chemotherapeutic agents.

Indeed, despite the recent interest in molecular modelling and synthetic chemistry techniques by pharmaceutical companies, natural products, particularly medicinal plants, continue to provide natural product chemist's with valuable bioactive compounds of starting points for the development of new drugs. In fact, natural products and their derivatives represent more than 50% of all the drugs in clinical use in the world; for example, of the 121 prescription drugs in use today for cancer treatment, 90 are derived from plants. In both 2001 and 2002, approximately one quarter of the best-selling drugs worldwide were natural products or derived from natural products. Also, the aromatic plants are in great demand in the world, for their multiple uses. The demand for these plants is increasing continuously in many important fields e.g. medicinal cure, perfume production, soap and cosmetics, refreshing beverages and nutritious etc. However, unless a continuous scientific study of the aromatic profiles of these plants, there is there no guarantee of authenticity, to protect the consumer to be deceived by doubtful products.

Aromatic plants possess odorous volatile substances which occur as essential oil, gum exudate, balsam and oleoresin in one or more parts, namely, root, wood, bark, stem, foliage, flower and fruit. The characteristic aroma is due to a variety of complex chemical compounds. The term essential oil is concomitant to fragrance or perfumes because these fragrances are oily in nature and they represent the essence or the active constituents of the plants. They are called volatile or ethereal oils as they evaporate when exposed to air at ordinary temperatures. Essential oils are highly concentrated, low volume, high value products.

The world of essential oils has since then come out from the narrow field of definition to a wide variety of applications in flavours, disinfectants, oral hygiene, tobacco, pharmaceuticals and in almost all spheres of human activity. In the world wide flavour and fragrance market, essential oils constitute about 17 per cent. The estimate of world production of essential oils varies from 40,000 to 60,000 tonnes per annum. The demand for spice oils is placed at 2,000 tonnes per annum.

Out of a total of about 1500 species of aromatic plants which serve as a source of raw materials for the perfumery, information on the chemistry and properties of essential oils of only about 500 species is known in some detail at present. Of these, about 50 species find use as commercial source of essential oils and aroma chemicals, though the number of those having regular and large scale utilization hardly exceeds two dozens. Essential oils and aroma chemicals constitute a major group of industrial products.

These oils form indispensable ingredients of the necessities in many spheres of human activity. They are adjuncts of cosmetics, soaps, pharmaceuticals, perfumery, confectionery, ice-creams, aerated waters disinfectants, tobacco, agarbathis and a host of related products. However, with the recent advances in organic chemistry, the synthetics have outnumbered the naturals in a ratio of about 200:1 due to limitations in the availability of the latter in sufficient quantities at a steady price over a period of time. Naturals are seen as good and safe. The concern for nature and the love for all things which are basic and natural has been spearheading to a green movement of everything natural and nature-based consumer products all over the world. A future shock is awaiting the industry as the already dwindling world resources of coal and petroleum on one side and the philosophy of going back to the nature is gaining acceptance internationally on the other side. This will revert the dependence of the industry on the petrochemicals to the perennial source of naturals. Thus, because of a large spectrum of usage in the everyday life of man, the essential oil and aroma industry has a bright future.

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