

MEDICINAL PLANTS CONTAINING ESSENTIAL OILS

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Abstract: methods for determining the value of essential oil plants in medicine and the national economy, modern methods.

Key words: water vapor, lighting method, composition, application, essential oils.

Eucalyptus Introduction: Essential oil refers to a mixture of volatile organic substances that are released from plants with the help of water vapor and have a specific smell and taste. Aromatic plants and some products of their processing (fragrant waters, resins and essential oils from plants containing essential oils) have been known since ancient times. People widely used these products in the treatment of various diseases and in cooking. In the Middle Ages, the Arabs were well aware of the methods of extracting essential oils from plants with water and separating them from water.

Although the properties and components of essential oils have been studied since the 18th century, work in this area was especially vigorous in the second half of the 19th century and the beginning of the 20th century. A. M. Butlerov and A. N. Reformatsky (Russia), Gildemeister and Hoffmann (Germany), E. E. Wagner and his students (Poland) and other famous scientists made a great contribution to the study of essential oils. Hyacinths - Lamiaceae (labial - Labiatae), plumes - Apiaceae (umbelliferous - Umbelliferae). Compositae - Asteraceae (Asteraceae - Compositae). Solanaceae - Cheopodiaceae. Juniper (cypress) - Cupressaceae, myrtle - Myrtaeae, rutaceae - Rosaceae and representatives of other families are rich in essential oil. The organs that produce and store essential oils are mainly divided into two groups: 1. External - exogenous organs are located on the surface of plants and are located on the epidermal tissue. 2. Internal - endogenous organs are located under the epidermal tissues. Exogenous organs that produce essential oils include glandular spots, glandular hairs, and specialized glands. Typically, glandular spots are located on the petals of a flower, and the oils they secrete are collected under the cuticle layer above the epidermal tissue. As a result, small spots of essential oil accumulate, which can only be seen under a microscope.

Sometimes the plant has glandular hair heads on the leaves, stems and flower heads. These pods can produce essential oil. This is why these feathers work well with essential oils; called tlx. Places where essential oil accumulates are formed in plant organs in different ways. The cavity is formed as a result of compression of tumor

tissue cells. Cells that secrete essential oil then appear along its edges and form a collection site for the oil. This method is called shieldogenic type. Sometimes one drop of essential oil, which is pre-produced in the tissues, dissolves surrounding cells and creates a cavity. As a result, cells that secrete essential oil appear around this space, creating a place where oil accumulates. This method is called lysogenic type. Usually in plants you can find more places where essential oil accumulates according to the schizolisogenic type due to the generalization of these two methods in tissues. In this case, the essential oil produced in the space created by the compression of the cells dissolves the surrounding cells and creates a place where the oil accumulates.

Methods for extraction of essential oils, their physical properties, chemical composition and analysis: Essential oils can be obtained in 5 different ways:

1. A method of extracting essential oil from plants using water or steam. This is the oldest and simplest way to obtain essential oil: the crushed organ of the plant is placed in a cube (or flask in the laboratory) and filled with water, then the cube (or flask) is connected to a cooler and heated. Essential oil vapor passes through a steam cooler, turns into a distillate in the form of cloudy water, and then ends up in a receiving vessel. After standing for some time, the distillate is collected either above water or under water in specially made florentium vessels, depending on the density of the essential oil, and then the essential oil is extracted. The process for extracting essential oils using steam is as follows. Water vapor is created in a special flask or cube and passed under the container with the plant organ. In this case, the water vapor picks up the essential oil vapor and passes through the cooler. The vapors cool, turn into liquid and fall into special containers. When the essential oil is extracted by water, the plant organ heats up along with the water. In this case, the plant organ may be slightly burned, and the quality of the essential oil may be somewhat impaired. This phenomenon does not occur when the essential oil is driven by water vapor. Therefore, volatile essential oils are extracted from plants using steam.

2. The maceration method is based on the property of dissolving essential oils in fats. Therefore, this method is used to extract essential oils whose composition changes when heated. Flowers containing essential oil are placed in a special container, filled with olive oil and heated to 500°C. As a result, the essential oil in the product turns into olive oil. The oil purified from the flowers is used for special purposes.

3. The absorption method is based on the absorption of essential oils by solid oils. This method typically extracts high-quality essential oils from flowers that are destroyed by heat. The absorption process is carried out at normal temperature, so the composition of the essential oil remains unchanged and its qualities are preserved. Flowers may continue to release their essential oil during the absorption process, which lasts several days. To obtain essential oils using this method, a thick window measuring 50x50 cm in length and width is mounted on a special frame 5 cm thick and a mixture

of high-quality oil (3 parts pork fat and 2 parts beef fat) is applied. applied on both sides i) applied in a thin layer. Flowers or petals are placed on top of the oil. Then the frames are placed on special bases, and the flowers on them are renewed every day. If the flowering period of a plant in a plantation lasts more than 1-2 weeks, the oil on the glass is also renewed. In this way, aromatic oil is prepared. And these oils are used for special purposes. A method of absorbing essential oils with activated carbon has also been developed.

4. Obtained from products containing a large amount of essential oil (fruits of lemon, orange, spitz, bergamot and other plants) by pressing. A certain amount of essential oil is released even when squeezing the peel of the fruit of this plant with your hands. If you split the areas of essential oil with a toothed disc and squeeze the skin of the fruit, more oil will come out. Essential oil is also obtained in factories in the same way.

5. The extraction method is based on the good solubility of essential oils in most organic solvents. The essential oil is extracted from the plant organs at low temperatures using a volatile organic solvent. The organic solvent is then removed and the essential oil is extracted.

Physical properties of essential oils: Essential oils are predominantly colorless or sometimes variably colored (green, pale yellow, dark blue, red, brown) volatile substances with a characteristic odor and pungent taste; they are a transparent liquid. Its density is often lighter than water, sometimes heavier. The density of very light essential oil is 0.8; and the heaviest is 1182.

Chemical composition of essential oils: Essential oils consist of a mixture of organic substances, including all saturated and unsaturated compounds, aliphatic, cyclic and aromatic hydrocarbons, terpenes, alcohols, fatty acids, phenols, esters, aldehydes, ketones, lactones and other organic substances. substances containing nitrogen and sulfur. The formula of geraniol alcohol in rose essential oil is as follows:



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