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Artemisia Leucodes Schrenk. From the Plant Separation of Chemicals

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Abstract:

Essential oil is a mixture of volatile organic substances with a unique smell and taste, extracted from plants using water vapor. Aromatic plants and some products obtained from them (aroma waters, tars and essential oils obtained from plants containing essential oil) have been known since ancient times. People use these products in the treatment of various diseases and in cooking used.

Introduction

In the Middle Ages, the Arabs knew well 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 18 th century, the work in this field was especially intensified in the second half of the 19th and the beginning of the 20th century. A. M. Butlerov and A. N. Reformatsky (Russia), Gildemeister and Hoffmann (Germany), Ye. Ye. Wegner and his students (Poland) and other famous scientists made a great contribution to the study of essential oils.

B.N.Rutovsky, G.V.Puglevskii, I.P.Sukervanik, N.G.Kiryalov, E.V.Wulf, V.I.Nilov, S.N.Kudryashov in studying the composition of essential oils, searching for plants containing essential oils, and growing plants with essential oils imported from foreign countries. , M.I.Goryayev and their students are of great service. Essential oils are widespread in the plant world. According to collected data, more than 2,500 types of plants in the flora of the globe contain essential oil. Among them, more than 1050 plant species belonging to 77 families grow in the territory of MDX, especially Lamiaceae, (Labiatae), Apiaceae, celery, (Umbelliferae), Asteraceae, (Compositae), Chenopodiaceae Plants belonging to Rhodoaceae, Cupressaceae, Juniperaceae, Murtaceae, Rutaceae, Rosaceae and other families are rich in essential oil.

Plants containing essential oil are grown in large numbers in Ukraine, Moldavia, Georgia, Tajikistan, Kyrgyzstan, North Caucasus, Crimea, and Voronezh regions. Almost all the organs of plants contain essential oil. It accumulates in the underground organs of flowers and fruits, leaves

and the entire upper part of plants. Sometimes different organs of the same plant can contain essential oils with different composition. For example, 4 types of essential oils with different composition are obtained from the leaves, flowers, raw fruit and the peel of the ripe fruit of the Pomeranian tree. The amount of essential oil in plants can be 0.001 - 20%. The amount and composition of these oils varies depending on the place of growth, the period of development, age and variety of the plant. A large amount of essential oil accumulates in different plants at different points. Usually, plants accumulate the maximum amount of essential oils during the flowering period or even earlier. Accumulation of essential oil in a large or small amount in the plant depends on the temperature and humidity of the air, as well as the abundance or scarcity of mineral substances in the earth. Usually, as the air temperature begins to rise, more essential oils are synthesized in the plant, and vice versa, as the air humidity increases, the amount of these compounds decreases. Moisture in the soil more or less than the average level leads to a decrease in essential oils in the composition of the plant. Also, drought causes a large accumulation of essential oils in some plants. Mineral substances, for example, potassium cation and PO_4 anion, have a good effect on the accumulation of essential oil in rosemary. Generally, the flora of the southern districts is rich in essential oil-storing species compared to that of the northern districts. The essential oils of plants grown in these conditions have a more complex aroma and a more complex aroma. That is, its significance has not been fully determined until now. Some scientists believe that essential oils and resins protect plants from various diseases, pests, rotting and poisoning. Some theories say that essential oils attract insects and help pollinate plant flowers. In addition, there is also an opinion that essential oils serve as plant waste or reserve food. Tandel believes that essential oils protect plants from overheating during the day and freezing at night, and regulate water evaporation in tissues. The amount and composition of essential oils in the plant is constantly changing depending on the period of its growth. If simple compounds were first synthesized in the plant, the composition of essential oils changes depending on the subsequent changes (germination, bud formation, flowering, fruiting, etc.) and becomes more complex at the end of the growing season. compounds are formed. Often, during the aging of plants, proteinaceous components accumulate in the oil. The above-mentioned evidence plays an important role in determining the physiological importance of essential oils in plants. Essential oils are collected in special organs that produce and store oil in plant tissues. Apart from free essential oils, glycosides are released freely only when broken down. Such glycosides are in the cell sap of tissues. Storage organs that produce essential oils are mainly divided into two groups. 1. External exogenous organs are on the surface of plants and are located on the epidermal tissue. 2. Internal endogenous organs are located under epidermal tissues. Exogenous organs that produce essential oils include glandular spots, glandular hairs, and special glands. Usually, glandular spots are located on the petals of the flower, and the oils they produce are collected under the cuticle layer above the epidermal tissue. As a result, spots appear, where a small amount of essential oil accumulates and can be seen only under a microscope. Some plants have glandular heads of hairs found on leaves, stems, and flowers. These buds can produce an essential oil. Therefore, such hairs are called essential oil-producing glandular hairs. Essential oil producing glands are the most complex of exogenous organs. Usually, they are located on the epidermal tissue of the stem, leaf and corolla with the help of pedicels. Pedicels are composed of one or more short cells, and heads are composed of 4-12 or more cells that produce essential oil. Because the essential oils are concentrated under the cuticle layer, the glands are often suction-shaped. Glands that

produce essential oil are especially abundant in plants belonging to the marigold and marigold families. Such glands can be seen under a microscope in mint, marmarak leaves and chamomile flowers. Endogenous organs that secrete and accumulate essential oils include places where oil accumulates, ducts, oil channels, and cells located in two rows under the epidermis or pod tissues of roots and rhizomes. These cells produce and store essential oil. The places where essential oils accumulate are spherical or oblong in shape, and are found in the leaves and petals of plants, bark, wood part and fruit peel. Places where essential oils accumulate are formed in plant organs in different ways. As a result of the compression of plant tissue cells, a cavity is formed, and then cells that produce essential oil appear at its edges. And they form a place where oil accumulates. This method is called schizogen type. Sometimes a single drop of essential oil, previously produced in the tissue, dissolves the surrounding cells and creates a cavity. As a result, essential oil-secreting cells appear around this space, which creates a place where the oil collects. This method is called lysogen type. Usually, in plants, it is possible to find more places where the essential oil formed by the synthesis of these two methods in the tissues of the schizolizogen type accumulates. In this case, the essential oil formed in the space formed by the compression of the cells dissolves the remaining cells around it and creates a place where the oil is collected. Ducts and essential oil passages can be considered places where the oil that has changed its shape (elongated) collects. On the inner side of their wall are cells that secrete oil. The origin of these cells may be similar to the formation of essential oil accumulation areas. We harvested the white wormwood plant by collecting the upper part of the plant from the surface and steaming it with 2-3 ml of 13 kg wet weight wormwood plant, by September and October, ether we observed an increase in camphor in the oil.

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