REPRESENTATIVES OF THE LAMIACEAE FAMILY PRODUCE ESSENTIAL OILS AND MEDICINAL AND HERBAL REMEDIES CONTAINING MONOCYCLIC MONOTERPENES

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Abstract: *All flowering plants common on earth belong to 300 families, of which 2500 species of 87 families have essential oils. In the flora of the CIS countries, there are more than 1100 species of essential oil plants belonging to 77 families. In Uzbekistan, 607 species of essential oil plants are known, they belong to 261 genera and 56 families. The mint family (Lamiaceae) ranks third among the Sympetalae in terms of size and species diversity after Asteraceae and Rubiaceae. This family contains about 170 genera and about 3400 species on Earth.*

Keywords: *family of labguldash, essential oil, pepper mint, marmarak, eucalyptus, anthrax, chemical composition, distribution, application in medicine.*

Terpenes are unsaturated hydrocarbons common in nature with the general formula (c5h8)n n=2, 3, 4 and H. k. maybe. All terpenes are usually considered as isoprene polymerization products. Depending on the isoprene compounds in the molecule, terpenes are divided into the following series: particular monoterpenoids (N=2) (often only these compounds are understood as terpenes); sesquiterpenes (N=3); diterpenes (N=4) (resin acids belong to the derivatives of diterpenes); triterpenes (N=6) (here enter sterols and hormones); polyterpenes (n from several hundred to tens of thousands) (including natural rubber, gutta-percha). Density of monoterpenes up to 1000 kg/m3, boiling point 150-190 ° C, sesquiterpenes 230-300 °, diterpenes above 300°. Terpenes are aromatic; insoluble in water, well soluble in organic solvents.Terpenes and their derivatives are part of essential oils, which are obtained from flowers, fruits, leaves of plants. Terpenes are obtained from plants by evaporation, dry plowing and extraction. It is widely used in the chemical, perfumery, pharmaceutical, paint, paper, soap industry. The main active components of essential oils of medicinal plants included in this group are menthol, cineol, limonene, pulegon, Menton, Karavon and other compounds.Terpenes are unsaturated hydrocarbons common in nature with the general formula (c5h8)n n=2, 3, 4 and H. k. maybe. All terpenes are usually considered as isoprene polymerization products. Depending on the isoprene compounds in the molecule, terpenes are divided into the following series: particular monoterpenoids (N=2) (often only these compounds are understood as terpenes); sesquiterpenes (N=3); diterpenes (N=4) (resin acids belong to the derivatives of diterpenes); triterpenes (N = 6) (sterols and hormones belong to them); polyterpenes (N from several hundred to tens of thousands) (natural rubber, gutta-percha belong to them). Density of monoterpenes up to 1000 kg/m3, boiling point 150-190 ° C, sesquiterpenes 230-300 °, diterpenes above 300°. Terpenes are aromatic; insoluble in water, well soluble in organic solvents.Terpenes and their derivatives

are part of essential oils, which are obtained from flowers, fruits, leaves of plants. Terpenes are obtained from plants by evaporation, dry plowing and extraction. It is widely used in the chemical, perfumery, pharmaceutical, paint, paper, soap industry. The main active components of essential oils of medicinal plants included in this group are menthol, cineol, limonene, pulegon, Menton, Karavon and other compounds.

Peppermint leaf and oil– Folia et Oleum menthae pideritae . Peppermint — Mentha piderita L., belongs to the clear—flowered family — Lamiaseae (labiatae). A perennial herbaceous plant, reaching 30-100 cm in height. The stem is few, erect, tetrahedral, glabrous or rarely pubescent. The leaf is simple, oblong-ovate or lanceolate, pointed, with a sharp sawtooth edge. The leaves are opposite with short stripes on the stem. The flowers are small, pink, pale purple or reddish-purple, form a spike-shaped inflorescence located at the end of the stem and branches. The inflorescence is tubular, Purple, five-toothed, remains with the fruit. Inflorescence slightly curved, funnel-shaped, four-part (unlike other labiaceae); paternal 4, maternal node 4-lobed, located above. The fruit Is 4 nuts Connected by a cup. Geographical distribution. Peppermint is not found in the wild. U Mentha aquatica L. featuring Mentha spicata Gilib.it is assumed that it arose as a result of crossing. Peppermint pepper is mainly grown in Ukraine, as well as in the Krasnodar Territory, the republics of Belarus and Moldova. Pepper is two types of mint: black pepper is mint, and white pepper is mint. The white pepper stem and mint veins are white-green, and the black pepper stem and mint veins are reddish-purple. As a medicinal product, black pepper, a type of mint, is mainly grown. Since the smell of the white mint variety is subtle and pleasant, it is grown for the perfumery (perfume) and food industry. Breeders have bred high-yielding varieties of pepper No. 541, “Prilukskaya-6“, “Krasnodarskaya-2“ and others that give a lot of essential oil and menthol of peppermint. These varieties are frost-resistant and practically do not suffer from fungi. Preparation of the product. Pepper is mown in the hayfield during the budding of mint or after the half-life of flowers (since at this time peppermint contains a lot of essential oil). After the first mowing, the bruise is mowed again in autumn at the base of the plant. The collected product is cooled on a hammer, and then dried on antimony or in an air dryer. At the same time, the fleas on the stem begin to reset. Shaking the stem with a panache, the fallen leaves are collected and dried in the sun last of all. It is cleaned of the remains of the stem, sand, chips and other impurities and placed in boxes. The product is sent to pharmacies and factories to receive Galena preparations. Essential oil is the product from which pepper is obtained, collected during the flowering of peppermint. During this period, although there is little essential oil, there is a lot of menthol in it. After the harvested plant dries, it is cleaned and sent to factories to obtain essential oil. The appearance of the product. The finished product consists of an oblong-ovate or lanceolate, short-filiated, pointed, sawtooth leaf with uneven edges. Leaf length up to 8 cm, width up to 3 cm. The upper side is dark green, and the lower side is light green. The veins of the second order come out of the thick vein, forming an angle, and merge with the tips, forming a parallel line along the edge of the leaf. The product has a sharp pleasant smell, the taste ferments the tongue and keeps it icy for a long time. Microscopic structure of the product. The external structure of a leaf illuminated by boiling in an alkali solution and washed in water is examined under a microscope in a chloral hydrate solution. The cells of the epidermis have curved walls, oysters

are located on both sides of the leaf, they are surrounded by two epidermal cells (typical of the family of Labiaceae). The epidermis of the leaf will consist of two-four-cell thick-walled long warty hairs, as well as single-celled hairs of oval or obovate shape with a glandular head and single-celled short hairs on the legs. Long hairs are rare and occur only along the edge of the leaf and above the veins, and hairs with a glandular head are scattered on the leaf plate. In addition, the epidermis of the leaf on both sides will have essential oil glands connected by a short leg. These glands consist of 8 cells producing essential oil, located along the radius. Accumulating in the glands that produce essential oil, the oil accumulates under the cuticle layer. Sometimes menthol crystallizes under the cuticle layer. There will be no calcium oxalate crystals on the sheet. Chemical composition. The leaf of the plant contains 2.40-2.76% essential oil, in the inflorescence-4-6%, in the stem-0.3%. Pepper new mint varieties contain up to 4-5% essential oil. According to XI DF, the leaf should not contain less than 1% essential oil (provided that the essential oil evaporates during the storage period of the leaf). Essential oil is extracted from the aboveground part of the plant using water vapor. The oil is a clear, colorless or pale yellow liquid with a strong aroma and a pungent taste that cools the mouth for a long time. According to XI DF, the essential oil obtained from peppermint should have a density of 0.900-0.910, a refractive index of 1.459-1.470, a deviation angle of the plane of polarized light of 18°, 20°, 32°, an acid number up to 1.30 and an essential number above 11.5 (corresponds to at least 4% of menthol acetate ester). When the essential oil is cooled, its stearoptin-menthol is released in crystalline form. The oil contains 41-70% menthol, 6-25% Mentone, limonene, cineol, pulegone, as well as esters of 4-9% menthol with acetic, valerian acids and other compounds. According to XI DF, essential oil must contain at least 50% of the total amount of menthol in a free and complex essential state. In addition to essential oil, peppermint contains 40 mg% carotene, flavonoids, 0.3% Ursol and 0.12% oleanolic acid. Using. Pepper: preparations from peppermint leaves, water and peppermint tincture made from essential oil are used against nausea and vomiting, as well as to improve digestion. In addition, mint water is used to rinse the mouth and improve the taste of medicines. Menthol extracted from essential oil is used for diseases of the ears, nose, respiratory tract, as well as to relieve toothache. Menthol is used to make a migraine pen, which relieves headaches. The drug menthol-validol is used for chest tightness (angina pectoris). Essential oil and menthol are also used in the food and perfume industry. Medications. Tincture is made from the leaves, mint water is made from essential oil-Aqua menthae and tincture; menthol is part of the migraine pen and validol. The leaf is a soothing, choleretic agent, is part of the combined teas used for stomach diseases, as well as tablets and drops used to relieve abdominal pain. Menthol is a part of ingofen.

Marmara (mavrak) leaf - Folia Salviae. Marmara officinalis (mavrak) - Medicinal sage L., belongs to the family of clear-flowered Lamiaceae (labiatae). Perennial, semi-shrub, reaching 20-50 cm in height. The stem is numerous, branched, crescent-shaped, tetrahedral, the lower part is slightly woody. The leaf is simple, with long stripes, the uppermost on the stem without stripes, located opposite on the stem. The flowers are small, with short stripes, form a spike-shaped, rounded false inflorescence on the tops of stems and branches. The flower is oblique, the inflorescence is double, heart-shaped, the inflorescence is double, blue-purple, the paternal is double, the maternal node is four-lobed, located at the top. The fruit is 4 nuts.

blooms in June-July. Geographical distribution. Originally from the Mediterranean countries. It is grown in Moldova, Ukraine, Krasnodar Krai. Preparation of the product. The marble leaf is harvested by hand three times a year (starting from flowering). At the first and second collection, only the leaves at the base of the stem are removed. And at the third harvest (in September), all fleas on the stem and top of the stem-top (up to 10% is allowed) are collected and dried in attics or in air dryers. The appearance of the product. The finished product consists of a sheet with a long strip, oblong or broadly lanceolate shape (sometimes with one or two small lobes at the base of the leaf plate). The tip of the leaf plate is blunt, the edge is blunt-toothed. Large leaves are 6-10 cm long and 2-2. 5 cm wide, small ones are 2 cm long and 0.8 cm wide. Young leaves are silvery due to the fact that they are covered with many small hairs (especially on the underside). Large leaves have few hairs, the upper side of the plate is grayish-green, and the lower side is gray. Since the veins of the 3rd and 4th order located on the leaf are immersed inside from the upper side of the leaf plate and convex from the bottom, the lower side of the plate looks like a homogeneous fine grid. The product has an incredibly sweet aroma and a bittersweet, slightly tart taste. Microscopic structure of the product. When boiling in an alkali solution, the appearance of the illuminated sheet is visible in the microscope. The upper epidermis of the leaf is polygonal or rounded, with slightly curved walls, and the lower epidermis consists of cells with curved walls. Oysters are located mainly in the lower epidermis and are surrounded by 2 epidermal cells (typical of the Labiaceae family). The hairs on the leaf are of two types: simple (with 3-4 small and one long curved cell) and head-shaped. The head bristles are small, consist of a short leg with 1-3 small cells and a single-celled head of a rounded shape. The head hairs are located mainly along the leaf vein. The essential glands are almost invisible behind the hairs. These glands have a rounded shape and consist of 8 cells located along the radius, producing essential oil. Chemical composition. All plant organs contain essential oil. The leaf contains 0.5-2.5% essential oil, alkaloids, tannins, flavonoids, ursolic and oleanolic acids, as well as other compounds. According to XI DF, the essential oil content in the product should not be less than 1% in the whole product and 0.8% in the shaving product. The essential oil contains up to 15% cineol, thujone, borneol, camphor and other compounds. Using. Medicinal preparations from marmara leaves are used as an astringent, disinfectant and anti-inflammatory agent for inflammation of the upper respiratory tract, mouthwash (for stomatitis and gingivitis) and throat. Medications. Drip. Marmara leaf is a part of the combined teas used for inflammation of the throat, chest, upper respiratory tract, gastric diseases and diarrhea. The medicinal preparation “Salvin“ is obtained from the leaves of marmara. Its 0.1 and 0.25% solutions in water or isotonic sodium chloride solution are used in the treatment of chronic inflammatory diseases of the oral cavity (gingivitis, stomatitis, periodontal disease), purulent, tropic and bone fistula wounds.

Conclusion: Summing up, we can say that essential oil plants since very ancient times, people have used the leaves, fruits and seeds of various spices and essential oil plants to give dishes a pleasant taste and pleasant aroma. Recently, raw materials obtained from essential oil plants have been used in various sectors of the national economy. In particular, essential oils are widely used in the perfume industry for the production of perfumes, toothpastes and powders, lipsticks and soaps. Due to the fact that essential oils have volatile and bactericidal

properties, aroma, they can be used for disinfection of public buildings, schools, kindergartens, cinemas.They are used to control pests and diseases of agricultural plants. Thus, along with the use of essential oils in various sectors of the national economy, the demand for them on the international market is growing every day.

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