

MORPHOLOGY, CHEMICAL COMPOSITION AND MEDICAL USE OF PEPPER
MINT PLANT

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Abstract: *This article describes the morphology, ecology of distribution, agrotechnical measures, preparation of raw materials and its quality, use in medicine and folk medicine, chemical composition and recommendations on the use of the plant. Today, traditional medicine (folk medicine) is a very rich and vast body of experience and knowledge, imbued with folk ingenuity. It is an inexhaustible resource that enriches scientific (official) medicine with new, effective medicinal preparations. The value and role of folk medicine in this field is priceless. For this, as an example, it is enough to remember that most of the medicinal plants used in modern medicine were taken from the treasury of folk medicine in a short time, or that modern scientific medicine developed on the basis of folk medicine.*

Key words: *peppermint, perennial herb, essential oil, menthol, methylacetate, mentafuran, seneo.*

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Peppermint (*M. longifolia* (L.) L.). A perennial herb with well-developed horizontal rhizomes. The stem is erect, four-sided, branched, densely leafy, up to 1 m high. The leaves are sharpened, elongated-ovate, with sharp saw-like edges, up to 8 cm long and about 2 cm wide, with short bands. The flowers are pink or pale purple in color, collected in a small false ring, forming spike-like inflorescences. The fruit consists of four nuts, rarely produced. The plant is very fragrant. It blooms in June-October; it bears fruit in July-September. The spread of the plant. In Uzbekistan, bitter mint is grown at the Shifobakhsh scientific production farm and by local residents in their homesteads.

Agrotechnical activities. The area intended for mint cultivation is plowed to a depth of 25 cm in autumn. Before plowing, 20 tons of rotted manure and 100 kg of phosphorus are applied to the ground per hectare. Mint is propagated from rhizomes. Before planting, 8-10 cm long cuttings are prepared. Cuttings are planted in March-April in furrows prepared at a depth of 10 cm at a distance of 20-25 cm from each other. When the rows are 60 cm apart, 7-8 thousand rhizomes are needed for one hectare of land. After planting, watering cans are removed and watered until the soil is saturated with water. The development and good yield of mint depends on regular watering and fertilizing. Peppermint is very demanding on organic and mineral fertilizers. The plant is fed with 40 kg of nitrogen and 20 kg of potassium

fertilizers per hectare 17-20 days after planting or when side branches appear. The second feeding is carried out by giving 40 kg of nitrogen and 30 kg of phosphorous fertilizers in the stage of pruning. Taking into account that peppermint requires a lot of mineral fertilizers during the flowering phase, 30 kg of nitrogenous and potassium fertilizers are added per hectare and feeding is stopped. During the growing season, 100-120 kg of nitrogen, 80 kg of phosphorus and 60 kg of potassium fertilizers are fed per hectare in the first and subsequent years. The soil should always be moist. It is also important to loosen the soil from time to time and clean it from weeds. If it is not watered enough, the plant will grow short and produce less. In the first year of planting, the plant is watered 8 times, the soil is softened and planted 5 times. In the second year, the number of waterings does not change, the plant occupies almost all the free land and forms a high vegetative mass, so the rows are softened only in the spring. In the third year, the field is not softened. It is fired manually as needed. In the spring of the fourth year, the field is turned over with the help of cultivators, and the rhizomes are harvested and planted in another field.

Productivity per hectare is 4-5 centners in the first 1-2 years, 15-17 centners in 3-4 years.

Preparation of raw materials and its quality. Peppermint leaves, essential oils and menthol are used in the treatment. For pharmacies, the leaves of the plant are harvested using special tools when 50-75% of the flowers are in bloom. Varieties that store high essential oils are harvested in August-September. Drying of plant leaves is carried out in special dryers at temperatures not higher than 30-35°C. According to the state pharmacopoeia, the following requirements are set for bitter mint leaves: humidity from 14%; ash from 14%; The amount of ash soluble in 10% hydrochloric acid is from 6%; blackened leaves should not exceed 5%.

Requirements for trimmed and ground raw materials: 10% of parts larger than 10 mm; The fractions passing through a 0.5 mm sieve should not exceed 8%. The amount of essential oils should not be less than 1% for both cases.

The leaves of the plant are stored in warehouses in 30-50 kg bags.

Use in medicine and chemical composition. The content of essential oils in bitter mint leaves is 3% in the southern regions, 2-2.5% in the northern regions; and the amount of menthol in essential oil is 50-55%. The essential oil of the plant contains menthol, menthone, methylacetate, mentafuran, seneol and other biogenic substances.

Essential oils are used in perfumery, food industry, production of alcohol products.

In addition to essential oils, the leaves of the plant are rich in carotene, organic acids and other compounds. Fragrant teas and tinctures are prepared from the leaves of the plant, which dilate and refresh blood vessels.

The main active substance of the plant is menthol, which is used as a pain reliever in neuralgia, myalgia, arthralgia, and with other drugs as a vasodilator and sedative. Menthol is part of validol, valocardin drugs. Recommendations. Each climate has its own aspects of plant propagation. The plant develops poorly in soils with heavy, salty, sandy and poor organic matter, and the rhizomes are not well formed. As a rhizomatous plant, it can be grown in large plantations on fertile and sandy soils. Environmental and climatic conditions affect the quantity and quality of essential oils in plants. The highest amount of essential oils in the plant is obtained in soils with lower moisture content, and the highest vegetative mass is obtained in soils with higher moisture content. Mint is considered as a long-day plant: in long-day

conditions, the plant differs in its better growth and the abundance of essential oil in its composition than in short-day conditions. The amount of essential oil also increases in conditions of high solar radiation. Although the amount of essential oils in the plant grown in northern regions is low, the amount of the main menthol substance in it increases.

Summary: In summary, this plant is used in folk medicine for nausea, vomiting and diarrhea associated with inflammation of the stomach and intestines, especially painful colic and large amounts of intestinal gas. is used when

It is recommended to drink mint tincture in the morning in case of chronic stomach diseases. The use of peppermint is especially effective when the acidity of gastric juice increases. Peppermint is also prescribed for diseases of the liver and gall bladder (as an analgesic and expectorant) and as a sedative for various nervous disorders.

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