



CULTIVATION AND MEDICINAL PROPERTIES OF MEDICINAL VALERIAN PLANT (VALERIANA OFFICINALIS)

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The direction of the technology of cultivation and processing of medicinal plants

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Botanical description. Medicinal plants and medicines obtained from them are widely used in medicine for the prevention and treatment of heart and blood vessel diseases, especially for calming the nervous system. Medicinal valerian belongs to such medicinal plants. After the independence of our country, in some farms, for example, in the specialized state forestry farm named after Abu Ali ibn Sino in Pop district of Namangan region, in the specialized state forest farm named after Y. Okhunboboyev in Tashkent region, and in some private farms in Parkent district. certain positive works were carried out in the field of valerian cultivation and it was proved that this medicinal plant can be cultivated in the mountainous regions of our Republic. Currently, more than ten medicinal plants are cultivated in the specialized state forestry farms of our republic, valerian is one of them. Medicinal valerian - *Valeriana officinalis* L, belonging to the Valerian family (Valerianaceae), is a perennial herb, the rhizome is short and covered with many small rhizomes, and it is upright underground. From the rhizome, the rhizomes grow in the first year, and the stem grows from the second year. The stem grows up to 1.5-2.0 meters. Cylindrical, not branched with small edges (sometimes the upper parts are branched), hollow inside, the upper part is hairless, and the lower part is covered with hairs. The leaf is simple, separated with odd feathers, consisting of 4-11 pairs of segments (lobes). Root leaves are long banded, while stem leaf bands become shorter as they reach the top of the stem. The leaves are opposite on the stem. The flowers are small, fragrant, and gathered in a large shield-like flower at the end of the stem. Calyx leaves are not clearly known as they are turned towards the inside of the flower. The inflorescence is funnel-shaped with five lobes, the tip is turned inward, white or pink in color, with 3 male and 3 female nodes located below. The fruit is oblong, light brown in color. It blooms in May-August and bears fruit in June-September. The fruit is an elongated egg-shaped, light brown pistachio. The weight of 1000 valerian seeds is 0.4-0.6 grams. It blooms from the end of May until August - September. Valeriana species are polymorphic plants. Perennial valerian is spread eastward from the border of Finland. In the south, its range extends to Moldova. In the Ulyanov regions, it grows mainly in grassy and peaty swamps along canals and water banks. About 250 species of them have been recorded in the wild in the world. It is distributed in the mountainous regions of North and South America, Europe and Asia. There are 23 species in the territory of the former union, 12 species in Central Asia, and 3 species in our Republic. Due to the fact that valerian species are scattered in nature, their natural reserves cannot meet the demand of the pharmaceutical industry and the population. Medicinal valerian - *Valeriana officinalis* L. is mainly used in medicine, this species is grown in special farms. Valerian roots and rhizomes are used to prepare medicines. It is called "Valeriana root" in pharmaceutical practice.

Agrotechnology of cultivation. Autumn plowing depends on the type of previous crop. Taking into account the moisture content of the soil, it is possible to irrigate the previous crop after harvesting, after which it will be easier to work the land. In clean lands, after watering, the soil is plowed to a depth of 28-30 cm. After watering the soil infested with weeds, the soil is softened to a depth of 7-9 cm using a plow with a special tipper or a plow without a plow. This action preserves the moisture in the upper part of the soil, keeps the field free of weeds and pests, the grass seeds turn green, and then disappear when plowed. In the fall, the land is plowed and leveled, and the area cleared of weeds is removed by chiselling, 60 cm wide, and 7-8 kg of manure is applied to each hectare of land. g' is sown, the depth of the planted seed should not exceed 1-1.5 cm. Valerian seeds are cold-resistant and germinate when the soil temperature is 50 oC. But the optimal level of seed germination is 15-20 oC. When the weather conditions are good, the seed will germinate 15-20 days after the seed is planted in the ground. In the second and subsequent years of vegetation, as soon as the snow leaves the ground, valerian grass sprouts. Care of valerian begins with loosening and mowing between the grasses. Sprouts are fed with local and mineral fertilizers. It is

recommended to give 30-40 kg of nitrogen and phosphorus mineral fertilizers per hectare. During the processing of valerian, in order to have a large mass of rhizomes and roots, overgrown flower stalks are removed. Valeriana can be propagated by seedlings in addition to seeds. For this purpose, a special nursery (nursery) is established, seedlings are grown, and the grown seedlings are transplanted to the open ground. Each seedling should be spaced 10-15 cm apart and watered immediately. Valerian roots are dug up at the end of the second year of vegetation, after the seeds of the plant have ripened. 15-20 centners of dry roots are dug from each hectare. The harvested product is cleaned from the soil, put in special containers or baskets and washed in water. It is left in the open for some time to drain and dried in a ventilated place or in a dryer at 35-40 °C. Valerian roots and rhizomes are odorless and oozing when wet, turn brown when dried and have a distinct "Valerian smell". These changes are the result of the fermentation process that took place during the drying period. In general, it is necessary to fully and continuously supply the needs of pharmaceutical industry enterprises with raw materials of medicinal plants, and to plant them to create a raw material base of medicinal plants, as well as to expand their cultivated areas and grow medicinal plants. development of plant farming in our republic is considered one of the main tasks before our agricultural sciences. Seeds are sown in spring. Do not forget about soil preparation between planting. In winter, seeds should be kept from cold harvesting. Planting field should have clean and fertile soil. Before plowing the land, 30-40 tons of manure and 35-45 kg of pure superphosphate are added to the soil. Sowing rate is 8 kg/ha, planting depth is 1-1.5 cm, spacing is 45-60 cm. During the vegetation period, it is sown 1-2 times, the egator is softened 4-5 times and watered 9-10 times. After each irrigation, the field is treated depending on the mechanical composition of the field. In the 1st-2nd year (60-70 kg/ha of nitrogen is added to the soil). In the second year of growth, weeding is carried out in the plantations along with fertilizing and applying herbicides against weeds. Planting is carried out, agrotechnical measures are used. The main focus of raw material collection should be on the loss of inflorescences. 10-15 cm of its inflorescences are lost during the general flowering period by mowing at this height. Before planting, valerian plants are treated with a small amount of chemicals to protect them from pests. Raw materials are collected in October. Because the root growth continues throughout the fall. The roots are washed and spread on racks 15-20 cm thick. put to dry in well-ventilated rooms for 2-3 weeks. The shelf life of pressed raw materials is 3 years.

Chemical composition. There are essential oils, alkaloids, isovalerian, vinegar, malic acids, saponin, additives. Valerian roots and rhizomes contain 0.5-2% essential oil and pure isovaleric acid. Valerian essential oil is mainly in thin roots, and isovaleric acid is more in young and old rhizomes. This oil contains barniol isovalerianate, a complex ester of isovaleric acid formed with barniol alcohol, as well as a complex ester of barniol formed with acetic and formic acids, as well as terxeniol, quinine, camphene, azulene, kesyl surface (chroazulene), limonene, pure barneol, isovaleric acid and other there will be compounds. In addition to essential oil, the product contains about 0.01% alkaloids (chatinine, valerine, actenidin, etc.), volatile bases, valeride glycoside surface, additives, sanonins, sugars, malic, vinegar and other acids.

Usage. In medicine, the rhizome and the root and the above-ground part are used. Its raw materials are used for insomnia, nervous diseases, improving the cardiovascular system. Medicinal plants and medicines obtained from them are widely used in medicine for the prevention and treatment of heart and blood vessel diseases, especially for calming the nervous system. Medicinal plants and medicinal products derived from them are widely used in obtaining and treating, especially in calming the nervous system. Medicinal valerian belongs to such medicinal plants, the root part of this plant is mainly considered medicinal, and in future production, it is necessary to carry out large-scale production of drugs important for humans from chemical compounds.

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