PREPARATION AND STANDARDIZATION OF BIOACTIVE ADDITIVES WITH DIURETIC EFFECT BASED ON LOCAL HERBAL RAW MATERIALS. BITTER WORMWOOD PLANTS AND ANCHORS

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Annotation: *The article presents the development of dietary supplements to improve the appearance of the skin. The regulated organoleptic, physico-chemical, and microbiological indicators of the quality and safety of the developed dietary supplement have been determined. The terms, conditions of storage and recommendations for use have been established. The characteristics of the prescription components that determine the functional orientation of the developed product are given. One of the priorities of a modern person is becoming a healthy lifestyle, including the condition and health of the skin. The appearance of the skin largely depends on the provision of essential micronutrients to the body. This is confirmed by the research of domestic and foreign scientists. In this regard, skin care using biologically active additives (dietary supplements) may be the most effective and in demand. It is necessary to develop and test new forms of targeted dietary supplements.*

Keywords: *Tribulus terrestris, alkaloids, wormwood*

This plant got its name for the original fruits, creeping anchors, or terrestrial, or earthy, Tribulus terrestris L. They belong to the family of spring—leafed plants - Zygophyllaceae. The fruits have sharp thorns that stick into the legs of animals, into car tires and, thanks to this, are transported over long distances. The anchors are a glaucous, hairy annual with a thin root and stems up to 10-60 cm long, branched from the base, spread out on the ground. The leaves are compound, pinnate, and arranged oppositely on the stem. Leaflets, usually consisting of 6-8 pairs, are almost sessile, oblong, blunt at the tip, small, the entire leaf reaches 2-6 cm in length. Small, few yellow flowers on short, upward-pointing pedicels are located singly in the axils of the leaves. The fruits are fractional, dry, and consist of five star—shaped nutlets that fall off when ripe. On the outside, the fruits are studded with 2-4 strong and sharp spikes, tubercles and bristles. It blooms in April — May, bears fruit in June — July. Creeping anchors are known as a poisonous plant, and poisoning with them is observed in some years and depends on the weather conditions in spring and summer. During these periods, characterized by rapid plant growth, on hot sunny days after rains, anchors are especially poisonous, and only for animals with white fur. The substances contained in the plant at this time, when ingested by an animal, cause increased sensitivity to sunlight. Poisoning can be so severe that in most cases it ends with the death of animals. In popular medicine in many countries, anchors are used for various diseases. For example, in Italy they are used as a sexual stimulant, as well as a tonic, astringent and diuretic. They are used as a diuretic in China, Central Asia and Georgia, in Kyrgyzstan as a wound healing agent, in Azerbaijan for bloody diarrhea, in America for gonorrhea and colds. In China, the fruit is

used as an abortifacient, and the herb is part of pills used for leprosy. The chemical composition of this plant has not been studied enough yet. The alkaloid harman, resinous and coloring substances were found in the grass, vitamin C up to 160 mg% was found in the leaves, five alkaloids were found in the seeds, tannins and about 5% of drying fatty oil were found in the fruits. In recent years, five steroid saponins have been found in anchors, and diosgenin has been identified as their aglycone. According to other data, besides diosgenin, ruscogenin was also detected. igitogenin. The Tbilisi Institute of Pharmacochemistry of the Academy of Sciences of the Georgian SSR has prepared a liquid extract from the leaves of creeping anchovies, which has successfully passed the test as a diuretic. A drug called Tribestris was also offered by this institute for patients with decreased secretion of gastric juice. Further research on this interesting plant will reveal the secret of its diverse effects on a living organism, and perhaps new highly effective medicines will be obtained from the anchors.

Currently, scientists are showing increased interest in representatives of the wormwood genus Artemisia L. This genus unites over 400 species, distributed mainly in the temperate zone of the northern hemisphere, of which 174 species grow in the USSR. Wormwood species are most often found in steppes, others grow in semi-deserts and deserts, and some are weeds in all zones. The interest in wormwood is explained by the fact that in many species that have been 212 Sesquiterpene lactones, which are pharmacologically active substances, have been investigated and found. As a result of a comprehensive study, some wormwood preparations have been proposed for use in medical practice. One of such studied species is paniculate wormwood, or corona wormwood, A. scoparia W. et K. — a very widespread steppe plant. Its range covers the central and southern regions of the European part of the, Crimea, the Caucasus, Central Asia, southern Siberia and the Far East, and abroad — Western Europe, Asia Minor, Iran, Afghanistan, the MNR, China, Korea, Japan. It grows on light sandy and sandy loam soils, along river banks, in fields, pastures, on steppe meadows with saline soils, on gravelly slopes. It often forms large thickets, especially in the steppe and semi-desert southern regions. Paniculate wormwood is an annual or biennial plant, characterized by pinnately dissected leaves into narrow linear-lanceolate or filamentous lobules. Small yellow tubular flowers in small baskets are collected at the top of the stem and its branches, forming a spreading panicle. Blooms from late July to late autumn. Coumarin scoparone (0.25%), nzoqumarin capillarin, resins, tannins and essential oil (0.71—0.96%) were found in wormwood, which contains terpenes: alpha- and beta-pipene, myrcene, etc. In folk medicine, paniculate wormwood is used for respiratory tract diseases, rheumatism, and as a diuretic. In Siberia, a decoction of the herb is used for epilepsy. As a result of the research conducted at the Tashkent Medical Institute, a complex drug of the type of foreign drugs for the treatment of kidneys ("Enatin", "Rovatinex" and "Cystenal"), called "Artemisol", was proposed. Artemisol contains essential oil of wormwood paniculata. The drug is approved for use in medical practice by the Pharmacological Committee of the USSR Ministry of Health for the treatment of various forms of urolithiasis. However, the drug has not been widely used and is currently discontinued. Of the other wormwood studied, the wormwood of Sievers, A. sieversiatia Willd., which is distributed from the Volga to the east

throughout Siberia, the Far East, Kazakhstan, the MNR, China, and the Himalayas, deserves mention. In folk medicine, this type of wormwood in the form of tincture is used for heartburn, against worms, with intermittent fever. In large doses, wormwood Sievers lowers blood pressure, and in small doses, on the contrary, it increases it. As a bitter remedy, it is used to stimulate the activity of the digestive organs. A chemical study of Sivers wormwood showed that it contains alkaloids (up to 0.2%), flavonoids (up to 1.5%), anthocyanins, tannins in small amounts and lactones and essential oil in significant amounts (0.2—0.7%). Gamma-lactone, called siversinin, has been isolated from lactones.The essential oil contains cineol, borneol, alpha- and beta-pinenes, myrcene, fellandren, as well as hamazulenogen and hamazulene. The presence of hamazulene causes the blue or dark green color of the essential oil. In the essential oil of wormwood Sievers, the content of hamazulene reaches a high figure of 30%. Since azulenes have gained great importance in recent years due to their anti-inflammatory and anti-asthmatic properties and are used to treat ulcers, burns, trachoma, bronchitis and asthma, a pharmacological study of hamazulene isolated from wormwood essential oil was conducted. As a result of animal experiments, its anti-asthmatic effect and low toxicity have been established. The Pharmacological Committee of the Ministry of Health approved the drug hamazulene called Dimethulene for clinical trials. Hopefully, thanks to extensive research on many types of wormwood, the arsenal of medicinal products will be replenished with new highly effective drugs in the near future.

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