



The Biology of the Harmel, Ecology and Cultivation Technology

*Toshpulatova Khilola Toshboltaevna*¹

*Jumanazarov Mansur Noraliyevich*²

^{1,2} Student of Denov Institute of Entrepreneurship and Pedagogy

Abstract. Common frankincense (adraspan) — *Peganum harmala* L.; It belongs to the Zygophyllaceae family. It is a perennial herb 20-60 cm tall. A multi-headed tree with roots up to 2 m underground. The stem is several, branched, hairless. The leaf is simple, deeply divided into 4-5 parts, gray-green, the segments are sharp-pointed, lanceolate, 1-3.5 cm long. The leaves in the lower part of the stem are short-banded, the upper ones are unbanded, they are located in a row on the stem. Two additional leaves, lanceolate. The flowers are located singly at the tips of the branches and opposite to the leaves. The calyx is divided into 5 parts up to the base and remains with the fruit. 5 petals, white-yellow, 15 paternal petals, three-digit maternal node, located above. The fruit is a spherical, three-lobed, multi-seeded capsule that opens when ripe. The seed is small, three-sided, brown or brownish-gray, with small pits on the upper side. Frankincense blooms in May-June, the fruit ripens in August.

Keywords: Common incense, Adraspan, pod fruit, Central Asia, Caucasus, Ukraine, Russia, Europe, Oil, red pigment.

Introduction: Appendix 1 to the decision of the President of the Republic of Uzbekistan No. PQ-4901 of November 26, 2020. in the rational use of reserves of medicinal and food-producing, technical plants growing naturally in the territories of the republic, in studying their areas and natural reserves, in studying the biology and anatomy of objects of the plant world, wild-growing medicinal plants providing methodical and practical assistance in collecting plant samples and breeding the varieties with the highest concentration of medicinal substances, introducing them into production. In the commodity analysis and phytochemical comparison of plant raw materials of the same type of medicinal plants grown in different soil and climate conditions, as well as in the assessment of their quality, in studying whether the raw materials of medicinal plants introduced in the conditions of Uzbekistan meet the requirements of international standards. support in the implementation of national standards in accordance with legislation.

Geographic distribution. It grows in warm conditions, in populated areas, in deserts and semi-deserts, as a weed among crops and on mountain slopes. It is found in Central Asia, Kazakhstan, the Caucasus, Ukraine and the south of the European part of Russia.

Product preparation. The ground part of the incense is harvested when the plant is in bloom and the shade is dried on the ground. The dried product (sometimes not dried) is sent to factories for alkaloid extraction.

Appearance of the product. The finished product consists of a mixture of the upper part of the stem, branches, leaves, flowers and partially fruit. The undried product has a unique unpleasant smell. The dried product is odorless, gray or slightly yellowish-green in color and more salty-bitter in taste.

Chemical composition. There are 1.7-3.3% alkaloids in the root of the plant, 0.23-3.57% in the stem, 1.07-4.96% in the leaf, 2.82% in the flower and 2.33-6.60% in the seed. Harmaline, garmin (banisterin), harmalol, peganin (vasicin), deoxypeganin and other alkaloids were isolated from the total alkaloids. 50-



95% of the total alkaloids are harmaline (in the seed), 67-74% are garmin (in the root), and 78% are peganin (in the rhizome). In addition to alkaloids, the seed contains 14.23% oil and red pigment.



Usage. Frankincense has been used in folk medicine for the treatment of epilepsy and other diseases since ancient times. During outbreaks of ventilation diseases, the rooms where the patient was lying were disinfected with incense smoke.

In scientific medicine, the drug deoxyepigallocatechin gallate hydrochloride obtained from the root part of frankincense is used in the treatment of neuritis, myosthenia, myopathy, hemiplegia, and some diseases of the brain. Before that, in scientific medicine, the hydrochloride salt of garmin alkaloid extracted from frankincense was used in the treatment of parkinson's disease .

References

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