THERMOPSIS ALTERNIFLORA REGEL & SCMALSH PLANT CULTIVATION TECHNOLOGY

[1]Abdiniyazova G.J. *and* ***[2]Madiyarova N.O.***
[1]PhD of biological sciences, associate professor of the Department Agroecology and Introduction of Medicinal Plants, Faculty of Biology
2nd year master's student of the technology of cultivation of medicinal plants[2]
Karakalpak State University Named after Berdakh, Nukus, Uzbekistan.

Abstract: The article discusses the medicinal value of the plant Thermopsis alterniflora, gives distribution, stocks of raw materials, chemical composition, general botanical characteristics of the plant, its use in folk medicine.

Key words: natural medicinal plants, life forms, fruits, harvesting and quality of raw materials, chemical composition, habitats, distribution medicine.

Thermopsis is a perennial herbaceous plant of the legume family - Fabaceae, with cord-like branching roots reaching a length of 2.5-3.5 m, with a powerful multi-headed rhizome and a system of rhizomes giving rise to new above-ground shoots. Stems numerous, 30-100 cm high, straight, branched, furrowed, covered with sparse, slightly matted hairs. The leaves are alternate, trifoliate, with large lanceolate stipules 4-7 cm long. The inflorescence is an apical raceme up to 35 cm long, bearing from 5 to 25 flowers. Flowers yellow, large. The fruits are oblong-elliptical beans, covered with short, appressed hairs. Blooms from April to May. The fruits ripen by the beginning of August and by the end of this month they are almost completely crumbled. The medicinal raw material is the aerial part (grass) of the thermopsis alteflorum, from which the drug cytiton is obtained [1,2,3,5].

Alkaloids have been isolated from the aerial part of thermopsis altiflora; cytisine, pachycarpine, p-methylcytisine, thermopsin, alteramine, dimethamine, anagirin, argentine, argentamine. The seeds contain the alkaloids cytisine, pachycarpine, thermopsin. A method for obtaining pachycarpine from grass meal after the isolation of cytisine is being introduced into production. Flavonoids have also been isolated from the aerial part of the thermopsis alternate-flowered [3,5].

Cytiton is used as a strong remedy that reflexively excites the respiratory center, in case of respiratory arrest during operations, injuries, infectious diseases, shock, various intoxications, asphyxia of newborns, and also as a means that enhances cardiac activity [5].

The collection of plants is carried out in April - May, during the period of budding and the beginning of flowering. Raw materials are harvested by hand. At the same time, the above-ground part of the plants is cut with a sickle (urak) at a height of 3-5 cm

above the soil level, without damaging the renewal buds. It is necessary to remember the poisonous properties of the thermopsis alteflorum and observe the usual precautions: during work, do not smoke, do not drink, wash your hands thoroughly before eating, protect the respiratory organs with a gauze bandage from dust when grinding dry raw materials [5].

Raw materials can be harvested again in the same area, but subject to a one-year break. Freshly harvested grass is laid out in a thin layer as quickly as possible on prepared, even, clean areas. After the plant has lost more than half of its mass, and when broken, the juice does not flow out of the stems, they are crushed with a straw cutter or silage cutter into pieces 2-6 cm long and again laid out in a thin layer on platforms or on a tarpaulin for drying. This excludes a significant loss of the active substance (cytisine) with the juice during the grinding of freshly harvested raw materials [5].

The seeds of the plant Thermopsis alterniflora Regel & Scmalsh were brought from the Botanical Garden of the Academy of Sciences of the Republic of Uzbekistan. Planting experiments were carried out in the experimental fields of the Faculty of Biology of the Karakalpak State University named after Berdakh located in the Kutli Makon OFY (photo-1). The results observed during the experiment are presented in Table 1.

On April 30, 2022, the seeds of the plant were cooled in warm water at 20-250 C for 2-3 hours, and the seeds were sown 1 cm deep, 20 cm, 25 cm, 30 cm apart. It germinated in 5-7 days because the land was well prepared for planting and was watered.

On May 5, 2022, a dicotyledonous sprout appeared on the surface of the earth. Observations were carried out for five days. On 10.V.2022, the plant grew 2 cm. Research is ongoing.

Table 1.

Thermopsis alterniflora Regel & Scmalsh – germination of plant seeds at different temperatures

options	temperature	Number of seeds	Planting day	Time to sprout	massive Массивкй germination time and number of seeds	in terms of fertility %
1	18^0 C	50	31.04.2022	05.05.2022	08.05.2022(45)	90%

2	19^0C	50	02.05.2022	07.05.2022	11.05.2022(43)	86%
3	20^0C	50	04.05.2022	10.05.2022	14.05.2022 (47)	94%
4	22^0C	50	07.04.2022	12.05.2022	17.05.2022(46)	92%

Agrotechnical measures**.** In our country, it grows well on all types of soil. Does not tolerate only saline soils and wetlands. During autumn plowing, 40 tons of manure are applied per hectare. The field is plowed to a depth of 25-30 cm. The seeds of the plant are sown in early spring (March) and late autumn. Germination is best when planted in autumn. For spring planting, the seeds are soaked in warm water for 2-3 hours at a temperature of 20-25^{0}C and rubbed into thin slices, stirring occasionally for quick drying. the seed is planted. The seed depth is about 1 cm, the distance between the rows is 60-70 cm, 10-12 kg of seeds are used per hectare.

After 3-5 true leaves are formed in the lawns, they are singled and 5-7 leafy seedlings are planted per meter of land. Thinning of shoots at this level ensures that the plant will be stagnant[2,3,5].

In the first year, in May-June season, the area where thermopsis is planted is softened 2 times, cleaned of weeds, irrigated 6-7 times (March-September-1). In the second and subsequent years, it is watered 3-4 times. It is transplanted 2-3 times (May, June) until the branches of Asfonak thermopsis bushes are connected to each other. In the first growing year, the height of the plant is 30-40 cm. In the first growing year, there is no general flowering in plants. From the second and subsequent years, the above-ground part is harvested at the beginning of budding and flowering [5].

The productivity of the surface part of the land is 20-30 centners per hectare. In the first year of vegetation, there is no general flowering in plants. From the second and subsequent years, the aerial part is removed at the beginning of budding and flowering. The productivity of the above-ground part of the earth is 20-30 q/ha [2,3,5].

Thermopsis alterniflora **Regel & Scmalsh – that the seeds of the plant were planted in the greenhouse and in the field experiment**

In summary, Thermopsis alterniflora Regel & Scmalsh seeds do best when sown in early spring (March) rather than late fall. For spring planting, the seeds are warmed for 2-3 hours in warm water at 20-25oC. 10-12 kilograms of eggs per hectare are used for sowing seeds at a depth of about 1 cm, the distance between rows is 60-70 cm.

In the first year after planting, the plant is watered 6-7 times in the May-June season. In the second and subsequent years, it is watered 3-4 times. In the first growing year, the height of the plant is 30-40 cm.

It is necessary to carry out comprehensive research on this plant, which is rich in cytisine, pachycarpine, p-methylcytisine, thermopsin, alteramine, dimethamine, anagirine, argentine, argentamine alkaloids and isolated flavonoids.

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