

POSTER PRESENTATIONS

Astragalus leptophysus PLANT IS SOURCE OF CYCLOARTANES

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Interest on plants of the genus *Astragalus* stems from the fact that their biologically active metabolites – specifically cycloartanes – possess a range of pharmacological properties, including sedative, hypotensive, vasodilating, cardiotonic, and diuretic effects. This genus comprises over 250 species within the Fabaceae family; interest in these plants is also driven by their chemical composition. *Astragalus leptophysus* is a relict endemic plant distributed across limited areas of the Western Pamir-Alay.

Astragalus leptophysus Vved. (Fabaceae) is a perennial herb with slender branches. It flowers in May, and its fruits ripen in June. It is distributed across the Samarkand and Jizzakh regions, the Turkestan Range, and the Nurata Mountains; it also occurs in Tajikistan (near the village of Fatmovut). The plant grows on rocky-gravelly slopes and scree, amidst mixed-herb and wormwood vegetation as well as juniper stands. It is found as solitary specimens or in small groups of 10–20 plants. The total distribution area of the population is approximately 5,000 hectares, and it reproduces via seeds. A primary reason for its decline is that it is readily grazed by livestock. It is protected within the Nurata State Reserve [1].

This study investigates the methanol extraction process of *Astragalus leptophysus* and its cultivation from seeds.

During field research, plant material was collected in May 2026 in the Forish District of the Jizzakh Region, at the Forish Pass, at an altitude of 1,900 meters above sea level.

The plant species was identified by A. Gaziev, a senior researcher at the Institute of Botany of the Academy of Sciences of the Republic of Uzbekistan.

Plant samples (0.980 kg) were dried and ground for extraction. To investigate the plant's phytochemical composition, extraction was performed using methanol in three cycles via two methods: 1. Maceration at room temperature; 2. Ultrasonic-assisted extraction (UAE) at 35–40°C. UAE was employed to enhance the efficiency of cycloartane extraction.

The yield of extractive substances from the methanol extract obtained via ultrasonic extraction is 5% higher than that from the extract obtained by maceration. The extracts have been prepared for the isolation of cycloartanes using column chromatography.

To cultivate *Astragalus leptophysus*, seeds were placed in Petri dishes to study their germination under laboratory conditions. The seeds were arranged on sterile filter paper and moistened with distilled water. The germination process was monitored daily, with observations recorded regarding seed swelling and the cracking of the seed coat.

Research is currently ongoing, and effective methods for the laboratory propagation of *Astragalus leptophysus* are being developed.

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References:

1. F. Khasanov. The Red Data Book of Uzbekistan Republic. 2019. V.1. P. 34. №27.