

BIOLOGICAL CHARACTERISTICS OF GREATER CELANDINE (CHELIDONIUM MAJUS L.) UNDER IRRIGATED CONDITIONS OF SAMARKAND REGION

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To investigate the biological characteristics of Chelidonium majus L. under irrigated conditions of Samarkand region and to develop effective methods for its cultivation

ABSTRACT

Seeds of Chelidonium majus L. imported from Germany served as the research material. Laboratory and field experiments were conducted using generally accepted methods of plant introduction, seed science, and field trial methodology (Karshiboev et al., 2008; Leurda, Belskikh, 1974; Dospekhov, 1979)..

Relevance. Medicinal plant species serve as valuable raw materials for the production of effective pharmaceuticals. Therefore, one of the priority tasks in our republic is to cultivate medicinal plants under controlled conditions, expand their assortment, and sharply increase the production of medicinal raw materials based on comprehensive study. According to Presidential Decree No. PQ-251 of May 20, 2022, *"On measures to organize the cultivation, processing, and wide use of medicinal plants in treatment"*, 42,310 hectares of land across Uzbekistan, including 4,493 hectares in Samarkand region, were allocated for establishing cultural plantations of valuable medicinal plants during 2022–2026. Research aimed at studying species that are rarely found in Uzbekistan's natural flora but included in the pharmacopoeias of developed countries contributes significantly to fulfilling these tasks.

Objective of the study. To investigate the biological characteristics of *Chelidonium majus L.* under irrigated conditions of Samarkand region and to develop effective methods for its cultivation.

Materials and methods. Seeds of *Chelidonium majus L.* imported from Germany served as the research material. Laboratory and field experiments were conducted using generally accepted methods of plant introduction, seed science, and field trial methodology (Karshiboev et al., 2008; Leurda, Belskikh, 1974; Dospekhov, 1979).

Results. The study showed that under new growing conditions, *Chelidonium majus L.* completes its full vegetation cycle and produces high-quality seeds. Locally obtained seeds had a 1000-seed weight of 0.5 g, laboratory germination of 91.4–93.0%, and field germination of 17.7–24.5%. Plant height ranged from 55 to 66.5 cm depending on the year, with each plant developing an average of 13–18 generative shoots. Seed productivity increased with plant age: in the first year, an average of 374 seeds per plant; in the second year, 4,167 seeds; and in the third year, 7,141 seeds. As medicinal raw material, the aerial biomass during flowering and the roots are used. When planted at a spacing of 60 × 40 cm, yields per hectare reached 1,469

kg with two harvests, 7,523 kg with one harvest, and 1,329 kg during overwintering. Thus, the results confirm the feasibility of successfully cultivating *Chelidonium majus L.* under local conditions.

Conclusions. Based on the findings, it can be stated that although *Chelidonium majus L.* does not occur naturally in Uzbekistan's flora, it can be successfully cultivated under local conditions, ensuring high productivity. Given that the retail price of 1 kg of fresh biomass averages 40,000 UZS, cultivation on 1 hectare (yielding 1,300–7,523 kg of raw material) could generate products worth 52–300.1 million UZS.