

MATING SYSTEM AND SEED REPRODUCTION IN *GERANIUM ASIATICUM* (GERANIACEAE)

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Mating systems and seed reproduction in gynodioecious *Geranium asiaticum* Serg. (*G. bifolium* Patr.) in 4 coenopopulations of Western Siberia (Novosibirsk Region) were studied. The bisexual flower of hermaphrodite plants of *G. asiaticum* is characterized by a longer flowering (2.5–3.5 days) than the pistillate flower of female plants (2–2.5 days), due to the passage of the male (staminate) phase at the beginning of morphogenesis; *G. asiaticum* is characterized by strict protandry. Mating of *G. asiaticum* plants follows the xenogamic type, the autogamy is completely excluded. In an experiment to isolate individual flowers, 100% of the isolated pistillate and bisexual flowers dried up without fertilization. In an experiment on artificial pollination of flowers, 85% (17 out of 20 flowers) of pistillate flowers developed fruits, only 10% (3 out of 30 flowers) of bisexual flowers developed fruits. There were significant differences in the number of flowers on the generative shoot in female and hermaphrodite plants. Significant differences were found between heterosexual plants in terms of the number of fruits and the number of seeds per generative shoot: female plants form 16.1–22.1 times more fruits and 13.8–28.3 times more seeds than hermaphrodites. Pistillate flowers form an average of 1.85 ± 0.08 seeds per flower, and bisexual flowers 0.07 ± 0.02 seeds per flower, i. e., on average, female plants form 26.4 times more seeds than hermaphrodites. It was found that the fruits and seeds are developed mainly by female plants, but hermaphrodites produce pollen which is necessary for fertilization. The different degree of sexual differentiation of *G. asiaticum* and *G. sylvaticum* L. suggests that in the genus *Geranium* there are transformations directed at the formation of dioecy.

Keywords: *Geranium asiaticum*, gynodioecy, mating systems, seed reproduction, coenopopulation

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