

Abstract

There are frequent hybridizations and polyploidizations in genus *Arabidopsis*, which complicate its inner structure. Nevertheless, minimum of attention was dedicated to this taxon and much informations which were not experimentally verified are still repeated in papers. Most of papers are focused on well studies species *Arabidopsis thaliana*, but only a few studies are focused on its wild relatives, including *Arabidopsis arenosa*. This species could be also successfully used as model for research of forming and evolution of alopolyloidization, plant adaptations and another evolution processes, which would be very complicated or even impossible to investigate on annual selfer *Arabidopsis thaliana*.

This diploma thesis is part of extensive research of wild *Arabidopsis* species. In the spotlight of this thesis is still unclearly separated *Arabidopsis arenosa* complex. This paper is focused on autogamy possibilities, which are partially represented in *Arabidopsis arenosa* complex, and compares production of autogamy seeds with production from outcrossing. This paper also points out absence of strong reproductive barriers among genetic lineages and ploidies in this complex. Absence of differences among genetic lineages and ploidies was also revealed in this complex.

Morphological differences of genetic lineages are also compared. There are some differences in life-history traits in diploid lineages and some differences depend on altitude in tetraploid lineages.