

The presented study tries to reveal the evolutionary history of polyploid complex *Galium pusillum* aiming on a rare czech endemic species *G. sudeticum*, an ideal model to study allopatric speciation in the context of Central European (post)glacial development.

The species *G. sudeticum* grows in Krkonose Mts. and on serpentines in western Bohemia (Slavkovský les) more than 200 kilometers away. Our morphological and molecular data suggest a clearly different history of its two isolated areas. The populations in Krkonose Mts. are probable relics of mountainous species *G. anisophyllum* which was there on its northern border of occurrence and hybridized with lowland species *G. valdepilosum* during postglacial vegetations shifts. This fact is well supported by intermediate position of Krkonose Mts. populations in both morphological and molecular AFLP analyses and by sharing the same chloroplast haplotype with geographically close lowland populations. On the other hand the serpentine lowland populations in western Bohemia are both morphologically and genetically indistinguishable from *G. valdepilosum*.

Distinct genetic lineage of few populations belonging to *G. valdepilosum* (incl. one traditionally referred as *G. sudeticum*) was found in western Bohemia and Bavaria, located on relic stands (calcareous and serpentine outcrops). This group may represent a rest of probably older migration and emphasizes the function of edaphically conditioned localities as a refuge of specific cryptic diversity.

Studied group is according to its genetic diversity young and little diversified, but variability within populations (incl. small and isolated ones) is very high. Sequencing of cpDNA shows high number of haplotypes shared among studied species, but somehow geographically restricted, indicating possible ancestral polymorphism or frequent hybridization in past.

Some unusual plants were found in Velká Kotlina (natural reservation Praděd; Jeseníky Mts.) a historic locality of *G. sudeticum*. These plants have tetraploid chromosome number but their relative genome size corresponds to hexaploid cytotype. It suggests hybridization between *G. pumilum* (8x) and *G. sudeticum* (4x) with subsequent chromosomal changes of unknown mechanism.

**Keywords:** *Galium*, *G. pusillum* agg., *G. pumilum*, *G. sudeticum*, *G. valdepilosum*, *G. anisophyllum*, hybridization, postglacial migration, allopatric speciation, polyploidization, endemism