ABSTRACT

Genetic characteristics of selected alpine and arctic-alpine species from genus *Cerastium* L. (Caryophyllaceae)

The genus *Cerastium* (Caryophyllaceae) consists of over 200 species. *Cerastium alpinum* is an arctic-alpine species that can be found in the northern part of North America and Europe, observed in the subalpine zone, also in Poland, where its only site of occurrence is on the Babia Góra (Żywiec Beskids, Western Carpathians). Although *C. alpinum* is a critically endangered species in Poland, so far there has been no data on the genetic variability of the species from its only Polish location. The results of the studies included in this doctoral dissertation have shown that despite geographical isolation and the past experience of a strong reduction of the effective population size, *C. alpinum* from Babia Góra is still an important reservoir of genetic variability on the species scale.

Taxonomic relationships within the genus *Cerastium* are still a subject of debate. The *C. alpinum* – *C. arcticum* complex, which consists of the *C. alpinum*, *C. arcticum* and *C. nigrescens* deserves special attention here. In order to obtain data enabling the unambiguous identification of the species and to shed more light on their phylogenetic relationships, the chloroplast genomes were sequenced. The obtained genomic data, together with information already available in the NCBI database for *C. glomeratum* and *C. arvense*, were used to characterize the size and structure of the chloroplast genomes, identify genomic repeats and microsatellites, and analyze the evolution of protein-coding sequences. The genomic data were also used to reconstruct phylogenetic relationships within the genus *Cerastium* and the family Caryophyllaceae.