

## Abstract

The thesis deals with phenotypic, ploidy and genetic variation of two *Campanula* species occurring in the Krkonoše Mts., namely the endemic *C. bohémica* and widespread *C. rotundifolia* subsp. *rotundifolia*. For comparative purposes subspecies *sudetica* of the latter species was also included. The main aim was to get insight into population structure and assess the threat of interspecific hybridization to the survival of the endemic bluebell. Flow cytometry, distance-based morphometrics and molecular analysis were used to address these questions.

Three distinct groups of fluorescence intensities were revealed by flow cytometry, corresponding to DNA diploids, tetraploids and pentaploids. While diploids morphologically matched the nominate subspecies of *C. rotundifolia*, tetraploids corresponded either to *C. rotundifolia* subsp. *sudetica* or *C. bohémica*. Most populations from the Krkonoše Mts. were uniform although a sympatric growth of diploids and tetraploids was encountered in 12 populations. Only two pentaploids individuals, most likely of hybrid origin, were found, which indicated that interspecific hybridization is much less common than previously assumed. The two tetraploid taxa were distinguished by molecular markers.

A combination of flow cytometry and molecular analyses thus allowed reliable determination of all samples. Subsequent morphometric analyses identified a set of taxon-specific characters. While the value of some previously reported characters was questioned, new taxonomically important characters, including the number of leaves in the bottom part of the stem and the length of cauline leaves, were detected.

**Key words:** *Campanula bohémica*, *Campanula rotundifolia*, interspecific hybridization, polyploidy, endemism, morphological variation