Abstract

This thesis focuses on the study of the reproductive biology of nectarless orchids, which are characterized by the absence of nectar, resulting in pollinators not receiving a reward for pollen transfer. This factor can have a significant impact on the reproductive success of these plants. Furthermore, the reproductive success of nectarless orchids is influenced by other factors, such as inflorescence size, plant height, species, flowering time, population characteristics, or climatic and spatial conditions.

This study examines nectarless orchids *Anacamptis morio*, *Dactylorhiza majalis* and *Anacamptis pyramidalis* as model species and measure the above-mentioned factors on the plants.

The main findings of this study are:

(i) The number of conspecific neighbors has almost no influence on reproductive success.

(ii) There is a parabolic dependence between reproductive success and the number of flowers in the species *A. morio* and *D. majalis*, while in the species *A. pyramidalis*, this dependence is linear.

The parabolic dependence of reproductive success on the number of flowers, predicted by the theoretical model presented here, was found in only one other study. The more frequently found linear dependence between these variables, found in this study only in the species *A. pyramidalis*, may be due to the significant influence of the number of pollinators on reproductive success. A detailed analysis of the role of pollinators in future research could lead to improved understanding of the factors influencing reproductive success in nectarless orchids.

Key words: reproductive success, stem length, inflorescence length, isolation, number of neighbors, *A. morio*, *D. majalis*, *A. pyramidalis*