

Abstract

The aim of this literature survey is to focus on whole genome duplication as a mechanism of sympatric speciation in plant populations, to explain the principals of reproductive isolation between neopolyploids and their diploid ancestors and to discuss the efficiency of reproductive isolation among various plant species. The mechanism of so-called triploid block will be introduced in this thesis.

Triploids block is a form of postzygotic reproductive isolation which is realized during interploidy crosses. The two main mechanisms of triploid block are the hybrid inviability, means production of inviable hybrid seed, and reduced fertility of triploid hybrids by production of aneuploid or inviable gametes. The efficiency of triploid block varies between plant species and these differences will be also discussed. The reduction in reproductive isolation often leads to gene flow between cytotypes. Mechanisms and intensity of gene flow between cytotypes of various species will be also introduced. In the end, this thesis will be enriched with a summary of existing knowledge about cytotype variability in populations of *Butomus umbellatus*, the model species for following master's thesis.