ECOLOGICAL AND EVOLUTIONARY MECHANISMS AND CONSEQUENCES OF SUBDIOECY IN ANGIOSPERMS

Summary

Subdioecy (a form of polygamy) is a sexual system defined as population consisted of males, females and hermaphrodite or monoecious individuals. This phenomenon is thought to be a nearly final stage of dioecy. Five different evolutionary pathways that can lead to subdioecy have been considered, starting from hermaphroditism, gynodioecy, androdioecy, monoecy or distyly. Moreover the species that are already dioecious can also change to polygamy: due to environmental conditions and genetic factors. The phenomenon called "sex lability" is known to be working within plant species, which are known to have sex chromosomes. In those species sex is determined by the variety of factors : temperature, biophile elements, photoperiod, fitohormones and parasites. Such sex change towards hermaphroditism have been reported recently in Polish flora in Dark-leaved Willow *Salix myrsinifolia* and Boxelder Maple *Acer negundo*. Sex change in plants, on the other hand, can be also caused via hybridization and polyploidization in example: genus *Salix* and *Mercurialis annua* respectively. It is hypothesized that polygamy can be advantageous in plants during colonization phase, in metapopulation dynamics and other situations mostly connected to pollen shortage. High fitness of hermaphrodites can be obtained, when partners of opposite sex are lacking, mostly in cases of low population density. After population becomes stable, hermaphrodites lose their advantage and polygamy may be no longer supported.