

Abstract

Many agriculturally important fruit trees occur in the genus *Prunus*, among other also Sour cherry (*Prunus cerasus*) and Sweet cherry (*Prunus avium*). *P. cerasus* is considered to be an allopolyploid hybrid originated by hybridization of *Prunus fruticosa* ($2n = 4x = 32$) and *P. avium* ($2n = 2x = 16$). The world production of sour cherry fruit (*P. cerasus*) in 2008 is estimated to be more than 1, 15 million tones.

Prunus fruticosa is a steppe (forest steppe) relict species, severely endangered in the Czech Republic (C2). The main threat of *P. fruticosa* are both the direct and indirect human activities, causing, above all the loss of natural biotopes and hybridization with cultivated species that ran wild to the nature. *P. fruticosa* hybridizes all over its occurrence area with wild *P. cerasus* (Sour cherry; which is not primary species of the Czech Republic) and originates fertile hybrid *Prunus* × *eminens*. The results of existing studies indicate that the hybrids are more common in the central Europe and that the frequency of hybridization rises towards the west. Such phenomenon is related to human activities (cherries cultivation and landscape changes). Many authors consider hybridization to be the main cause of endangerment of this species and noticed that in many habitats the hybrids could totally replace the “pure” *P. fruticosa* species.

The study of hybridization of *P. fruticosa* with cultivated *P. cerasus* species by means of modern molecular and cytometric methods is a unique opportunity to unveil the principles of not well examined phenomenon of interspecific hybridization as a cause of endangerment of rare species.