

Abstract

Polyploidy is a significant evolutionary phenomenon in the plant kingdom. In most polyploid plants, it might lead to changes in morphology, physiology, phenology, and ecological requirements. In many cases, polyploidy enhances the tolerance of cytotypes to various stressful conditions. One example of a stressful environment is habitats disrupted by human activities, with urban trampled sites being an extreme case. This raises the question of whether there is a connection between the occurrence of polyploid cytotypes and their success on trampled habitats or not.

The aim of this work is to create a basis for the hypothesis regarding potential correlations between polyploidy and the stressful conditions of trampled habitats, based on existing knowledge. In the introductory section, I have summarized knowledge about synanthropic vegetation, with an emphasis on different types of disturbances. I have provided a more detailed characterization of trampled sites, including advantageous traits for tolerance to trampling, the impact of trampling on vegetation, and individual responses to mechanical stimuli, including trampling, at morpho-anatomical but also at the molecular-genetic level. In the second part of the work, I focused on polyploidy, describing and evaluating its influence on the morphology, physiology, and shifts in ecological requirements in polyploid cytotypes. Subsequently, I assessed a possible link between tolerance to trampling-induced mechanical stress on trampled sites and the occurrence and success of polyploid cytotypes.

Key words: urban environment, polyploidy, synanthropic vegetation, trampled habitats