Abstract

Polyploidization, as a process of chromosome set multiplication, represents one of the most significant forces that shaped the evolution of angiosperms. Therefore, understanding the mechanisms of polyploidization is also important. It most often originates through unreduced gametes (less so through somatic polyploidization). Autopolyploids are the result of polyploidization within one species, or population, while the formation of allopolyploids is preceded by interspecific hybridization.

Polyploidization also played a major role in the tribe *Triticeae* (*Poaceae*), which includes economically significant crops (wheat, rye, and barley). The taxonomy ofthe entire tribe, especially the generic concept, has been based on genomic concepts in recent decades. However, taxonomy is considerably complicated, particularly due to hybridization, or allopolyploidization. The result of allopolyploidization and even hybridization itself is a reticulate pattern, and it is not at all easy to determine the boundaries between taxa, even at the generic level. *Triticum aestivum* can be considered a model species for the study of allopolyploidy, both due to its economic significance and its origin through several rounds of hybridization events. Although allopolyploidy prevails, autopolyploidy can be encountered to a lesser extent in some clades of the tribe (some species in the genera *Hordeum*, *Agropyron*, *Dasypyrum*, and *Thinopyrum*). Polyploidy is so common in the tribe that there are entirely polyploid genera (*Elymus*, *Douglasdeweya*, and *Kengyilia*), but exclusively diploid genera (*Psathyrostachys*, *Australopyrum*) can also be found. Research on the tribe is so intensive that even the category of segmental allopolyploids is often recognized, which can be encountered, for example, in the genus *Hordeum* and *Pseudoroegneria*. This work, therefore, aimed to identify individual polyploid lines and sort out information about the classification of these lines. The study of the *Triticeae* tribe still brings unanswered questions, especially the unresolved reconstruction of phylogeny. Many experts have dealt with this problem, but a comprehensive concept has not yet been created, nor has a general agreement been found. Even though allopolyploidy is known and studied in many other groups of the *Poaceae* family (e.g., *Spartina anglica*, genera *Avenula*, *Poa*), *Triticeae* have a unique position for its study.

Key words

Triticeae, autopolyploidization, allopolyploidization, unreduced gametes, hybridization