

## Abstract

Although the European flora belongs to the best explored at the global scale, still there are several largely neglected plant groups, which may surprise by marked variation. One of these groups is *Urtica dioica* s. l., consisting of vaguely described taxa (microspecies / subspecies) with indefinite distribution. The most important source of variation in *U. dioica* s. l. is probably polyploidy (2x, 4x; x = 13). The complex comprises an ubiquitous tetraploid cytotype (*U. dioica* s. str.) and several obscurely defined relict 2x taxa. The cyto geographical analysis through Europe (770 populations / over 3 200 individuals) revealed marked distribution pattern of *U. dioica* s. l. cytotypes. We identified 106 diploid populations (13%) and 633 (82%) tetraploid populations. For the first time we detected triploid and pentaploid level (from mixed populations). Prevailing tetraploid *U. dioica* s. str. is predominantly synanthropic, whereas diploid taxa strictly occur in primary and relict habitats (primarily alluvial forests, tundra, Mediterranean mountains). The analysis of the absolute genome size of individuals from *U. dioica* clade and other closely related taxa showed different values of 2x *U. kioviensis* (19 % higher than 2x *U. d.* subsp. *subinermis*) and 2x *U. bianorii* (33% higher than 2x *U. d.* subsp. *subinermis*). The morphometric analysis (PCA and DA) of diploid (*U. d.* subsp. *subinermis* and *U. d.* subsp. *pubescens*) and ubiquitous tetraploid (*U. dioica* s. str.) revealed partial separation of *U. dioica* s. str. and *U. d.* subsp. *subinermis*, whereas *U. d.* subsp. *pubescens* tend to be clearly separated.

Keywords: *Urtica dioica* s. l., flow cytometry, morphometrics.