

Abstract

Genus *Myriophyllum* L. (watermilfoil) belongs to one of the most species-rich genera within Haloragaceae (Saxifragales). It includes three invasive species, which are of major concern – European *M. spicatum* L., North American *M. heterophyllum* MICHX. and South American *M. aquaticum* (VELL.) VERDC. All of them occur in Central Europe as well as native *M. verticillatum* L. and *M. alterniflorum* DC. lacking more significant invasive growth up to now. It is not only its invasiveness that makes genus *Myriophyllum* so fascinating. It also displays extremely high phenotypic plasticity which is accompanied by determination difficulties. Moreover, recent research indicates that *Myriophyllum* tends to hybridize producing more invasive hybrids than parental taxa. Such traits pose a formidable challenge to scientists to deal with possible future invasive growth of non-indigenous *Myriophyllum* species in Central Europe. Therefore, thorough study of factors influencing evolution success of plants should be conducted. One of the key factors seems to be polyploidy. Research into polyploidy offers a new approach to watermilfoil issues. Additionally, according to preparatory study all native Central European *Myriophyllum* species can be easily distinguished by flow cytometry. That enables to study polyploidy in an environmental context and detect a presence of mixed populations and their potential hybrids. Consequently, research into ploidy of Central European watermilfoils together with morphometric analyses will be the subject of future master's thesis.