

The flow cytometry-based DNA analysis of leaf blade cells from 18 species and one subspecies of the subfamily Chenopodioideae (Amaranthaceae) revealed three histogram peaks typical for the presence of endopolyploidy. Although endopolyploidy is the most common ploidy in plants, this phenomenon was not previously found in such a large number of wild species of Chenopodioideae. It was also so far not reported for *Suaeda*, *Dysphania* and *Oxybasis*. Neither analysis of ploidy level by light microscopy nor flow cytometry revealed endopolyploid nuclei in root meristems. Endopolyploid cells were found in leaf blades and stems in all samples. The highest level of endopolyploidy was found in *Suaeda*. We also found that endopolyploidy is usually found in diploid species of *Chenopodium*, *Dysphania*, *Oxybasis* and *Suaeda*. The endopolyploidy from hexaploid samples of *Suaeda tuvinica* and octaploid *Suaeda sibirica* was not revealed.