



HIGH VARIABILITY OF NUCLEAR DNA CONTENT IN CULTIVARS AND NATURAL POPULATIONS OF *POA PRATENSIS* L. IN RELATION TO MORPHOLOGICAL CHARACTERS

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Kentucky bluegrass is a facultative apomict which is propagated from seeds of variable genetic origins, ploidy levels and nuclear DNA contents. This study analyzes the variability of relative nuclear DNA content among cultivars and natural populations, and examines whether this variability is correlated with morphological traits. Relative nuclear DNA content (an indirect measure of chromosomal variability) was determined in 281 plants from 28 accessions (17 cultivars, 11 populations) using flow cytometry of DAPI-stained nuclei. The same plants were also measured for leaf area and stomatal length. Variation of measured relative DNA content between the studied accessions was very high (5.5-fold). Intra-accession variation was very high in six accessions, even though three of these were cultivars. Relative nuclear DNA content was correlated with stomatal length but not with leaf area. The lack of correlation with leaf area might explain why high intra-accession variability of nuclear DNA content was found in released cultivars that had passed uniformity testing during the registration procedure. We suggest that nuclear DNA content measurement should be made part of the cultivar registration process.

Key words: *Poa pratensis* L., Kentucky bluegrass, flow cytometry, intraspecific variation, relative nuclear DNA content, leaf area, stomatal length, apomixis.

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