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GENETIC DIVERSITY WITHIN AND AMONG KENTUCKY BLUEGRASS (*POA PRATENSIS* L.) WORLDWIDE ACCESSIONS

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Kentucky bluegrass, molecular markers

Kentucky bluegrass (*Poa pratensis* L.) is used extensively as a forage plant, and as turfgrass in lawns, golf courses, parks, and sports fields. It is also used for stabilizing eroded and disturbed soils and improving soil structure and fertility. *P. pratensis* is thought to have originated in Eurasia and is widely adapted and cultivated in temperate climates throughout the world. Molecular, morphological, and agronomic characterization of germplasm collections is required for assessing diversity, revealing duplication and misclassified accessions, for identifying acquisition needs. The characterization of morphological, and agronomic traits is time-consuming, environment dependent, and is not always sufficient to disclose the differences between strictly related genotypes (same phenotypes could reflect different genotypes). Molecular markers offer a powerful supplement to the morphological and agronomic data used to estimate genetic diversity. Molecular markers have many advantages compared with morphological markers, such as robustness to environmental change, nearly unlimited number and relative ease and rapidity of data collection. The aim of this study is to characterize 33 accessions of Kentucky bluegrass collected in 24 countries. Most of the accessions (25) represent wild material whereas the other 8 are either the most cultivated varieties (such as, Banff, Midnight, and Princeton) or the most used for Kentucky bluegrass breeding (e.g. Nugget). Thirty plants per accession were grown and are maintained to study both morphological traits over a period of three years and the ploidy level through evaluation of DNA content. DNA was extracted from each genotype and analyzed by SSR markers and chloroplast SNPs. Genetic diversity statistics and relationships are presented and discussed.