

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

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Kentucky bluegrass (*Poa pratensis*) is a hardy, persistent, and attractive forage and turf grass adapted to a wide range of environmental conditions in continental Europe and America. The great adaptive capacity of this species is likely associated with its variable ploidy level and versatile mode of reproduction, ranging from obligate apomixis to complete sexuality. Understanding the biogeographic distribution of ploidy variation and apomixis in *P. pratensis* will lead to insights on how apomixis has evolved and spread in this species.

We report the characterization of 33 accessions of Kentucky bluegrass, including 24 wild populations from North America, Eurasia and Africa, and 8 cultivated varieties. For each population genome size was investigated using flow cytometry on leaf tissue, and ploidy level was determined using karyology. Various DNA markers, including nuclear and chloroplast SSRs, chloroplast SNPs, and a candidate gene-derived SCAR marker, were analyzed to infer gene flow between reproductive forms, and the phylogeographic relationship between different populations.

These data are being used to understand the effects of genome size and ploidy on the expression of apomixis, and to examine the evolutionary origin(s) of this trait in different populations.