

GENETIC IMPROVEMENT OF PRAIRIE JUNEGRASS FOR USE AS A TURF

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Prairie junegrass (*Koeleria macrantha* (Ledeb.) Schultes), also known as junegrass, is a perennial, short-grass prairie species distributed throughout the Northern hemisphere. Until recently, the species has received little attention as a low-input turfgrass. Available varieties have been developed from European germplasm including 'Barleria' and 'Barkoel' by Barenburg, Inc., Holland. Little attention has been given to North American germplasm which demonstrates early green-up suggesting that native ecotypes may provide improved turfgrass traits. *Koeleria macrantha* represents a diverse natural range that provides the breeder with a broad genetic base from which to select important traits including turfgrass quality, color, density, mowability, growth habit, drought tolerance, disease resistance, and seed production. This species is known to require fewer inputs than other cool-season turfgrasses and it demonstrates tolerance to many environmental stresses found in Minnesota. The genetic improvement of native prairie junegrass into top-performing turfgrass varieties should reduce water, fertilizer, and pesticide inputs resulting in environmental benefits and reduced costs. Native grasses are excellent choices for reduced water use, conservation of native species, and aesthetic and practical qualities such as erosion control.

Material in the *Koeleria* breeding project have been developed from collections from native stands in Colorado, North Dakota, South Dakota, Minnesota, and Nebraska. Additional material was provided by the USDA for incorporation into the breeding project. Evaluations are being conducted to select superior genotypes and develop populations as low-input turfgrass cultivars. Several different trials (nursery plots, mowed space plants, and turf plots) are used to evaluate traits such as seed production, turf quality, color, density, and mowability.