

DEVELOPMENT OF DRYLAND WESTERN TURFGRASS CULTIVARS

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Breeding research and selection at Colorado State University has continued on four western grasses that could produce new turf cultivars for minimum maintenance plantings and for areas with special soil or moisture problems. The species under study are alkaligrass (Puccinellia spp.), blue grama (Bouteloua gracilis), fairway wheatgrass (Agropyron cristatum) and inland saltgrass (Distichlis spicata). Improved cultivars would give golf course superintendents more choices for their problem areas and for lower maintenance roughs, and would also be useful in minimum maintenance areas such as roadsides, airports and industrial sites.

Alkaligrass is useful in low areas where it tolerates saline, sodic and waterlogged conditions and yet appears very similar to Kentucky bluegrass. Turf testing with 1 and 2 inch mowing has identified some outstanding accessions among the materials assembled from 6 western states and 5 foreign countries. Spaced plant nurseries established in 1988 will yield seed for testing and plants for recombination and production of an advanced generation. Materials are being cooperatively tested by other researchers in three diverse environments; Nebraska, Oklahoma, and Michigan.

Blue grama is useful in dry, alkaline soils since it dominates many western grasslands. Advance generation polycross progenies were screened for deep emergence and seedling vigor in greenhouse tests and established in a field evaluation plot. In 1989 elite parents can be chosen from them in the second cycle of selection. Two turf seedings of the species were established, look good, and will receive cultural maintenance tests in 1989, including mowing at two heights.

Fairway wheatgrass has an extreme ability to survive drought and recover greenness quickly when water is available. Cycle one selected parents produced advance generation seed which was planted in a turf test of the various accessions in September 1988. Their turf performance should give data in 1989 which may be used to choose elite lines to be carried into the second selection cycle, for a synthetic variety to be widely tested.

Inland saltgrass has been reduced to a minimum level of emphasis in the program because its lack of density and high seed dormancy reduce its usefulness as a traditional seeded turfgrass. We are maintaining the accession evaluation nurseries so parents will be available should further work be indicated for this species that tolerates salty waterlogged soils with an extensive rhizome system.

We are testing cooperative materials from Nebraska and Texas of

buffalograss, in a dryland plot area at Fort Collins, and we are also cooperating with winter hardiness tests here of promising bermudagrass strains from Oklahoma.