Competitive Effects of an Exotic Cool-season Forage Grass on Two Native Warm-season Grasses. (C06-braden160040-Oral)

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Abstract:

In Iowa, warm-season (C4) pastures are often dominated by volunteer cool-season (C3) species. A greenhouse experiment was designed to further the understanding of the competitive interactions occurring between warm- and cool-season grass species. Of particular relevance to Iowa grasslands are the interspecific interactions between the warm-season species switchgrass (Panicum virgatum L., cv. Cave-in-Rock) and big bluestem (Andropogon gerardii Vitman, cv. Rountree) and the cool-season species smooth bromegrass (Bromus inermis). Under both optimal cool and warm-season temperature regimes, constant densities of the warm-season species were planted with increasing densities of smooth bromegrass. There was a substantial competitive effect of smooth bromegrass on the growth of switchgrass and big bluestem. At a 1:1 planting density, smooth bromegrass produced more than twice as much biomass than the warm-season grasses. The competitive effect of smooth bromegrass on the warm-season species was greater under cooler temperatures. Management practices that reduce smooth bromegrass biomass in spring and/or early summer are likely to suppress its dominance over the warm-season species.

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Presentation Information:

Presentation Date: Thursday, November 14, 2002
Presentation Time: 10:00 am

Keywords:
warm-season grass, competition, cool-season grass