THE INVASION OF SMOOTH BROMEGRASS AND KENTUCKY BLUEGRASS IN RESTORED GRASSLANDS AS A FUNCTION OF SPECIES DIVERSITY

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This study investigated the relationship between plant diversity, nutrient addition, and susceptibility to invasion by *Bromus inermis* (smooth bromegrass) and *Poa pratensis* (Kentucky bluegrass) in experimentally restored grassland plots. This study was conducted on 396 plots in two locations; 264 plots were located in southeastern North Dakota representing the more moist portion of the state and the northern tallgrass prairie, and 132 plots were located in west central North Dakota representing the more xeric portion of the state and the mixed-grass prairie. The 264 plots in southeastern North Dakota were planted with 100 different species mixtures and fertilized with nitrogen or phosphorus, at high or low levels. The 132 plots in west central North Dakota were planted with 70 different species mixtures and fertilized with nitrogen, phosphorus, or no fertilizer. Results from this experiment indicate that smooth brome biomass was inversely correlated with species richness at the southeastern plots. The presence of Kentucky bluegrass was unrelated to species richness at the southeastern plots. Both smooth brome and Kentucky bluegrass abundance was affected by N treatments but not the P treatments at the southeastern site. At the west central plots, the presence of smooth brome and Kentucky bluegrass was unrelated to species richness, but was affected by nutrient addition when crested wheatgrass (*Agropyron cristatum*) was used as a covariant.