

PRECISION PRAIRIE RECONSTRUCTION (PPR): A NEW OPTION FOR INCREASING FORB SPECIES RICHNESS IN OLD FIELDS AND GRASSLAND RESTORATIONS.

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Abstract: A notable problem in prairie restorations is a decline in seeded forb species richness over time. Precision Prairie Reconstruction (PPR) is a site specific, minimal disturbance, cost effective, low maintenance option for increasing seeded native forb species richness. Conventional techniques of mowing, inter-seeding, cultivating, and prescribed burning of restorations often deteriorate into species poor sites dominated by a few-culture seeded grass matrix. The grass matrix inhibits germination, establishment, and persistence of native seeded species, especially forbs which account for most of the diversity in native prairie sites. This problem becomes increasing complex when attempting to restore old fields that are exotic-grass matrices. Our study examined the effectiveness of increasing species richness in an exotic grass matrix by simulating and seeding specific patterns and quantities of small-scale disturbances with native species forbs and grasses onto a site dominated by smooth brome grass (*Bromus inermis* Leyss) and Kentucky bluegrass (*Poa pratensis* L.) in the northern Great Plains northern tallgrass prairie eco-region. Our study compared simulated small-scale disturbances with conventional restoration techniques of drill-seeding and roto-till/broadcast seeding methods. Results showed no significant difference in forb species richness at an intermediate disturbance level of simulated small-scale disturbances as compared with a more intensive disturbance employed by conventional restoration techniques. Our study tested a minimal disturbance, cost effective, low maintenance alternative method for increasing native forb species richness in an exotic grass matrix. Our applied technique (PPR) resulted in the establishment of stable forb patches visually comparable to a vegetatively diverse native prairie site.