

QUANTIFYING GRANIVORY IN A RECONSTRUCTED PRAIRIE: AFFECTS OF SEASON, SPECIES, SEED PREDATORS, SACRIFICIAL FOOD, AND THE CHEMICAL DETERRENT CAPSAICIN

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Abstract: Floral diversity of reconstructed prairies is often low, compared to remnant prairies. Overall rates of seedling establishment in overseeding studies range from 0.1% to 1% of sown pure live seed. One explanation may be the ubiquitous populations of granivorous animals eating the seed. Previous studies have indicated rodents can be responsible for the removal of up to 70-90% of seeds in a grassland. In this study we measured the amount of granivory occurring in a reconstructed prairie. We also tested how season, seed species, seed predator, sacrificial food, and chemical deterrents affect granivory in the reconstructed prairie. The study consisted of using seeds of *Silphium integrifolium* glued onto 14cm x 11cm pieces of sandpaper. During the summer of 2006, seed cards were randomly placed in 16, 5 x 5-m plots. At the whole-plot level, the plots were treated with the addition of a sacrificial food (*Helianthus annuus*). The within-plot level, the seeds were treated with the chemical capsaicin. Rate of removal of these seeds were assessed over an 18 day period. Results have indicated a significant reduction in seed predation on the seeds with the sacrificial food source. The capsaicin treatment did not significantly reduced predation. Other companion studies have shown mixed results due to several factors influencing predation such as planting time and species. From these results, we concluded granivory is an important factor in plant establishment within reconstructed prairies. We also found it is possible to reduce granivory, possibly increasing the success of a seed addition.