THE EFFECT OF BURN TIMING ON GRASSHOPPER AND GROUND BEETLE ASSEMBLAGES IN EARLY STAGE OF A RECONSTRUCTED TALLGRASS PRAIRIE

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Abstract: Prescribed burning is a common management practice in prairie reconstructions but many entomologists are concerned about the impact of burning on insect populations. The effect of fire on insects has been studied on remnant prairies and other grasslands, but little research has been done on reconstructed prairies, especially in the first few years after planting when insects are colonizing the site. My study examines how spring and fall prescribed burns affect the species composition of grasshoppers and ground beetles in a recent prairie planting. The study area, located at the Cedar River Natural Resource Area in Black Hawk County, was formerly row cropped and was seeded to 16 native grasses and forbs in fall 2008. My research site was divided into a randomized two-block plot design with 18 plots. The experiment includes a fall 2009 burn, spring 2010 burn and a no-burn control. In fall 2009 I conducted preliminary sampling of the site to assess insect activity and sampling procedures. My hypotheses are as follows: 1) Insect species richness will increase over time on all plots; 2)Insect species richness will increase more on burned plots, with plots burned in the spring having the highest richness; 3) Abundance of ground beetles will increase post-fire; 4) Abundance of grasshoppers will decrease post-fire; 5) Abundance of both groups will be similar on both control and burned plots after 1 year post-fire The plots will be sampled during the summers of 2010 and 2011, and preliminary results from 2010 sampling will be presented.