

## **THE EFFECTS OF PLANTING METHODS ON SEEDLING EMERGENCE AND ESTABLISHMENT IN A TALLGRASS PRAIRIE RECONSTRUCTION**

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*Abstract:* Many resource managers believe (anecdotally) that improving seed-to-soil contact when planting a prairie increases emergence and establishment of the natives. Recent research has shown that granivory can be a major factor for seed loss in a prairie planting (Hemsath, 2007). This study will investigate effects of various seed incorporation methods (none, culti-pack, rake, rake and culti-pack) on prairie species emergence and establishment over two growing seasons. Granivore exclosures in the research plots will be used to measure the effects of granivory on prairie seedling emergence and establishment. To measure seed incorporation, seed was coated with a fluorescent powder. Prior to seeding the research plots, a greenhouse demonstration was conducted to determine the effect of the powder on seed germination. Fluorescent powder had no significant ( $p = 0.542$ ) effects on seedling emergence. Powder coated seed was broadcast in early November 2007. Seed was incorporated into the soil by culti-packing, raking, or a combination of raking followed by culti-packing. Seed was not incorporated into the soil in control plots. A black light was used to quantify seeds incorporated into the soil immediately after seeding and one week later. One week after seeding there was a 21% seed loss in broadcast treatments with no incorporation and no losses in treatments where seed was incorporated. Prairie species emergence and establishment will be sampled in July and September of 2008 and 2009.