

THE EFFECTS OF SEEDING TIME ON THE EMERGENCE AND ESTABLISHMENT OF PRAIRIE GRASSES, SEDGES, LEGUMES, AND OTHER FORBS

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Abstract: Currently, there is little agreement on when to plant a diverse mix of tallgrass prairie. Restoration handbooks, prior research, and agencies, such as the Iowa DOT and Iowa NRCS, recommend planting diverse seed mixes of tallgrass prairie virtually any time of the year. This presents a problem as establishment of individual species or guilds may be enhanced or inhibited based upon the time of year the diverse seed mix was planted. The goal of this study is to determine which season produces the best native plant establishment for a typical diverse seed mix used for tallgrass prairie reconstructions in Iowa. This study examines the effect of seeding time on the following: emergence of selected prairie species and their associated guilds, above ground native plant growth, native plant mortality over winter, and weed growth in early establishment. The research site is a 1.5 acre site that was previously a brome-alfalfa hayfield. The research design consists of four seeding treatments; mid-winter, mid-spring, mid-summer, and mid-fall with a seed mix of 31 species. Seed was hand-broadcast and cultipacked. Initial vegetative sampling was conducted in September 2009. Native species were identified and counted, weed presence was documented. Preliminary results showed that there were significantly ($p=0.05$) more grass seedlings in mid-summer seeded plots over plots seeded in mid-winter and mid-spring. In addition, 40% of all grass seedlings detected were Canada wildrye (*Elymus canadensis*). Red clover (*Trifolium pratense*) was present in nearly all quadrat samples. Data collected in summer of 2010 will be presented.