

CAN REDUCED RATES OF HERBICIDES AND LATE FALL TIMINGS CONTROL CANADA THISTLE IN ESTABLISHING PRAIRIES AND MAINTAIN FORB COVER? Brendon J. Panke, John W. Albright, and Mark J. Renz, Assistant Research Associate, Research Program Manager, and Assistant Professor, University of Wisconsin, Madison, WI 53706.

Public interest exists in establishing mixed forb grass prairie systems, but establishment can be reduced by weed populations, especially perennial weeds like Canada thistle (*Cirsium arvense*). While management of perennial weeds is best when implemented before prairie planting, often this is not the practice and resulting weed competition can reduce establishment of many planted species. Experiments were conducted at two such prairies in Horicon and McFarland Wisconsin to evaluate native forb and grass cover after fall applications of herbicide to suppress Canada thistle. Prairies had been planted one and two years prior to treatment at the McFarland and Horicon sites respectively. Treatments included 2,4-D ( $0.532 \text{ kg ae ha}^{-1}$ ), metsulfuron ( $12.6 \text{ g ai ha}^{-1}$ ), dicamba ( $0.56 \text{ kg ae ha}^{-1}$ ), glyphosate ( $0.28 \text{ kg ae ha}^{-1}$ ), aminopyralid ( $17.4 \text{ g ae ha}^{-1}$  and  $87.0 \text{ g ae ha}^{-1}$ ), and an untreated control. Plots were treated in September, early October, late October, and the McFarland site was also treated in late November. Late October and November application timings were after two and 16 instances of temperatures at or below  $0^{\circ}\text{C}$  were observed at both locations respectively, but earlier timings did not experience any freezing temperatures. Cover of Canada thistle was estimated for each plot the spring after treatment and again in the fall at both sites. During the October monitoring event, cover of native species was also visually estimated. Data for each treatment timing combination were analyzed by ANOVA, and if significant differences were detected, means were separated with LSD at  $p < 0.05$ .

Reductions in spring Canada thistle cover were observed between treatment timing combinations at both sites with glyphosate in early October and both rates of aminopyralid in early and late October. By fall, only the  $87.0 \text{ g ae ha}^{-1}$  rate of aminopyralid at the late October timing showed any reduction at both sites. Reduced native forb cover compared to untreated areas was observed at the September timing for 2,4-D, metsulfuron, and dicamba at Horicon. The  $17.4 \text{ g ae ha}^{-1}$  rate of aminopyralid at the late October timing did show a trend of increasing native forb cover the most of all treatments when compared to untreated control at both sites. Differences in native grass cover that were consistent between the two sites were not observed. This research demonstrates that land managers have management options for native plantings that may not establish due to weed competition. Through careful selection of herbicide and application timing a land manager can both reduce the cover of unwanted species and increase the cover of native species.