

RESPONSE OF WOOLLY CUPGRASS TO TILLAGE, CORN PLANTING DATE AND HERBICIDES. James F. Lux, Damian D. Franzenburg, and Micheal D. K. Owen, Ag Research Specialists, and Professor, Agronomy Department, Iowa State University, Ames, IA 50011.

A field experiment was conducted in 2002 to evaluate the response of woolly cupgrass to tillage, corn planting date, and herbicides. Tillage, corn planting and herbicide applications were done on two dates; April 16, (D1) at or near initial woolly cupgrass emergence, and May 20, (D2) near or subsequent to maximum woolly cupgrass emergence. Acetochlor and isoxaflutole herbicides were applied preemergence each date at $\frac{1}{2}$ and 1x recommended rates following planting. Each date included an untreated control. Emerged woolly cupgrass were counted prior to each tillage, planting and herbicide application date, and at 4 and 8 weeks. Visual estimates of percent corn injury and woolly cupgrass control were made at 4 and 8 weeks. Corn yields were determined.

Woolly cupgrass emergence in the untreated control had just begun on D1 with few seedlings/m² noted. However, emergence in the untreated control on D2 was nearly 1000 fold that of D1. Emergence in the untreated control at 4 and 8 weeks was significantly higher with D1 compared to D2. Further, emergence in the untreated control at 8 weeks following D1 was nearly 4 times higher than D2. In contrast, emergence in the untreated control at 8 weeks following D2 was one-tenth that of the initial number recorded.

Emergence of woolly cupgrass in the $\frac{1}{2}$ x and 1x acetochlor and isoxaflutole treatments applied D1 was significantly less at 8 weeks compared to that in the untreated control. Further, significantly fewer emerged in acetochlor 1x, isoxaflutole $\frac{1}{2}$ and 1x treatments compared to acetochlor at $\frac{1}{2}$ x. All treatments, however, achieved poor control at 40 to 63%. Isoxaflutole at 1x was an exception and provided fair control at 76%. Emergence of woolly cupgrass in the $\frac{1}{2}$ x and 1x acetochlor and isoxaflutole treatments applied D2 was not significantly less at 8 weeks compared to that in the untreated control. In addition, there were no significant differences in emergence between any of the herbicide treatments. Treatments provided good to excellent control at 85 to 99%.

All treatments applied on D1 and D2 demonstrated excellent crop safety, except for significant injury with 1x isoxaflutole applied D2. Corn yields were significantly higher from all treatments applied D2 compared to D1, except the untreated control. Corn yields between the treatments applied D2 were not significantly different from the untreated control. Corn yields ranged from 18 to 90 bu/A with D1 treatments, and from 132 to 155 bu/A with D2 treatments.