Weed Management in Clearfield Sunflower

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Introduction

Weed control work has been conducted for several years at the Carrington Research Extension Center in cooperation with university and industry scientists to examine weed management strategies with Beyond herbicide in Clearfield sunflower. Beyond is labeled at 4 fl oz/acre with NIS + UAN for control of < 3-inch tall broadleaf weeds and < 4- to 5-leaf grass weeds on 2- to 8-leaf Clearfield sunflower. Further use details can be found on the herbicide label. This report will discuss results from the 2004 Clearfield sunflower herbicide trial conducted at the Carrington Center.

Materials and methods

The 2004 trial was conducted under reduced till (on 2003 soybean ground) with loam soil having 8.0 pH and 3.3% organic matter. Spartan was applied (at 4 and 5.3 oz/acre) October 28, 2003, following fall tillage and just prior to significant snowfall. Seeds 2000 'Viper' was planted in 30-inch rows without spring tillage on May 28 and hand-thinned to 20,000 plants/acre on June 25. Growing-season herbicide treatments included PRE Spartan (at 2 or 4 oz/acre) and Prowl H_2O (at 44 fl oz/acre) applied May 28. Adequate rainfall (>2 inches) occurred during the two days following PRE herbicide application. Glyphosate at 0.75 ae/acre also was applied across the trial on May 28. POST treatments of Beyond at 4 fl oz/acre + NIS (Preference at 0.25% v/v) or MSO (Destiny at 32 fl oz/acre) and UAN at 2.5% v/v and Poast [at 32 fl oz/acre + MSO (Destiny at 32 fl oz/acre) to provide foxtail control in Spartan plots] were applied on July 3 to V6- to V8-stage sunflower, tillering green and yellow foxtail, and 1- to 12-inch tall broadleaf weeds including common lambsquarters, hairy and Eastern black nightshade, prostrate and redroot pigweed, and annual smartweed. Late POST (LPOST) Beyond was applied on July 9 to V8-stage sunflower and larger weeds (2- to 12-inches tall).

Clearfield sunflower herbicide evaluation.

Results and discussion

With the exception of common lambsquarters (81-88%) with fall-applied Spartan, broadleaf weed control was poor (0-60%) with fall- or spring-applied Spartan and seed yield was reduced (34-45%) compared to treatments that included Beyond. POST Beyond following PRE Spartan, Prowl, or the combination provided 80-99% control of all weeds, except smartweed (74-86%). Beyond + MSO improved control of foxtail (2-10%) and smartweed (6-15%) compared to NIS with the POST- but not the LPOST-application timing. Weed control tended to be improved with the POST vs. LPOST application timing. Height reduction (0-19%) generally occurred 2- to 4-weeks after application of Beyond, but the generally adequate weed control contributed to the highest yields in the trial (1200-1450 lb/acre).