Introduction

Common groundsel has become a challenge in many no-till fields over the past few years. It is a winter annual that can emerge any time from late fall or winter through early spring. A unique characteristic of this weed is that it begins to flower soon after emergence in winter and will continue to grow and flower through cotton planting time. Similar to horseweed, the seeds of common groundsel disperse in the wind which results in rapid spread from uncontrolled areas (Figure 1). Many grower’s recent encounters have resulted in glyphosate applications followed by “horseweed-type” hormones (2,4-D or dicamba) treatments that often fail short the second time around. One common producer field observation is that frequently this weed tends to be found in conjunction with horseweed. Since horseweed continues to be one of the top weed pests that growers face in limited tillage production, one of our objectives was to evaluate the performance of standard horseweed recommendations for the control of common groundsel. In addition, very few labels cite control of this particular weed. Sharpen, paraquat and Harmony Extra XP are three products which list groundsel control on the label.

Objectives

Evaluate the effectiveness of Sharpen, paraquat and Harmony Extra XP for control of common groundsel in a preplant burndown application. Determine the effectiveness of hormone-based (horseweed type) treatments for the control of common groundsel prior to cotton planting.

Materials and Methods

Both studies were randomized complete block designs with four replications and gallons per acre (GPA). Separate treatments were applied at each of the two sites, with all treatments being made with a compressed air, high-clearance sprayer with a spray volume of 10 gallons per acre. Both trials were initiated in the spring of 2012 in order to better define current options available to growers.

Table 1. Common groundsel control with 2,4-D and dicamba

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Percentage Control</th>
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<tbody>
<tr>
<td>Untreated</td>
<td>0%</td>
</tr>
<tr>
<td>1 lb ai/a 2,4-D + 1 oz Aim (with 2,4-D)</td>
<td>100%</td>
</tr>
<tr>
<td>1 oz Sharpen + 32 oz Direx (with dicamba)</td>
<td>95%</td>
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Results and Discussion

All treatments were evaluated at 7, 14 and 30 days after treatment (DAT). However, treatments at Site 2 were also evaluated 45 DAT. Data from the 7, 14 and 30 day observations for Site 1 are listed in Figure 2. Although Sharpen or Verdict alone controlled common groundsel sufficiently (76-87%) at the 14 day observation, control diminished (to 28-33%) by 30 DAT. Tank-mixes of Sharpen with either Direx or dicamba provided similar control (25%) 30 DAT. Tank-mixes of Harmony Extra XP with either 2,4-D, dicamba or Direx controlled common groundsel 71-76% 30 DAT. When Sharpen was tank-mixed with Harmony Extra XP common groundsel control increased significantly (to 99.5%). Similar control was observed when Harmony Extra XP was tank-mixed with paraquat or when paraquat was tank-mixed with Direx, Caparol, 2,4-D or dicamba.

Summary and Conclusions

Sharpen applied alone (or when combined with dicamba) did not effectively control common groundsel. However, tank-mixing Harmony Extra XP with Sharpen did result in very effective control. Similarly, all treatments including paraquat were very effective at controlling common groundsel. This suggests that future work may be needed to explore potential paraquat rates that may be more economical but still remain effective. In addition, if choosing a tank-mix partner for Aim, these results suggest a much more effective relationship with 2,4-D as opposed to dicamba for common groundsel control.

Although Sharpen plus dicamba has been observed to be very effective at controlling common groundsel in the past, these results suggest that the weed size at application (larger than the recommended <3 inch stage) could have reduced the effectiveness of this treatment. Though many producers have found glyphosate alone to be very ineffective, these trials indicate that the inclusion of glyphosate (with either 2,4-D or dicamba) is beneficial since all treatments including glyphosate provided at least 90% control of common groundsel.