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# Time of Weed Control

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## **Abstract**

Roundup Ready (RR) crops provide growers greater flexibility in weed management due to the ability of glyphosate to control larger weeds than other herbicides. Although this is advantageous, it can lead to yield losses if the glyphosate application is delayed too long. Research was conducted to determine the role of preemergence herbicides (PRE) and postemergence glyphosate applications (POST) in protecting crop yields in Roundup Ready corn and soybean.

## **Keywords**

Agronomy

## **Disciplines**

Agricultural Science | Agriculture | Agronomy and Crop Sciences

## Time of Weed Control

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### Introduction

Roundup Ready (RR) crops provide growers greater flexibility in weed management due to the ability of glyphosate to control larger weeds than other herbicides. Although this is advantageous, it can lead to yield losses if the glyphosate application is delayed too long. Research was conducted to determine the role of preemergence herbicides (PRE) and postemergence glyphosate applications (POST) in protecting crop yields in Roundup Ready corn and soybean.

### Materials and Methods

*Corn:* Outlook (dimethenamid-P) was applied PRE at 20 oz/acre on May 1 and incorporated with a field cultivator prior to planting Pioneer 36W69 corn on May 2. Buccaneer (3 lb a.e. glyphosate/gal) was applied at 27 oz/acre on May 28 (corn V3-4 stage) for the early POST and 32 oz/acre on June 9 (corn V6-7 stage) for the late POST. Plots were 20 ft × 90 ft with four replications.

*Soybean:* Corn stalks were chisel plowed in the fall. Triflurin 4EC (trifluralin) was applied PRE at 0.75 quarts/acre and incorporated with a disk on April 19. Plots were field cultivated prior to planting Latham 2136R soybean on May 17. Buccaneer (glyphosate) was applied at 32

oz/acre on June 12 (soybean V2 stage) for the early POST and June 28 (soybean V6 stage) for the late POST. Plots were 20 ft × 150 ft with four replications.

### Results and Discussion

At harvest time all plots had similar levels of weed control. Corn plots had lower early-season weed density than the soybean plots due to differences in weed control the previous year. Corn yields were not affected by weed competition when sprayed either with Outlook PRE or Buccaneer POST at the V3-4 stage. Delaying weed control until the V6-7 stage resulted in greater than 30 bushels/acre yield loss, in spite of relatively low weed densities.

Soybean yields were reduced when a PRE herbicide was not applied, regardless of POST application timing. Weed competition was sufficient to visibly reduce the soybean height at the V6 stage. Without a PRE application, weeds reduced soybean yield 12 bushels/acre when Buccaneer was applied at the V2 stage.

Both corn and soybean yield can be affected relatively early in the season by weed competition. The risk of significant yield losses increases with high weed pressure, as seen with soybean in these trials. Preemergence herbicides reduce the risk of yield losses prior to POST applications by reducing and delaying the emergence of weeds, providing the crop a head start.

**Table 1. Effects of time of weed control on corn grain yield.**

<u>Herbicide</u>	<u>Date of application</u>	<u>Corn yield (bu/A)<sup>1</sup></u>
Outlook PRE		
+ Buccaneer Early POST	May 28 (V3-4)	
+ Buccaneer Late POST	June 9 (V6-7)	198.8a
Outlook	PRE	
+ Buccaneer Late POST	June 9 (V6-7)	192.3a
Buccaneer Early POST	May 28 (V3-4)	
+Buccaneer Late POST	June 9 (V6-7)	187.6a
<u>Buccaneer Late POST</u>	<u>June 9 (V6-7)</u>	<u>165.4b</u>

<sup>1</sup>Values with the same letter do not differ at the 0.05 level.

**Table 2. Effect of time of weed control on soybean grain yield.**

<u>Herbicide</u>	<u>Date of application</u>	<u>Soybean yield (bu/A)<sup>1</sup></u>
Triflurin	PRE	
+ Buccaneer Early POST	June 12 (V2)	
+ Buccaneer Late POST	June 28 (V6)	56.7a
Triflurin	PRE	
+ Buccaneer Late POST	June 28 (V6)	55.4a
Buccaneer Early POST	June 12(V2)	
+Buccaneer Late POST	June 28 (V6)	44.5b
<u>Buccaneer Late POST</u>	<u>June 28(V6)</u>	<u>41.0b</u>

<sup>1</sup>Values with the same letter do not differ at the 0.05 level.