

# The Effect of Timing of Glyphosate Applications on Weed Control in Roundup Ready Corn

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## Objective

Previous research has shown that corn yields and weed control decrease as weed size increases. Weeds greater than four inches in size have been shown to decrease yields. The objective of this study was to determine the effect of timing of glyphosate applications on weed control.

## Background

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Cooperator:	Tom Weiler	Soil Test:	pH = 6.1
County:	Morrow		P = 72 ppm
Nearest town:	Chesterville		K = 270 ppm
Drainage:	Systematic tiled	Fertilizer:	N=213 lbs., P <sub>2</sub> O <sub>5</sub> = 45 lbs., and K <sub>2</sub> O = 90 lbs.
Soil Type:	Sloan, silty clay loam	Herbicides:	See Table
Tillage:	Conventional	Planting Date:	May 6, 2004
Previous Crop:	Soybeans	Planting Rate:	30,200 seeds/A
Variety:	Vigoro V-51R36	Row Width:	30-inch
		Harvest Date:	October 21

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## Method

The study area had moderate to high annual grass pressure, mostly giant foxtail and barnyardgrass, and light to heavy (variable) giant ragweed pressure. The study was designed using four replications in a randomized complete block. Plots were 10-feet wide by 40-feet long. Plots were sprayed using a carbon dioxide pressurized hand-held sprayer. Roundup WeatherMax was applied at various rates and application timings. Plots were sprayed using 20 gallons/A at 30 psi. Weed control was evaluated on June 30, 2004 based upon a scale of 0 to 100 percent with zero indicating no weed control and 100 percent indicating perfect weed control. All ratings were compared to the untreated check.

## Results

### Effect of Glyphosate Application Timings on Weed Control.

<u>Treatment</u>	<u>Date of Application</u>	<u>Rate of Herbicide</u>	<u>Size of Annual Grass</u>	<u>Weed Control (%)<sup>a</sup></u>	
				<u>Annual Grass</u>	<u>Giant Ragweed</u>
Bicep II Magnum	5/14	2.6 qt./A	PRE	99 a	98 a
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Bicep II Magnum	5/14	1.3 qt./A	PRE		
Roundup WeatherMax	6/8	22 oz./A	4 inch	100 a	99 a
AMS		17 lb./100 gal.			
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Roundup WeatherMax	5/27	16 oz./A	4 inch	96 b	88 b
AMS		17 lb./100 gal.			
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Roundup WeatherMax	5/27	22 oz./A	4 inch	100 a	99 a
AMS		17 lb./100 gal.			
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Roundup WeatherMax	6/8	32 oz./A	8 inch	99 a	97 a
AMS		17 lb./100 gal.			
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Roundup WeatherMax	6/17	32 oz./A	12 inch	99 a	100 a
AMS		17 lb./100 gal.			
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Roundup WeatherMax	5/27	16 oz./A	4 inch		
AMS		17 lb./100 gal.		100 a	100 a
Roundup WeatherMax	6/17	16 oz./A	2 inch		
AMS		17 lb./100 gal.			
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			LSD (0.05) =	2.5	7.1
			CV% =	1.9	5.7

<sup>a</sup> Treatment means followed by the same letter are not significantly different.

## **Summary**

Based upon the weed species and pressure in this study this year, there was no difference in weed control between treatments, other than the 16 oz./A rate of WeatherMax applied to 4 inch annual grasses. Apparently the glyphosate rate was too low for the weeds present at the time of application compared to the 22 oz./A rate applied at the same time. The corn yields were not taken in this study due to water damage. Applying glyphosate at the correct rate and time is important for both weed control and maximum corn yield. When weeds become greater than 4 inches in height, university studies have shown a decrease in corn yield is likely due to competition with weeds.

## **Acknowledgement**

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