



# Volunteer Glyphosate-Resistant Corn Control in Roundup Ready Soybeans.

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## Introduction

Adoption of glyphosate-resistant corn among Indiana growers is preceding at a rapid rate. Since 60 to 80 percent of soybeans are grown under no-till conditions, volunteer glyphosate-resistant corn is a common weed problem in fields where corn and soybeans are grown in rotation. There are several postemergence herbicides available for soybeans that have shown good control of volunteer glyphosate-resistant corn; however more information is needed on the appropriate application timing and the influence of imazethapyr herbicide on the efficacy of postemergence grass herbicides.

## Objective

To evaluate various herbicides and application timings for control of volunteer glyphosate-resistant corn in glyphosate-resistant (Roundup Ready) soybeans.

## Materials & Methods

### Planting

Glyphosate-resistant corn was spread over the trial area and lightly tilled in with a field cultivator. Glyphosate-resistant soybeans were then planted in 76 cm rows. Both varieties are glyphosate-resistant. Field Trials were conducted at TPAC in West Central Indiana and SEPAC in Southeastern Indiana.

### Application Timing

Herbicides were applied when volunteer corn was 25- to 38- cm or 56- to 66- cm tall. Soybeans were V3 – V4 or R1 stage. All treatments contained a non-ionic surfactant at a 25% ratio, Ammonium Sulfate at 17 lbs per 100 gallons and glyphosate.

### Single Treatment Rates

fluzifop	.094 lb ai/a or .043 kg ai/ha	imazethapyr	.81 lb ai/a .367 kg ai/ha
clethodim	.094 lb ai/a or .043 kg ai/ha	imazamox	.039 lb ai/a .0177 kg ai/ha
quizalofop	.0413 lb ai/a or .0187 kg ai/ha		

### Data Collection Analysis

Visual control ratings were collected at 56 days after treatment.



Figure 1. clethodim



Figure 2. fluzifop



Figure 3. quizalofop



Figure 4. imazamox

## Throckmorton Purdue Ag Center

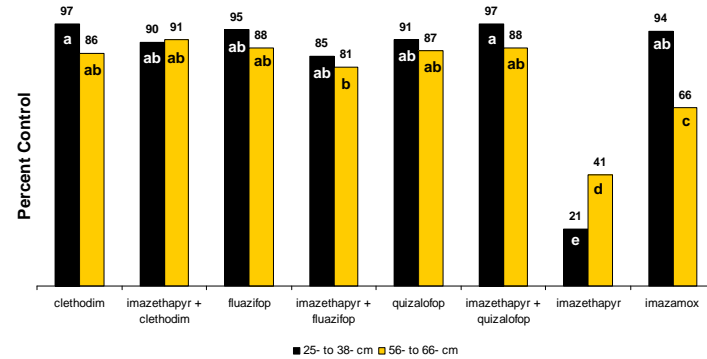


Figure 5. Volunteer glyphosate-resistant corn control 56 days after application at TPAC (West Central Indiana).

## Southeast Purdue Ag Center

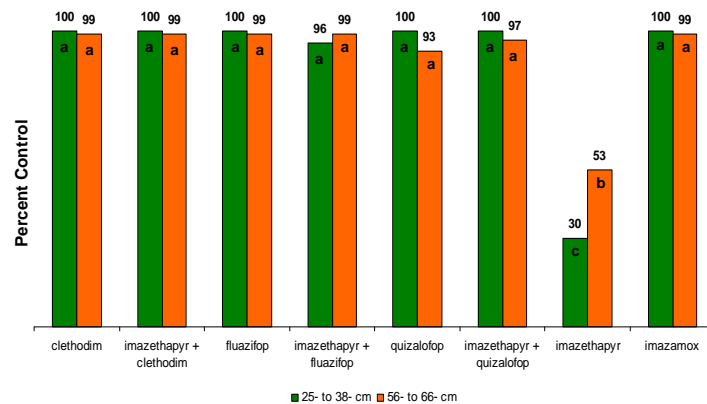


Figure 6. Volunteer glyphosate-resistant corn control 56 days after application at SEPAC (Southeast Indiana).

## Conclusion

Clethodim, fluzifop and quizalofop provided 90 to 100 percent control when applied to 25- to 38- cm volunteer corn. Clethodim, fluzifop and quizalofop provided 86 to 99 percent control to 56- to 66- cm volunteer corn. The addition of imazethapyr to clethodim, fluzifop and quizalofop did not impact control of volunteer corn. Imazamox provided 94 to 100 percent control when applied to 25- to 38 cm volunteer corn. Control by itself was less at TPAC which experienced drier weather near the application date.

## Acknowledgement

Thank you to the Purdue Integrated Weed Management team. Photos were taken by Janelle Donahue.