

# Preplant Burndown and In-Season Sharpen Use in Cotton

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## Introduction

Sharpen (saflufenacil) is currently registered as a preplant burndown treatment prior to cotton planting and during the fallow period following harvest. Previous studies have shown Sharpen can effectively control kochia, Russian thistle and horseweed when applied as a preplant burndown (PPBD) and pigweed, morningglory, and volunteer cotton when post-directed (PDIR). There are concerns that Sharpen injury to cotton can occur when organophosphate or carbamate insecticides are applied in-furrow at planting. Studies were conducted in 2010 near Lubbock, TX to evaluate weed control and cotton response to Sharpen applied PPBD and PDIR.

## Objectives

- Evaluate Sharpen in combination with other herbicides for PPBD weed control.
- Compare Sharpen application rates and dates and combinations with in-furrow insecticides for effects on stand establishment and cotton growth.
- Determine weed efficacy and crop response to Sharpen applied PPBD and PDIR.

## Materials and Methods

Design: RCBD with 3 replications  
Plot Size: 4 rows x 30 feet  
Application Equipment: Compressed air tractor-mounted sprayer  
Spray Volume: 10 GPA

## Treatments

Preplant Burndown	product rate oz/A
Sharpen	1 - 2
Roundup Powermax	22
Clarity	8
2,4-D	8

Post-Directed	product rate oz/A
Sharpen	1 - 2
Aim	1
Gramoxone Inteon	32
Roundup Powermax	22
ET	1.5

\*Appropriate adjuvants were used with each herbicide

Sharpen – MSO + AMS



## Results

### Preplant Burndown

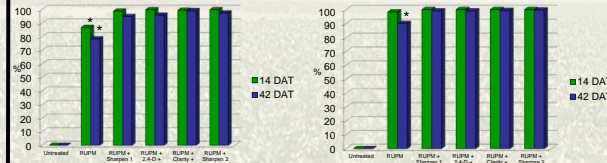
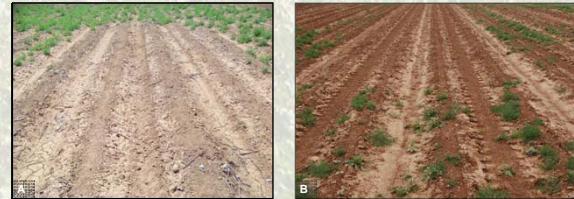


Fig. 1: Kochia control with Sharpen applied 42 DBP.

Fig. 2: Russian Thistle control with Sharpen applied 42 DBP.

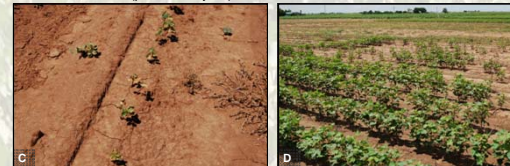


A – Kochia control with Sharpen and B – Russian thistle control with Sharpen.

### Cotton Tolerance



Fig. 3: Cotton injury as affected by Sharpen tank mixes applied 42 DBP and in-furrow insecticides (planted May 14).



C – Early-season and D – mid-season cotton injury from Sharpen applied 42 DBP at 2 oz/A.

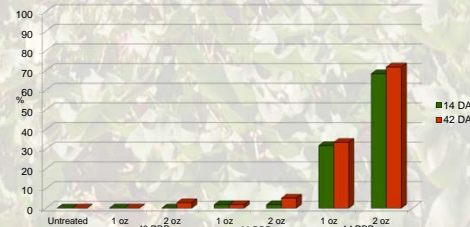


Fig. 4: Cotton injury with Sharpen applied PPBD 42, 28, or 14 DBP at Lamesa, TX (planted May 13).

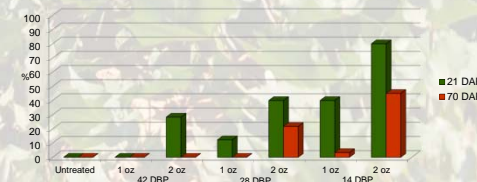


Fig. 5: Cotton injury with Sharpen applied PPBD 42, 28, or 14 DBP at Halfway, TX (planted May 11).

### Post-Directed

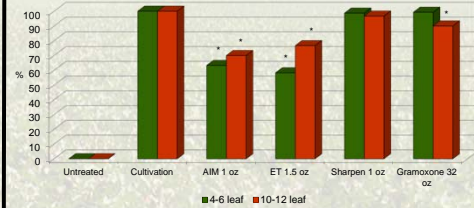


Fig. 6: Volunteer glyphosate-resistant cotton control 14 DAT applied at two growth stages.

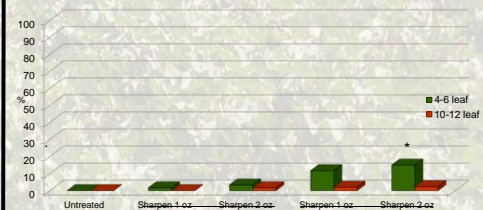


Fig. 7: Cotton injury 14 DAT as affected by Roundup PowerMax plus Sharpen applied PDIR at two growth stages.



E – Volunteer glyphosate-resistant cotton control with Sharpen PDIR.

## Summary

•Sharpen applied 42 DBP controlled kochia and Russian thistle 95-100%. The addition of 2,4-D, dicamba, or glyphosate was not needed to achieve effective control.

•No cotton injury was observed when Sharpen was applied 42 DBP at 1 oz/A. Injury (27-32%) was observed when Sharpen was applied at 2 oz/A at this timing. Sharpen applied at 1 oz/A 14 or 28 DBP injured cotton 30-38%.

•The use of in-furrow insecticides at planting did not affect cotton response to Sharpen applied 42 DBP.

•Sharpen applied PDIR controlled volunteer glyphosate-tolerant cotton 92-95% with no injury to planted cotton when applied at 1 oz/A.