Weed Management with Engenia™ in Bollgard II® XtendFlex™ Cotton

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Introduction

Engenia™, a new dicamba formulation (BAPMA) is under development by BASF for use in Bollgard II® XtendFlex™ cotton. Engenia™ applied in Bollgard II® XtendFlex™ cotton could improve control of Palmer amaranth (*Amaranthus palmeri* S. Wats), morningglory (*Ipomoea* spp.), Russian-thistle (*Salsola tragus* L.), kochia (*Kochia scoparia* L.), field bindweed (*Convolvulus arvensis* L.), woollyleaf bursage (*Ambrosia grayi* A. Nels.), and Texas blueweed (*Helianthus ciliaris* DC.) compared to glyphosate applied alone. Emerging glyphosate-resistant Palmer amaranth populations could be effectively managed. Field studies were conducted in 2015 at two locations on the Texas High Plains to evaluate glyphosate-resistant Palmer amaranth control with Engenia™ and residual herbicides.

Objectives

- Evaluate weed management in a mixed population of glyphosate tolerant and glyphosate resistant Palmer amaranth with Engenia™ in Bollgard II® XtendFlex™ cotton.
- Determine value of residual herbicides applied PPI, PRE, POST or PDIR for Palmer amaranth management.

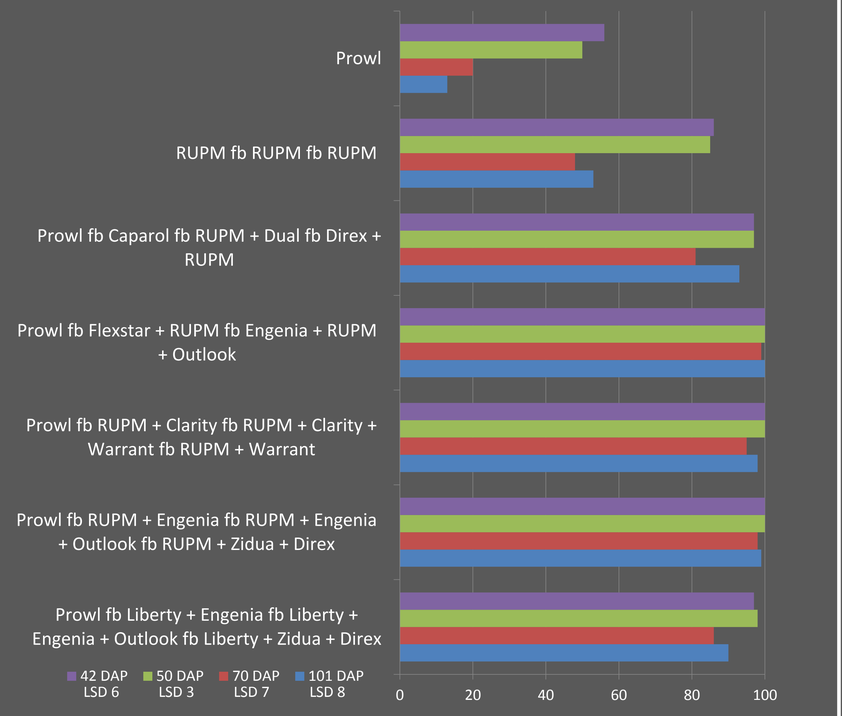
Materials and Methods

- Design: randomized complete block with three replications
- Plot size: 4 rows by 30 feet
- Application method: CO_2-pressurized backpack sprayer at 33 psi, calibrated to deliver 15 gallons per acre

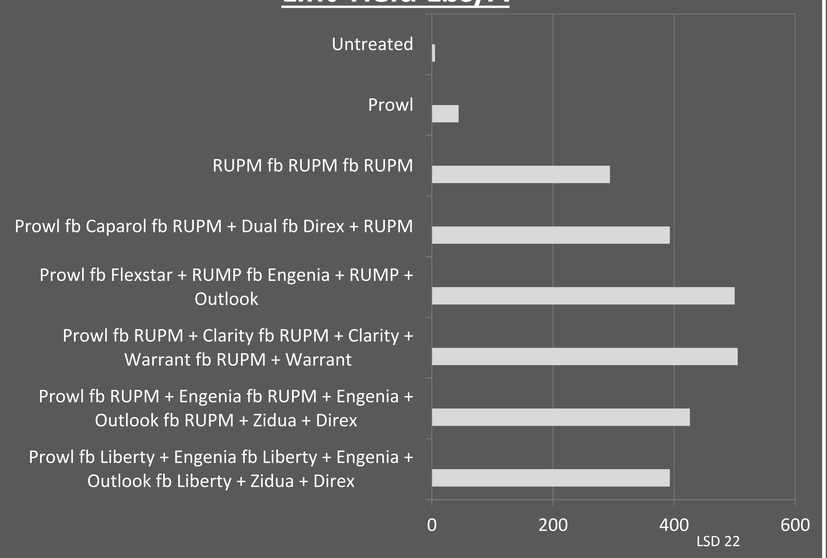
	oz/a (product)	Application Date Lubbock	Halfway
PPI			
Prowl	40	April 21	April 8
PRE			
Engenia™	12.8	May 12	May 27
Glyphosate	28		
Clarity	16		
Liberty	29		
Flexstar	7.3		
POST			
Clarity	16	June 8	June 22
Engenia™	12.8		
Outlook	16		
Liberty	29		
Warrant	32		
Dual	14		
PDIR			
Glyphosate	28	July 27	August 4
Warrant	32		
Zidua	2		
Direx	32		
Liberty	29		

Results - Lubbock

Palmer amaranth control



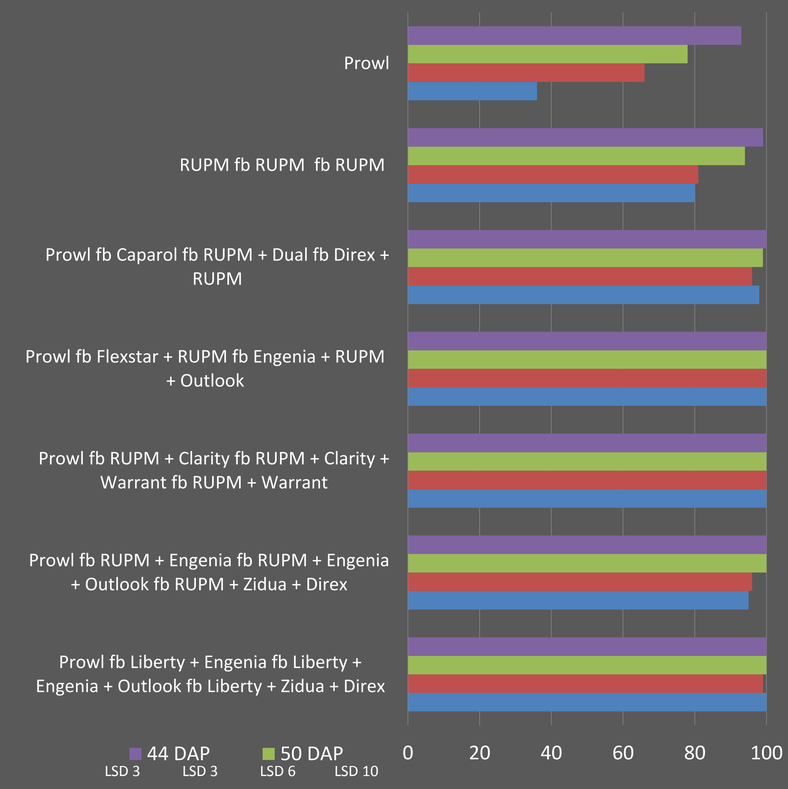
Lint Yield Lbs/A



Palmer amaranth emergence and competition with cotton.

Results - Halfway

Palmer amaranth control



Non-treated

glyphosate fb glyphosate

Prowl fb glyphosate + Engenia™ fb glyphosate + Engenia™

Summary

- Early-season Palmer amaranth control was improved with the addition of Engenia™ to glyphosate, compared to glyphosate alone.
- Mid-season Palmer amaranth control was improved with Engenia™ tank-mixed with glyphosate, compared to glyphosate alone or residual herbicides alone.
- All treatments with Engenia™ in combination with residual herbicides controlled Palmer amaranth 90-100% season-long at both locations.
- Glyphosate-only treatments did not effectively control Palmer amranth at either location.