

Addition of Dicamba to Preemergence Programs for Weed Control in Soybean

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The purpose of this study was to determine if weed control by several preemergence herbicides is improved when tank-mixed with dicamba (Xtendimax with vaporgrip technology) in dicamba-tolerant soybean systems.

Materials and Methods

The study was established using a randomized complete block design with three replications. The crop rotation was soybean following corn. The pre-plant seedbed was prepared with a field cultivator. Asgrow 21XF0 was planted at 182,400 seeds/acre in 30-in. rows May 29. Preemergence (PRE) treatments were applied June 1, delivering 15 gal/acre with 11015TTI tips at 35 psi. Weed species in the study included giant foxtail, velvetleaf, common waterhemp and common ragweed with average populations of generally < 1 plants/ft², each. Visual estimates of soybean injury and percentage weed control were made during the growing season. These observations are compared with an untreated control and made on a zero to 99 rating scale (0% = no control or injury; 99% = complete control or crop kill).

Results and Discussion

Summarized in Tables 1 and 2 are the results of the study. Fierce EZ and Valor EZ, alone, and tank-mixed with Xtendimax wVGT, caused only 7-10% injury to soybean (Table 1). No other treatments caused notable injury.

Giant foxtail control improved slightly for some herbicides with the addition of Xtendimax wVGT when observed on June 24, 23 days after application. However, the improved control did not exceed 5%, and all treatments afforded at least 90% control, with the exception of Warrant + Xtendimax wVGT applied alone (0% control). Improved control with the addition of Xtendimax wVGT continued to July 8, 37 days after application (Table 2).

Velvetleaf control with the Xtendimax wVGT tank mixture on June 24 was significantly improved only for Warrant Ultra (from 63-80% control, Table 1). Improved control for Warrant Ultra with Xtendimax wVGT was no longer significant by July 8. However, control with Warrant and Authority MTZ were improved from 47-83 and 70-91%, respectively, with Xtendimax wVGT (Table 2). Xtendimax wVGT gave only 45% velvetleaf control applied alone.

There were no significant treatment differences for common waterhemp control, which was excellent for all treatments on June 24 and July 8, except for Xtendimax wVGT applied alone (77 and 53%, respectively, Tables 1 and 2).

The addition of Xtendimax wVGT for common ragweed control was beneficial for only Authority MTZ on June 24 and July 8 (80-99% control for both dates). However, control with Warrant + Xtendimax wVGT broke from 80-73% for June 24 and July 8, respectively, while maintaining 90% control for both dates for Warrant, alone (Tables 1 and 2).

There were examples of improved preemergence weed control when including dicamba as a tank-mix partner in this research. Future research with similar treatments is needed to determine whether dicamba can play a more significant role as a tank-mix partner for preemergence weed control.



Table 1. Addition of dicamba to preemergence programs for weed control in soybean.

Treatment	Rate product/acre	Timing	Injury June 15	Setfa ^c June 24	Abuth June 24	Amata June 24	Ambel June 24
			% weed control				
Untreated			0	0	0	0	0
Warrant + Mauler	48.0 fl. oz. + 8 fl. oz.	PRE	2	99	80	99	99
Warrant	48.0 fl. oz.	PRE	0	99	70	99	90
Warrant Ultra	50.0 fl. oz.	PRE	0	98	63	99	99
Fierce EZ	6.0 fl. oz.	PRE	8	96	99	99	99
Valor EZ	2.0 fl. oz.	PRE	7	92	99	99	99
Authority MTZ DF	10.0 oz. wt	PRE	0	90	90	99	80
Warrant + Mauler + Xtendimax wVGTa + Vaporgrip Xtra Agent	48.0 fl. oz. + 8 fl. oz. + 22.0 fl. oz. + 20 fl. oz.	PRE	0	99	90	99	93
Warrant + Xtendimax wVGT + Vaporgrip Xtra Agent	48.0 fl. oz. + 22.0 fl. oz. + 20 fl. oz.	PRE	0	98	83	99	80
Warrant Ultra + Intact + Xtendimax wVGT + Vaporgrip Xtra Agent	50.0 fl. oz. + 0.5% v/vb + 22.0 fl. oz. + 20 fl. oz.	PRE	0	99	80	99	99
Fierce EZ + Xtendimax wVGT + Vaporgrip Xtra Agent + Intact	6.0 fl. oz. + 22.0 fl. oz. + 20 fl. oz. + 0.5% v/v	PRE	10	99	95	99	99
Valor EZ + Xtendimax wVGT + Vaporgrip Xtra Agent	2.0 fl. oz. + 22.0 fl. oz. + 20 fl. oz.	PRE	10	96	95	99	99
Authority MTZ DF + Xtendimax wVGT + Vaporgrip Xtra Agent	10.0 oz. wt + 22.0 fl. oz. + 20 fl. oz.	PRE	0	95	96	98	99
Xtendimax wVGT + Vaporgrip Xtra Agent	22.0 fl. oz. + 20 fl. oz.	PRE	0	0	55	77	70
LSD (P=.05)			2	3	17	3	9

^aXtendimax wVGT = XtendiMax With VaporGrip Technology.

^bVolume of product per volume tank mix.

^cSetfa = giant foxtail, Abuth = velvetleaf, Amata = common waterhemp, Ambel = common ragweed.

Acknowledgements

We thank Ken Pecinovsky and farm staff for their assistance with this study. Funding for this study was provided by Bayer CropScience.

Table 2. Addition of dicamba to preemergence programs for weed control in soybean.

Treatment	Rate product/acre	Timing	Sefta ^c	Abuth	Amata	Ambel
			July 8	July 8	July 8	July 8
			% weed control			
Untreated			0	0	0	0
Warrant + Mauler	48.0 fl. oz. + 8 fl. oz.	PRE	99	75	99	99
Warrant	48.0 fl. oz.	PRE	93	47	99	90
Warrant Ultra	50.0 fl. oz.	PRE	96	55	99	96
Fierce EZ	6.0 fl. oz.	PRE	90	99	99	99
Valor EZ	2.0 fl. oz.	PRE	85	99	99	99
Authority MTZ DF	10.0 oz. wt	PRE	80	70	91	80
Warrant + Mauler + Xtendimax wVGTa + Vaporgrip Xtra Agent	48.0 fl. oz. + 8 fl. oz. + 22.0 fl. oz. + 20 fl. oz.	PRE	96	90	99	85
Warrant + Xtendimax wVGT + Vaporgrip Xtra Agent	48.0 fl. oz. + 22.0 fl. oz. + 20 fl. oz.	PRE	96	83	96	73
Warrant Ultra + Intact + Xtendimax wVGT + Vaporgrip Xtra Agent	50.0 fl. oz. + 0.5% v/vb + 22.0 fl. oz. + 20 fl. oz.	PRE	96	67	98	99
Fierce EZ + Xtendimax wVGT + Vaporgrip Xtra Agent + Intact	6.0 fl. oz. + 22.0 fl. oz. + 20 fl. oz. + 0.5% v/v	PRE	99	95	99	99
Valor EZ + Xtendimax wVGT + Vaporgrip Xtra Agent	2.0 fl. oz. + 22.0 fl. oz. + 20 fl. oz.	PRE	90	91	98	99
Authority MTZ DF + Xtendimax wVGT + Vaporgrip Xtra Agent	10.0 oz. wt + 22.0 fl. oz. + 20 fl. oz.	PRE	83	91	93	99
Xtendimax wVGT + Vaporgrip Xtra Agent	22.0 fl. oz. + 20 fl. oz.	PRE	0	45	53	50
LSD (P=.05)			8	18	8	11

^aXtendimax wVGT = XtendiMax With VaporGrip Technology.

^bVolume of product per volume tank mix.

^cSefta = giant foxtail, Abuth = velvetleaf, Cheal= common lambquarters, Amata = common waterhemp, Ambel = common ragweed.