Engenia Applied Preemergence & Postemergence for Weed Control in Soybean.

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Introduction

The purpose of this study was to compare weed control of Engenia herbicide used at different application timings within various two-pass application programs; Engenia was applied Preemergence (PRE), early postemergence (EPOST) and postemergence (POST) for weed control in corn.

Materials and Methods

The study was established using a randomized complete block design with four replications. The crop rotation was soybean following corn. The pre-plant seedbed was prepared with two passes by a field cultivator, and soybean was planted at 189,417 seeds/acre in 30-inch rows on May 16. PRE herbicide treatments were applied on May 17 delivering 15 gal/acre with 11015TTI tips at 35 psi. EPOST, POST and LPOST applications were applied on June 5, 22 and July 5 to VC, V3 and V6 soybean, respectively, at 35 psi. TeeJet 110015TTI spray tips were used for Engenia Applications at 15 gal/acre, and TeeJet 11002XR tips were used for Liberty 280 Applications at 20 gal/acre. Weed species in the study included giant foxtail, common waterhemp and common ragweed. However, no weeds had emerged by the EPOST application. Average population densities for giant foxtail, common waterhemp and common ragweed were 750, 0—15 and 0—30 plants/plot, respectively, for the POST and LPOST applications. Common waterhemp and common ragweed densities were very low following EPOST applications, While giant foxtail densities were not affected by the EPOST applications Giant foxtail, common waterhemp and common ragweed averaged 9, 5 and 7 inches tall, respectively, at the POST application and all weeds were generally 15—17 inches tall at the LPOST application. Visual estimates of percent corn injury and weed control during the growing season were compared with an untreated control; 0 percent = no injury or control, and 99 percent = complete crop kill or control.

Results and Discussion

Summarized in Tables 1 and 2 are the results of the study. Very little rainfall occurred following the PRE applications, and there was not enough moisture to incorporate the herbicides; weeds germinating after planting were not well controlled. PRE Verdict + Engenia and Warrant Ultra provided 70 and 68 percent giant foxtail control, respectively, when observed on June 22. All other PRE treatments gave only 40—53 percent control (Table 1). Similarly, PRE treatments did not control common waterhemp and common ragweed (0—60 percent).

EPOST Engenia + Zidua SC treatments did not provide any giant foxtail control. However, common waterhemp and common ragweed control was 95—99 percent (Table 1.) POST Engenia + Outlook + Select Max and Engenia + Zidua SC + Select Max gave 74 and 76 percent giant foxtail control, respectively, on August 16 (Table 2). Other POST and LPOST treatments afforded 94—98 percent control.

PRE or EPOST Engenia + Zidua followed by POST or LPOST Liberty + Outlook and PRE Warrant Ultra + POST Xtendimax w/VGT + Roundup PowerMAX 3 + Warrant gave 84—97 percent common waterhemp control by August 16 (Table 2). PRE Zidua PRO, Verdict or Verdict + Engenia followed by POST Engenia +

Outlook + Select Max, Engenia + Zidua SC + Select Max or Liberty + Zidua SC + Select Max, respectively, gave 70 percent common waterhemp control (Table 2).

All treatments gave at least 97 percent common ragweed control by August 16.

Soybean yields for all herbicide treatments were 53—58 bu/acre with no significant differences. The untreated control yielded only 32 bu/acre.

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Table 1. Engenia Applied PRE & EPOST for Weed Control.					
		Appln	Setfa[g]	Amata	Ambel
Treatment	Rate	timing	22-Jun	22-Jun	22-Jun
	product/acre		----- % weed control ----		
Untreated			0	0	0
Engenia + Zidua SC +	12.8 fl oz + 3.25 fl oz +	PRE+	40	48	50
Aegos +	8.0 fl oz +				
Liberty 280 + Outlook +	36.0 fl oz. + 12 fl oz +	POST			
AMS[a]	112 fl oz				
Engenia + Zidua SC +	12.8 fl oz + 3.25 fl oz +	PRE+	45	28	8
Aegos +	8.0 fl oz +				
Liberty 280 + Outlook +	36.0 fl oz. + 12 fl oz +	LPOST			
AMS[a]	112 fl oz				
Engenia + Zidua SC +	12.8 fl oz + 3.25 fl oz +	EPOST+	0	95	99
Aegos +	8.0 fl oz +				
Liberty 280 + Outlook +	36.0 fl oz. + 12 fl oz +	POST			
AMS[a]	112 fl oz				
Engenia + Zidua SC +	12.8 fl oz + 3.25 fl oz +	EPOST+	0	97	99
Aegos +	8.0 fl oz +				
Liberty 280 + Outlook +	36.0 fl oz. + 12 fl oz +	LPOST			
AMS	112 fl oz				
Zidua PRO +	6.0 fl oz +	PRE+	45	33	0
Engenia + Aegos[b] +	12.8 fl oz + 8.0 fl oz +	POST			
Outlook + Select Max +	12.0 fl oz. + 12.0 fl oz +				
COC[c] + Intact[d]	1.0 %[e] + 0.5 %				
Verdict +	5.0 fl oz +	PRE+	53	20	45
Engenia + Aegos +	12.8 fl oz + 8.0 fl oz +	POST			
Zidua SC + Select Max +	3.25 fl oz. + 12.0 fl oz +				
COC + Intact	1.0 % + 0.5 %				
Verdict + Engenia + Aegos +	5.0 fl oz+12.8 fl oz+8.0 fl. oz+	PRE+	70	60	58
Liberty 280 + Zidua SC +	36.0 fl oz + 3.25 fl oz +	POST			
Select Max +	12.0 fl oz. +				
AMS + COC + Intact	112 fl oz + 0.5 % + 0.5 %				
Warrant Ultra +	50.0 fl oz +	PRE+	68	55	48
Xtendimax w/VGT[f] + Aegos+	22.0 fl oz + 8.0 fl oz +	POST			
Roundup PowerMAX 3 +	30.0 fl oz +				
Warrant +	3.0 pt +				
Intact	0.5%				
LSD (P=.05)			17	26	17

[a] AMS = liquid ammonium sulfate fertilizer from Winfield United.
[b] volatility reductioin agent
[c] COC = crop oil concentrate from Winfield United.
[d] drift reduction agent.
[e] Volume of product per volume tank mix.
[f] Xtendimax With VaporGrip Techology
[g] Setfa = giant foxtail, Amata = common waterhemp, ambel = common ragweed.

Table 2. Engenia Applied PRE & EPOST for Weed Control.						
		Appln	Setfa[g]	Amata	Ambel	Yield
Treatment	Rate	timing	16-Aug	16-Aug	16-Aug	5-Oct
	product/acre		------- % weed control ------			bu/acre
Untreated			0	0	0	32
Engenia + Zidua SC +	12.8 fl oz + 3.25 fl oz +	PRE+	98	89	98	56
Aegos +	8.0 fl oz +					
Liberty 280 + Outlook +	36.0 fl oz. + 12 fl oz +	POST				
AMS[a]	112 fl oz					
Engenia + Zidua SC +	12.8 fl oz + 3.25 fl oz +	PRE+	97	84	99	53
Aegos +	8.0 fl oz +					
Liberty 280 + Outlook +	36.0 fl oz. + 12 fl oz +	LPOST				
AMS[a]	112 fl oz					
Engenia + Zidua SC +	12.8 fl oz + 3.25 fl oz +	EPOST-	96	97	98	55
Aegos +	8.0 fl oz +					
Liberty 280 + Outlook +	36.0 fl oz. + 12 fl oz +	POST				
AMS[a]	112 fl oz					
Engenia + Zidua SC +	12.8 fl oz + 3.25 fl oz +	EPOST-	97	97	99	54
Aegos +	8.0 fl oz +					
Liberty 280 + Outlook +	36.0 fl oz. + 12 fl oz +	LPOST				
AMS	112 fl oz					
Zidua PRO +	6.0 fl oz +	PRE+	74	70	97	58
Engenia + Aegos[b] +	12.8 fl oz + 8.0 fl oz +	POST				
Outlook + Select Max +	12.0 fl oz. + 12.0 fl oz +					
COC[c] + Intact[d]	1.0 %[e] + 0.5 %					
Verdict +	5.0 fl oz +	PRE+	76	70	99	57
Engenia + Aegos +	12.8 fl oz + 8.0 fl oz +	POST				
Zidua SC + Select Max +	3.25 fl oz. + 12.0 fl oz +					
COC + Intact	1.0 % + 0.5 %					
Verdict + Engenia + Aegos +	5.0 fl oz+12.8 fl oz+8.0 fl. oz+	PRE+	94	70	98	56
Liberty 280 + Zidua SC +	36.0 fl oz + 3.25 fl oz +	POST				
Select Max +	12.0 fl oz. +					
AMS + COC + Intact	112 fl oz + 0.5 % + 0.5 %					
Warrant Ultra +	50.0 fl oz +	PRE+	98	89	99	54
Xtendimax w/VGT[f] + Aegos+	22.0 fl oz + 8.0 fl oz +	POST				
Roundup PowerMAX 3 +	30.0 fl oz +					
Warrant +	3.0 pt +					
Intact	0.5%					
LSD (P=.05)			5	13	3	7

[a] AMS = liquid ammonium sulfate fertilizer from Winfield United.

[b] volatility reductioin agent

[c] COC = crop oil concentrate from Winfield United.

[d] drift reduction agent.

[e] Volume of product per volume tank mix.

[f] Xtendimax With VaporGrip Techology

[g] Setfa = giant foxtail, Amata = common waterhemp, ambel = common ragweed.