

Fall applied soybean trial. Krausz, Ronald F. and Bryan G. Young. This study was designed to determine performance of various strategies for control of winter annual weeds in a glyphosate-resistant soybean system. The study was conducted on a Weir silt loam with 1.6% organic matter and pH 6.2 at the Belleville Research Center. Fertilizer applied was 50 and 100 lb/A of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O, respectively, to an area that had been cropped to corn in 2004. Asgrow 4403 RR soybean was planted 1.0 inch deep at 75 lb/A into a no-till seedbed on May 16, 2005. Plots consisted of four 30 inch rows, 31 ft long arranged in a randomized complete block design with 3 replications. The herbicides were broadcast applied with a CO<sub>2</sub> pressurized sprayer using 8002 flat fan tips at 40 PSI in 20 GPA water. Monthly rainfall in inches was 2.9, 0.8, 1.6, 4.8 and 3.2 in April, May, June, July and August, respectively. Rainfall in May was sparse; 0.07 inches on the 9<sup>th</sup>, 0.4 inches on the 14<sup>th</sup>, and 0.32 inches on the 20<sup>th</sup>. Weed population per 0.25m<sup>2</sup> in the nontreated plots, mid-season, was 30 fall panicum, 6 giant foxtail, 1 each of common lambsquarters and common waterhemp, and <1 common ragweed. Applications were made in the fall (FALL), 14 days before planting (14DBP), preemergence (PRE), postemergence if needed (POST-IN-1), and a second postemergence treatment if needed (POST-IN-2). Application information is listed below.

Date	Nov-17-04	May-02-05	May-17-05	May-23-05	Jun-16-05
Treatment	FALL	14DBP	PRE	POST-IN-1	POST-IN-2
Air temperature (F)	64	44	70		
Relative humidity (%)	86	54	34		
Soil moisture	ABONOR	ABONOR	NORMAL		
soybean					
leaf no.				Crack	V2
height (inch)				0	4-6
henbit					
leaf no.	10+				
height (inch)	1-2				
common chickweed					
leaf no.	10+				
height (inch)	1-2				
mouseear chickweed					
leaf no.	10+		10-20		
height (inch)	1-2		6-8		
shepherdspurse					
leaf no.	10+				
height (inch)	2-6				
smallflower buttercup					
leaf no.	4-6	10+	8-12		
height (inch)	1-2	6-12	8-14		
common lambsquarters					
leaf no.		8-10			
height (inch)		1-4			
giant foxtail					
leaf no.				5-8	5-6
height (inch)				4-6	5-6
fall panicum					
leaf no.				4-6	5-6
height (inch)				3-5	5-6
common ragweed					
leaf no.				4-8	
height (inch)				5-7	
common waterhemp					
leaf no.				8-10	5-10
height (inch)				4-6	4-8

Fall-applied glyphosate provided 99% control of common chickweed, mouseear chickweed, shepherdspurse, smallflower buttercup, and annual bluegrass by April 1. The addition of residual herbicides with glyphosate applied in the fall did not increase common lambsquarters control on May 2 compared with

glyphosate alone. Winter annual weed competition in the nontreated plots controlled common lambsquarters, 98% on May 2. Three glyphosate applications (FALL, 14 DBP, and POST-IN-2) were required to obtain 97 to 98% control of common lambsquarters, giant foxtail, fall panicum, common ragweed, and common waterhemp where no glyphosate was applied preemergence. Two glyphosate applications (PRE and POST-IN-2) provided 99% control of these weeds where glyphosate was applied preemergence with or without a residual herbicide. Simazine applied in the fall did not affect soybean grain yield. (Dept. of Plant, Soil and Agricultural Systems, Southern Illinois University, Carbondale).

Table 1. Fall applied soybean trial. (Krausz and Young)

Treatment <sup>a</sup>	Application <sup>b</sup>		Post appls required	Soybean		Control <sup>d</sup>											
				Injury <sup>c</sup>		LAMAM				STEME				CERVU			
				14 DA		DA FALL		DA 14DBP		DA FALL		DA 14DBP		DA FALL		DA 14DBP	
	Rate	Time		Yield	PRE	21	135	0	14	21	135	0	14	21	135	0	14
	(lb/A)		No.	bu/A	%	%	%	%	%	%	%	%	%	%	%	%	%
Nontreated			0	17	0	0	0	0	0	0	0	0	0	0	0	0	0
Glyphosate	0.75	FALL	1	57	0	80	99	99	99	80	99	99	99	80	99	99	99
/ glyt	/ 0.75	/ PRE															
/ glyt	/ 0.75	/ POST-IN-2															
Glyt + chlorimuron & sulfentrazone	0.75 + 0.0264 & 0.132	FALL / PRE	1	53	0	80	99	99	99	80	99	99	99	80	99	99	99
/ glyt	/ 0.75	/ POST-IN-2															
/ glyt	/ 0.75																
Glyt	0.75	FALL	1	54	0	80	99	99	99	80	99	99	99	80	99	99	99
/ glyt	/ 0.75	/ 14DBP															
/ glyt	/ 0.75	/ POST-IN-2															
Glyt + clim & suen	0.75 + 0.0264 & 0.132	FALL / 14DBP	1	59	0	80	99	99	99	80	99	99	99	80	99	99	99
/ glyt	/ 0.75	/ POST-IN-2															
/ glyt	/ 0.75																
Glyt	0.75	PRE	1	55	0												
/ glyt	/ 0.75	/ POST-IN-2															
Glyt + clim & suen	0.75 + 0.0264 & 0.132	PRE	1	59	0												
/ glyt	/ 0.75	/ POST-IN-2															
Glyt + cloransulam + flumioxazin	0.75 + 0.016 + 0.047	PRE	1	58	0												
/ glyt	/ 0.75	/ POST-IN-2															
Glyt + cloransulam + suen	0.75 + 0.031 + 0.25	PRE	1	63	0												
/ glyt	/ 0.75	/ POST-IN-2															
Glyt + simazine	0.75 + 1.0	FALL	2	54	0	50	99	99	99	50	99	99	99	50	99	99	99
/ glyt	/ 0.75	/ POST-IN-1															
/ glyt	/ 0.75	/ POST-IN-2															
LSD				10.1	0	0	0	0	0	0	0	0	0	0	0	0	0
P				0.01	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

<sup>a</sup>All glyphosate was Roundup WeatherMax. All glyphosate applications included AMS at 2.0% w/w. AMS = spray grade ammonium sulfate.

<sup>b</sup>POST-IN = postemergence if needed, as often as needed, if listed in treatment list, it was needed.

<sup>c</sup>Soybean was also evaluated at 28 and 56 days after PRE with no observable injury at any time.

<sup>d</sup>DA = Days after application. Zero days after application = At application.

Table 2. Fall applied soybean trial. (Krausz and Young)

Treatment <sup>a</sup>	Application <sup>b</sup>		Control <sup>c</sup>																
			CAPBP				RANAB				POAAN				CHEAL				
			DA FALL		DA 14DBP		DA FALL		DA 14DBP		DA FALL		DA 14DBP		DA 14DBP		DA PRE		
	Rate	Time	21	135	0	14	21	135	0	14	21	135	0	14	0	14	14	28	56
	(lb/A)		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Nontreated			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Glyphosate	0.75	FALL	80	99	99	99	80	99	99	99	90	99	99	99	98	99	99	96	99
/ glyt	/ 0.75	/ PRE																	
/ glyt	/ 0.75	/ POST-IN-2																	
Glyt + chlorimuron & sulfentrazone	0.75 + 0.0264 & 0.132	FALL	80	99	99	99	80	99	99	99	90	99	99	99	99	99	99	99	99
/ glyt	/ 0.75	/ PRE																	
/ glyt	/ 0.75	/ POST-IN-2																	
Glyt	0.75	FALL	80	99	99	99	80	99	99	99	90	99	99	99	98	99	99	99	99
/ glyt	/ 0.75	/ 14DBP																	
/ glyt	/ 0.75	/ POST-IN-2																	
Glyt + clim & suen	0.75 + 0.0264 & 0.132	FALL	80	99	99	99	80	99	99	99	90	99	99	99	99	99	99	99	99
/ glyt	/ 0.75	/ 14DBP																	
/ glyt	/ 0.75	/ POST-IN-2																	
Glyt	0.75	PRE															99	96	99
/ glyt	/ 0.75	/ POST-IN-2																	
Glyt + clim & suen	0.75 + 0.0264 & 0.132	PRE															99	99	99
/ glyt	/ 0.75	/ POST-IN-2																	
Glyt + cloransulam + flumioxazin	0.75 + 0.016 + 0.047	PRE															99	99	99
/ glyt	/ 0.75	/ POST-IN-2																	
Glyt + cloransulam + suen	0.75 + 0.031 + 0.25	PRE															99	99	99
/ glyt	/ 0.75	/ POST-IN-2																	
Glyt + simazine	0.75 + 1.0	FALL	50	99	99	99	50	99	99	99	50	99	99	99	99	99	99	99	99
/ glyt	/ 0.75	/ POST-IN-1																	
/ glyt	/ 0.75	/ POST-IN-2																	
LSD			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.7	0
P			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.01	1.0

<sup>a</sup>All glyphosate was Roundup WeatherMax. All glyphosate applications included AMS at 2.0% w/w. AMS = spray grade ammonium sulfate.

<sup>b</sup>POST-IN = postemergence if needed, as often as needed, if listed in treatment list, it was needed.

<sup>c</sup>DA = Days after application. Zero days after application = at application.

Table 3. Fall applied soybean trial. (Krausz and Young)

Treatment <sup>a</sup>	Application <sup>b</sup>		Control											
			SETFA			PANDI			AMBEL			AMATA		
			DA PRE			DA PRE			DA PRE			DA PRE		
	Rate (lb/A)	Time	14 %	28 %	56 %	14 %	28 %	56 %	14 %	28 %	56 %	14 %	28 %	56 %
Nontreated			0	0	0	0	0	0	0	0	0	0	0	0
Glyphosate	0.75	FALL	99	53	99	95	53	99	99	99	99	98	80	97
/ glyt	/ 0.75	/ PRE												
/ glyt	/ 0.75	/ POST-IN-2												
Glyt + chlorimuron & sulfentrazone	0.75 + 0.0264 & 0.132	FALL	99	92	99	99	92	99	99	99	99	92	53	97
/ glyt	/ 0.75	/ PRE												
/ glyt	/ 0.75	/ POST-IN-2												
Glyt	0.75	FALL	0	0	99	0	0	99	99	99	99	28	0	98
/ glyt	/ 0.75	/ 14DBP												
/ glyt	/ 0.75	/ POST-IN-2												
Glyt + clim & suen	0.75 + 0.0264 & 0.132	FALL	90	87	99	90	87	99	99	99	99	83	80	98
/ glyt	/ 0.75	/ 14DBP												
/ glyt	/ 0.75	/ POST-IN-2												
Glyt	0.75	PRE	99	88	99	99	88	99	99	99	99	99	88	99
/ glyt	/ 0.75	/ POST-IN-2												
Glyt + clim & suen	0.75 + 0.0264 & 0.132	PRE	99	95	99	99	95	99	99	99	99	99	99	99
/ glyt	/ 0.75	/ POST-IN-2												
Glyt + cloransulam + flumioxazin	0.75 + 0.016 + 0.047	PRE	99	87	99	99	87	99	99	99	99	99	98	99
/ glyt	/ 0.75	/ POST-IN-2												
Glyt + cloransulam + suen	0.75 + 0.031 + 0.25	PRE	99	87	99	99	87	99	99	99	99	99	99	99
/ glyt	/ 0.75	/ POST-IN-2												
Glyt + simazine	0.75 + 1.0	FALL	99	99	99	99	99	99	99	99	99	99	96	96
/ glyt	/ 0.75	/ POST-IN-1												
/ glyt	/ 0.75	/ POST-IN-2												
LSD			0	24.7	0.3	2.5	24.7	0	0	0	0	26.7	25.1	2.4
P			1.0	0.01	0.01	0.01	0.01	1.0	1.0	1.0	1.0	0.01	0.01	0.01

<sup>a</sup>All glyphosate was Roundup WeatherMax. All glyphosate applications included AMS at 2.0% w/w. AMS = spray grade ammonium sulfate.

<sup>b</sup>POST-IN = postemergence if needed, as often as needed, if listed in treatment list, it was needed.

<sup>c</sup>DA = Days after application. Zero days after application = at application.