

Timing of fall herbicide applications. Young, Bryan G., R. F. Krausz, and J. L. Matthews.

This study was designed to determine the importance of application timing for fall herbicides. The study was conducted on a Weir silt loam with 1.5% organic matter and pH 6.4 at the Belleville Research Center. Fertilizer applied was 50 and 150 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 soybean in 2002. Pioneer '94M41 RR' soybean was planted 1.0 inch deep at 75 lb/A into a no-till seedbed on June 21. Plots consisted of four rows with 15 inch row spacing, 28 ft long arranged in a randomized complete block design with 3 replications. Application timings were based on calendar dates and are listed below. 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 3.4, 5.3, 1.1, 0.9, 0.4, 2.0, 2.7, 2.8, 4.8, 8.3, 1.9 and 4.2 in September, October, November, December, January, February, March, April, May, June, July and August, respectively.

Application information is listed below.

Date	10-25-02	11-14-02	12-9-02	3-17-03
Treatment	OCT25	NOV15	DEC6	MAR15
Air temperature (F)	52	51	40	57
Relative humidity (%)	95	72	37	84
Soil moisture	normal	normal	normal	wet

little barley

leaf no.	3-4	3-5	3-5	3-5
height (inch)	2-3	3-4	3-4	2-4

henbit

leaf no.	5-10	5-10	5-10	10+
height (inch)	0-1	1-2	1-3	2-4

All herbicide treatments applied in October, November or March (except simazine alone) provided good control of little barley by 21 days after treatment (DAT) (Table 1). However, when fall herbicide applications were delayed until December 6, only paraquat had activity on little barley at 21 DAT. When evaluated at planting, little barley control was similar from treatments that included glyphosate or paraquat regardless of fall or spring application timing. However, control of little barley at planting from simazine was greatest when simazine was applied in October. Similarly, control of little barley from chlorimuron&sulfentrazone plus tribenuron was greatest when applications were made in October or March. Control of henbit at 21 DAT was usually similar between herbicide treatments applied in October and November but no initial control of henbit was observed from any treatment applied in December. Spring applications of glyphosate, simazine, and glyphosate plus simazine provided less control of henbit than corresponding fall applications. All herbicide treatments that included simazine or chlorimuron&sulfentrazone plus tribenuron provided complete control of Pennsylvania smartweed at planting regardless of application timing. However, control of common ragweed and giant foxtail at planting was highly variable with the greatest control generally observed from herbicide applications made in December or March. (Dept. of Plant, Soil and General Agriculture, Southern Illinois University, Carbondale).

Table. Timing of fall herbicide applications. (Young, Krausz and Matthews)

Treatment <sup>a</sup>	Application		Control						Control, at planting		
			HORPU			LAMAM <sup>d</sup>					
			21	21 DA	At	21	21 DA				
	Rate	Time	DAT <sup>b</sup>	MAR15	planting <sup>c</sup>	DAT	MAR15	POLPY	AMBEL	SETFA	
	(lb/A)		%	%	%	%	%	%	%	%	
Nontreated			0	0	0	0	0	0	0	0	
Glyphosate	0.75	OCT25	100	100	100	100	100	0	0	0	
Paraquat+NIS	0.312+0.25%	OCT25	100	90	90	65	83	0	0	0	
Simazine	1.0	OCT25	0	93	93	0	95	100	25	25	
Chlorimuron&sulfentrazone+tribenuron+COC	0.0264&0.132+0.0078+1.0%	OCT25	100	90	90	90	100	100	78	57	
Glyphosate+simazine	0.75+1.0	OCT25	100	100	100	97	100	100	0	0	
Glyphosate+chlorimuron&sulfentrazone+tribenuron	0.75+0.0264&0.132+0.0078	OCT25	100	100	100	100	100	100	53	87	
Glyphosate	0.75	NOV15	100	100	100	87	100	0	0	0	
Paraquat+NIS	0.312+0.25%	NOV15	100	92	92	80	85	0	0	0	
Simazine	1.0	NOV15	0	57	57	0	100	100	83	63	
Chlorimuron&sulfentrazone+tribenuron+COC	0.0264&0.132+0.0078+1.0%	NOV15	93	85	85	85	100	100	87	93	
Glyphosate+simazine	0.75+1.0	NOV15	100	100	100	80	100	100	78	30	
Glyphosate+chlorimuron&sulfentrazone+tribenuron	0.75+0.0264&0.132+0.0078	NOV15	100	100	100	93	100	100	82	89	
Glyphosate	0.75	DEC6	0	100	100	0	100	0	0	0	
Paraquat+NIS	0.312+0.25%	DEC6	90	93	93	0	82	0	0	0	
Simazine	1.0	DEC6	0	0	0	0	100	100	98	98	
Chlorimuron&sulfentrazone+tribenuron+COC	0.0264&0.132+0.0078+1.0%	DEC6	0	58	58	0	100	100	93	99	
Glyphosate+simazine	0.75+1.0	DEC6	0	100	100	0	100	100	68	47	
Glyphosate+chlorimuron&sulfentrazone+tribenuron	0.75+0.0264&0.132+0.0078	DEC6	0	100	100	0	100	100	87	87	
Glyphosate	0.75	MAR15		100	100		60	0	0	0	
Paraquat+NIS	0.312+0.25%	MAR15		87	87		87	0	0	0	
Simazine	1.0	MAR15		0	0		30	100	87	76	
Chlorimuron&sulfentrazone+tribenuron+COC	0.0264&0.132+0.0078+1.0%	MAR15		90	90		97	100	92	95	
Glyphosate+simazine	0.75+1.0	MAR15		100	100		80	100	87	92	
Glyphosate+chlorimuron&sulfentrazone+tribenuron	0.75+0.0264&0.132+0.0078	MAR15		100	100		93	100	95	93	
Nontreated			0	0	0	0	0	0	0	0	
LSD			4	24	24	14	18	0	23	35	
P			0.01	0.01	0.01	0.01	0.01	1.0	0.01	0.01	

<sup>a</sup>All glyphosate was Roundup WeatherMax from Monsanto Co.

NIS = Activator 90, a nonionic surfactant from Loveland Industries, Inc.

COC = Prime Oil crop oil concentrate, a petroleum based additive with 17% emulsifier from Agrilience, LLC.

<sup>b</sup>21 DAT = 21 days after each fall application. Ratings at 21 days after OCT25, NOV15 and DEC6 application was on Nov-14-02, Dec-6-02 and Dec-30-02, respectively.

<sup>c</sup>Ratings at planting were on May-20-03.

<sup>d</sup>At planting control ratings for LAMAM were not possible as the LAMAM plants in the nontreated were beginning to die naturally.