

Burn down evaluation in no-till soybeans. Trower, Timothy L. and Chris M. Boerboom. The purpose of this study was to investigate burn down and residual efficacy of flumioxazin tank mixtures. Flumioxazin was tank mixed at 1.0 and 1.5 oz/a with 2,4-D + glyphosate or at 1.0 oz/a with chlorimuron&thifensulfuron+ glyphosate. Standards in the study were 2,4-D+glyphosate, metribuzin+paraquat, linuron+paraquat, 2,4-D+paraquat and chlorimuron&thifensulfuron+2,4-D+quizaofop-P. Other treatments evaluated were chlorimuron&thifensulfuron+tribenuron+2,4-D+quizaofop-P, tribenuron+2, 4-D+quizaofop-P, chlorimuron&thifensulfuron+sulfentrazone+2,4-D+quizaofop-P, and thifensulfuron+quizaofop-P. Weed species evaluated were white campion (MELAL), corn speedwell (VERAR), and giant foxtail (SETFA). Soybeans were planted on May 30 at a depth of 0.5 inches in 7-inch rows. A broadcast application of glyphosate was made after the June 20 evaluation to eliminate weed escapes. The study was conducted at Rio, Wisconsin on a sandy loam soil. Trial design was a randomized complete block with 10 by 25 foot plots replicated four times. Herbicide applications were made with a CO₂ backpack sprayer calibrated at 20 gpa and equipped with XR8003 nozzles. Application data were as follows:

Date	5/14/03
Treatment	PREPLT
Spray	
gpa	20
psi	23
mph	3
Temperature (F)	
air	80
soil	
Soil moisture (surface)	dry
Wind/direction (mph)	2, SE
Relative humidity (%)	20
Cloud cover (%)	5
Soybean	
leaf no.	--
height (inch)	--
White campion	
leaf no.	8
height (inch)	2-3
Corn speedwell	
leaf no.	--
height (inch)	3-5
Giant foxtail	
leaf no.	1
height (inch)	0.25

No crop injury was observed with any treatment. 2,4-D+paraquat was the most active treatment on white campion 2 days after application, averaging 70% control. Tank mixing flumioxazin at 1.0 or 1.5 oz/a with 2,4-D+glyphosate improved white campion control compared to 2,4-D+glyphosate applied alone as the flumioxazin tank mixtures provided 40-43% control compared to 13% control for 2,4-D+glyphosate 2 days after application. Metribuzin or linuron tank mixed with paraquat provided white campion control similar to the flumioxazin tank mixtures 2 days after application. Flumioxazin tank mixed with chlorimuron&thifensulfuron+glyphosate gave similar white campion control to 2,4-D+glyphosate at 2 days after application. Metribuzin or linuron tank mixed with paraquat gave the best white campion control 19 days after application averaging 97% control. No differences in white campion control were observed among the three flumioxazin tank mixtures, 2,4-D+glyphosate, or chlorimuron&thifensulfuron+tribenuron+2,4-D+quizaofop-P with control ranging from 84% to 87% 19 days after application. All other treatments gave less than 46% white campion control 19 days after application. Chlorimuron&thifensulfuron+tribenuron+2,4-D+quizaofop-P and metribuzin+paraquat gave the best residual control of newly emerging white campion, averaging 93% and 89% control, respectively, at 38 days after application. Flumioxazin tank mixtures with 2,4-D+glyphosate exhibited a positive rate response with residual white campion

control with the 1.0 oz rate providing 36% control compared to 67% control with the 1.5 oz/a rate. White campion control with flumioxazin at 1.0 oz/a tank mixed with chlorimuron&thifensulfuron+glyphosate was equal to flumioxazin at 1.5 oz/a tank mixed with 2,4-D+glyphosate.

Paraquat tank mixed with 2,4-D, metribuzin, or linuron were the most active treatments on corn speedwell and giant foxtail 2 days after application. Tank mixing flumioxazin with 2,4-D+glyphosate improved corn speedwell and giant foxtail control compared to 2,4-D+glyphosate alone. No differences in corn speedwell or giant foxtail control were observed 2 days after application between flumioxazin tank mixed with chlorimuron&thifensulfuron+glyphosate and chlorimuron&thifensulfuron+2,4-D+quizalofop-P. All treatments provided a minimum of 94% giant foxtail or corn speedwell control 19 days after application. Flumioxazin treatments and chlorimuron&thifensulfuron+ sulfentrazone+2,4-D+quizalop-P provided good residual control of a mixed population of giant and yellow foxtail 38 days after application. (Department of Agronomy, University of Wisconsin-Madison).

Table 1. Burndown evaluation of white campion in no-till soybeans (Trower and Boerboom)

Treatment	Rate (oz/a)	Weed Control ^a				
		MELAL				MELAL ^b
		May 16	May 22	June 2	June 20	June 20
Untreated		0	0	0	0	0
2,4-D + glyphosate + AMS	8+12+40	13	54	87	89	0
Flumioxazin+2,4-D+glyphosate+AMS	1+8+12+40	43	82	84	87	36
Flumioxazin+2,4-D+glyphosate+AMS	1.5+8+12+40	40	70	87	85	67
Flumioxazin+clim&thif+ glyphosate+AMS	1+0.079&0.025+ 12+40	18	69	85	90	72
Metribuzin+paraquat+NIS	4.5+12+0.25%	50	81	97	97	89
2,4-D+paraquat+NIS	8+12+0.25%	70	60	63	45	0
Linuron+paraquat+NIS	12+12+0.25%	46	69	97	88	75
Clim&thif+2,4-D+ quizalofop+COC+AMS	0.079&0.025+8+ 0.44+1%+40	8	30	51	38	15
Clim&thif+tribenuron+ 2,4-D+quizalofop-P+COC+AMS	0.079&0.025+0.094 0.44+1%+40	8	38	85	93	93
Tribenuron+2,4-D+quizalofop-P+ COC+AMS	0.094+8+0.44+ 1%+40	10	30	45	35	5
Clim&thif+sulfentrazone+2,4-D+ quizalofop-P+COC+AMS	0.079&0.025+3+8+ 0.44+1%+40	25	41	48	25	0
Thifensulfuron+quizalofop-P+COC+AMS	0.375+0.44+1%+40	5	10	40	30	0
LSD (P=0.1)		7	7	8	12	17

^aWeed control is a visual rating of biomass reduction ranging from 0-100, where 100 is complete control.

^bResidual control of newly emerging white campion.

Table 2. Burndown evaluation of corn speedwell in no-till soybeans (Trower and Boerboom)

Treatment	Rate (oz/a)	Weed Control ^a		
		VERAR		
		May 16	May 22	June 2
Untreated		0	0	0
2,4-D + glyphosate + AMS	8+12+40	8	81	100
Flumioxazin+2,4-D+glyphosate+AMS	1+8+12+40	30	93	100
Flumioxazin+2,4-D+glyphosate+AMS	1.5+8+12+40	33	86	100
Flumioxazin+clim&thif+ glyphosate+AMS	1+0.079&0.025+ 12+40	18	83	100
Metribuzin+paraquat+NIS	4.5+12+0.25%	49	95	100
2,4-D+paraquat+NIS	8+12+0.25%	53	85	100
Linuron+paraquat+NIS	12+12+0.25%	40	89	100
Clim&thif+2,4-D+ quizalofop+COC+AMS	0.079&0.025+8+ 0.44+1%+40	15	54	100
Clim&thif+tribenuron+ 2,4-D+quizalofop-P+COC+AMS	0.079&0.025+0.094 0.44+1%+40	18	45	100
Tribenuron+2,4-D+quizalofop-P+ COC+AMS	0.094+8+0.44+ 1%+40	15	45	100
Clim&thif+sulfentrazone+2,4-D+ quizalofop-P+COC+AMS	0.079&0.025+3+8+ 0.44+1%+40	33	78	100
Thifensulfuron+quizalofop-P+COC+AMS	0.375+0.44+1%+40	0	45	100
LSD (P=0.1)		14	10	NS

^aWeed control is a visual rating of biomass reduction ranging from 0-100, where 100 is complete control.

Table 3. Burndown evaluation of giant foxtail in no-till soybeans (Trower and Boerboom)

Treatment	Rate (oz/a)	Weed Control ^a			
		SETFA		SETSS ^b	
		May 16	May 22	June 2	June 20
Untreated		0	0	0	0
2,4-D + glyphosate + AMS	8+12+40	39	99	100	0
Flumioxazin+2,4-D+glyphosate+AMS	1+8+12+40	68	100	100	69
Flumioxazin+2,4-D+glyphosate+AMS	1.5+8+12+40	75	99	100	78
Flumioxazin+clim&thif+ glyphosate+AMS	1+0.079&0.025+ 12+40	39	98	100	82
Metribuzin+paraquat+NIS	4.5+12+0.25%	83	100	100	28
2,4-D+paraquat+NIS	8+12+0.25%	100	98	100	0
Linuron+paraquat+NIS	12+12+0.25%	95	98	100	25
Clim&thif+2,4-D+ quizalofop+COC+AMS	0.079&0.025+8+ 0.44+1%+40	23	53	100	20
Clim&thif+tribenuron+ 2,4-D+quizalofop-P+COC+AMS	0.079&0.025+0.094+ 0.44+1%+40	26	55	100	40
Tribenuron+2,4-D+quizalofop-P+ COC+AMS	0.094+8+0.44+ 1%+40	5	54	94	45
Clim&thif+sulfentrazone+2,4-D+ quizalofop-P+COC+AMS	0.079&0.025+3+8+ 0.44+1%+40	55	69	99	88
Thifensulfuron+quizalofop-P+COC+AMS	0.375+0.44+1%+40	0	50	98	0
LSD (P=0.1)		20	7	NS	14

^aWeed control is a visual rating of biomass reduction ranging from 0-100, where 100 is complete control.

^bResidual control of a mixed population of giant and yellow foxtail.