

Control of little barley in winter wheat. Krausz, Ronald F. and Bryan G. Young. This study was designed to determine the effectiveness of various herbicides for control/suppression of little barley in winter wheat. The study was conducted on a Weir silt loam with 1.5% organic matter and pH 6.5 at the Belleville Research Center. Pioneer brand 'P25R78' winter wheat was planted 1.0 inch deep at 1.2 million seed/A into a no-till seedbed, on an area that had been cropped to soybean in 2001, on October 22, 2001. Total fertilizer applied was 110 lb N/A as a split application of 30 and 80 lb N/A on October 21, 2001 and February 5, 2002, respectively. Plots consisted of 16 rows with 7.5 inch row spacing, 28 ft long arranged in a randomized complete block design with 3 replications. The herbicides were broadcast applied with a CO₂ pressurized sprayer using 8002 flat fan tips at 40 PSI in 20 GPA water. Application timings were preemergence (PRE), postemergence in the fall (FALL) and postemergence following spring green-up (SPRING). Monthly rainfall in inches was 2.7, 3.9, 3.5, 3.5, 2.0, 1.2, 3.9, 4.9, 6.6, 1.7, 3.7 and 3.6 in September, October, November, December, January, February, March, April, May, June, July and August, respectively. Little barley population was 12 per 0.25 m² in the nontreated plots on May 1.

Application information is listed below.

Date	Oct-27-01	Nov-21-01	Apr-1-02
Treatment	PRE	FALL	SPRING
Air temperature (F)	40	55	46
Relative humidity (%)	50	50	96
winter wheat			
leaf no.		F1	F5
height (inch)		3-4	4-6
little barley			
leaf no.	3-4	3-4	5-6
height (inch)	1-3	1-4	4-6

No wheat injury was observed from any herbicide treatment except imazamox applied in either the fall or the spring. Since the wheat variety used in this trial was not imidazolinone tolerant, wheat injury from imazamox was expected. Preemergence treatments of glyphosate and paraquat provided 98 to 100% control of little barley at 14 and 28 days after treatment (DAT) in the fall and on April 15. Fall applications of MKH6561 plus flufenacet & metribuzin or MON 37500 controlled only 50% of little barley at 14 and 28 DAT, however, little barley control was 95 to 97% from these treatments when evaluated on April 15. The fall application of MKH6561 alone controlled less than 20% of little barley in the fall but control had increased to 72% by April 15. Spring applications of MKH6561 and MON 37500 controlled 98 to 100% of little barley by 28 DAT. Imazamox controlled less than 70% of little barley at all evaluation timings, regardless of whether the application was made in the fall or spring. Both fall and spring applications of MKH6562 and thifensulfuron & tribenuron provided no control of little barley. Wheat yield was 35 bu/A in the nontreated plots. Only plots treated with glyphosate or paraquat preemergence yielded greater than the nontreated plots. (Dept. of Plant, Soil and General Agriculture, Southern Illinois University, Carbondale).

Table. Control of little barley in winter wheat. (Krausz and Young)

Treatment ^a	Application		Wheat injury ^b			Wheat		HORPU control		
			Days after treatment		April	Test	Yield	Days after treatment		April
	Rate	Time	14	28	15	weight	bu/A	14	28	15
	(lb/A)		%	%	%	lb/bu		%	%	%
Nontreated			0	0	0	58.4	35	0	0	0
Glyphosate	0.375	PRE	0	0	0	59.4	47	98	100	100
Paraquat+NIS	0.312+0.25%	PRE	0	0	0	59.6	52	98	100	100
MKH6561+flufenacet&metribuzin+NIS	0.04+0.34&0.085+0.5%	FALL	0	0	0	59.2	42	50	50	97
MKH6562+NIS	0.027+0.5%	FALL	0	0	0	58.5	38	0	0	0
MKH6561+NIS	0.04+0.5%	FALL	0	0	0	58.8	38	0	17	72
MON 37500+NIS	0.0313+0.5%	FALL	0	8	0	58.9	42	50	50	95
Imazamox+NIS+28%N	0.039+0.25%+2.5%	FALL	50	67	100		0	50	67	33
Thifensulfuron&tribenuron+NIS	0.0157&0.0078+0.5%	FALL	0	0	0	58.9	26	0	0	0
MKH6562+NIS	0.027+0.5%	SPRING	0	0	0	59.2	39	0	0	0
MKH6561+NIS	0.04+0.5%	SPRING	0	0	0	59.2	40	77	98	98
MON 37500+NIS	0.0313+0.5%	SPRING	0	0	0	59.4	42	97	100	100
Imazamox+NIS+28%N	0.039+0.25%+2.5%	SPRING	50	50	50		0	60	68	68
Thifensulfuron&tribenuron+NIS	0.0157&0.0078+0.5%	SPRING	0	0	0	58.8	33	0	0	0
LSD			0	9	0	1	11	13	16	22
P			1.0	0.01	1.0	0.5	0.01	0.01	0.01	0.01

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

28%N = 28% urea ammonium nitrate.

^bRating dates:

14 and 28 DA PRE application on 11-10-01 and 11-24-01, respectively;

14 and 28 DAT FALL application on 12-5-01 and 12-19-02, respectively;

14 and 28 DAT SPRING application on 4-15-02 and 4-29-02, respectively.