

Wild oat control with tralkoxydim and CGA-184927 in hard red spring wheat and barley at Crookston, MN - 1999. Durgan, Beverly R., Jim Cameron and Douglas W. Miller.

The objective of the this experiment was to evaluate wild oats control with tralkoxydim and CGA-184927 alone and in combination with several broadleaf herbicides. The experiment was conducted at Crookston, MN on a Donaldson and Wheaton loam soil. Following weedy fallow, the experimental area received 100 lb/A of N and was fall plowed. In the spring the experimental area was disked and harrowed. '2375' hard red spring wheat and 'Robust' Barley were seeded on May 1 at 1.5 and 1.75 Bu/A respectively. All herbicide treatments were applied with a backpack type sprayer delivering 10 gpa at 30 psi using 80015 flat fan nozzles. The experimental design was a randomized complete block with three replications and plot size was 10 by 16 ft. Application data and environmental conditions are listed below. Crop injury and wild oats control were visually rated on June 11, July 9, and July 20. Yields were measured. All data are presented in Tables 1 and 2 for barley and wheat, respectively.

Treatment Date	June 1
Target weed or	3-4 lf wild oat
Wheat and barley stage	3 leaf
Soil Moisture	moist
Sky	clear
Wind	5 N
Air Temperature (°F)	56
Rainfall before Application	
Week 1 (inch)	0.63
Rainfall after Application	
Week 1 (inch)	0.43
Week 2 (inch)	1.06

Little injury was observed overall in the wheat plots. Tralkoxydim cause some barley injury at the early date. Tralkoxydim tank mix combinations caused less injury than tralkoxydim alone except for the bromoxynil tank mix. The combination of bromoxynil and the crop oil adjuvant cause moderate leaf burn on the barley and slight injury on the wheat. CGA-184927 caused moderate to severe injury (chlorosis and stunting) symptoms in barley at the first rating date. These injury symptoms decreased at the later rating dates. CGA-184927 tank mix combinations did not generally affect the degree of injury. The fenoxaprop treatments caused slight chlorosis in barley.

All treatments resulted in good to excellent wild oats control with the exception of the tralkoxydim / thifensulfuron & tribenuron / MCPA ester tank mix where significant antagonism of wioa control was observed. Slight antagonism of CGA-184927 by thifensulfuron & tribenuron / dicamba was also apparent. Fenoxaprop & safener treatments provided the highest overall wioa control.

Wheat and barley yields generally were significantly increased by herbicide treatment versus the weedy checks. This effect was much greater for the wheat treatments. Treatments where antagonism of wioa control was observed did not show a corresponding significant yield reduction. Relative yield reductions among treatments may be attributed to herbicide injury.

Table 1. Wild oat control with tralkoxydim and CGA-184927 in barley at Crookston, MN - 1999 (Durgan, Cameron, and Miller).

Treatment	Rate (lb ai/A)	Barley Injury			Wioa Control		Barley Yield Bu/A
		6/11	7/9	7/20	7/9	7/20	
Tralkoxydim + TF8035 COC + AMS ¹	0.18 + 0.5% + 1.5	20	10	7	91	95	55
Tralkoxydim + TF8035 COC + AMS + bromoxynil & MCPA ester ²	0.18 + 0.5% + 1.5 + 0.25 & 0.25	10	10	10	94	95	86
Tralkoxydim + TF8035 COC + AMS + bromoxynil	0.18 + 0.5% + 1.5 + 0.25	28	17	10	94	96	75
Tralkoxydim + TF8035 COC + AMS + MCPA ester	0.18 + 0.5% + 1.5 + 0.25	2	7	10	95	95	83
Tralkoxydim + TF8035 COC + AMS + 2,4-D butoxyethyl ester	0.18 + 0.5% + 1.5 + 0.25	10	10	10	90	94	92
Tralkoxydim + TF8035 COC + AMS + thifensulfuron & tribenuron ³ + MCPA ester	0.18 + 0.5% + 1.5 + 0.011 & 0.005 + 0.25	5	5	10	43	65	89
Imazamethabenz ⁴ + NIS ⁵ + COC ⁶	0.31 + 0.25% + 2.5%	2	2	0	90	95	90
Fenoxaprop & safener ⁷	0.082	18	13	0	97	99	70
CGA-184927 & safener + surf ⁸	0.05 + 0.8%	45	20	0	92	96	67
CGA-184927 & safener + bromoxynil & MCPA ester + surf	0.05 + 0.25 & 0.25 + 0.8%	43	18	0	94	96	80
CGA-184927 & safener + dicamba + surf	0.05 + 0.094 + 0.8%	48	18	10	93	96	77
CGA-184927 & safener + thifensulfuron & tribenuron + surf	0.05 + 0.011 & 0.005 + 0.8%	38	17	8	94	96	78
CGA-184927 & safener + thifensulfuron & tribenuron + dicamba + surf	0.05 + 0.011 & 0.005 + 0.0625 + 0.8%	45	20	0	92	91	81
Fenoxaprop & safener + thifensulfuron & tribenuron + NIS	0.082 + 0.011 & 0.005 + 0.25%	10	10	0	99	99	90
Weedy check		0	0	0	--	--	55
LSD (P=.05)		9	12	3	5	3	14

¹ AMS = Spray grade ammonium sulfate. Rate is pounds product per acre.

² Premix = Bronate 4E.

³ Premix = Harmony Extra 75DF.

⁴ Assert LC 2.5E.

⁵ NIS = Class Preference nonionic surfactant.

⁶ COC = Class Crop Oil Concentrate.

⁷ Puma 1E.

⁸ surf = Score.

Table 2. Wild oat control with tralkoxydim and CGA-184927 in spring wheat at Crookston, MN - 1999 (Durgan, Cameron, and Miller).

Treatment	Rate (lb ai/A)	Wheat Injury			Wioa Control		Wheat Yield Bu/A
		6/11	7/9	7/20	7/9	7/20	
Tralkoxydim + TF8035 COC + AMS ¹	0.18 + 0.5% + 1.5	0	3	0	90	94	39
Tralkoxydim + TF8035 COC + AMS + bromoxynil & MCPA ester ²	0.18 + 0.5% + 1.5 + 0.25 & 0.25	7	7	0	94	95	50
Tralkoxydim + TF8035 COC + AMS + bromoxynil	0.18 + 0.5% + 1.5 + 0.25	13	10	0	94	96	53
Tralkoxydim + TF8035 COC + AMS + MCPA ester	0.18 + 0.5% + 1.5 + 0.25	3	7	0	95	95	46
Tralkoxydim + TF8035 COC + AMS + 2,4-D butoxyethyl ester	0.18 + 0.5% + 1.5 + 0.25	3	3	0	89	92	58
Tralkoxydim + TF8035 COC + AMS + thifensulfuron & tribenuron ³ + MCPA ester	0.18 + 0.5% + 1.5 + 0.011 & 0.005 + 0.25	2	2	0	42	43	48
Imazamethabenz ⁴ + NIS ⁵ + COC ⁶	0.31 + 0.25% + 2.5%	0	0	0	89	95	58
Fenoxaprop & safener ⁷	0.082	2	3	0	97	99	40
CGA-184927 & safener + surf ⁸	0.05 + 0.8%	2	3	0	92	96	38
CGA-184927 & safener + bromoxynil & MCPA ester + surf	0.05 + 0.25 & 0.25 + 0.8%	5	3	0	94	96	56
CGA-184927 & safener + dicamba + surf	0.05 + 0.094 + 0.8%	2	3	0	93	96	57
CGA-184927 & safener + thifensulfuron & tribenuron + surf	0.05 + 0.011 & 0.005 + 0.8%	3	7	0	94	96	55
CGA-184927 & safener + thifensulfuron & tribenuron + dicamba + surf	0.05 + 0.011 & 0.005 + 0.0625 + 0.8%	3	0	0	92	89	57
Fenoxaprop & safener + thifensulfuron & tribenuron + NIS	0.082 + 0.011 & 0.005 + 0.25%	0	0	0	98	99	55
Weedy check		0	0	0	--	--	17
LSD (P=.05)		ns	ns	ns	5	5	11

¹ AMS = Spray grade ammonium sulfate. Rate is pounds product per acre.

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