

Wild oats control in hard red spring wheat and barley with split applications at Crookston, MN - 1999. Durgan, Beverly R., Jim Cameron and Douglas W. Miller. This experiment was designed to evaluate wild oat control with three herbicides applied at a labeled rate as a single, two-way split, and a three-way split application. 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. For each herbicide, an application was made at a labeled rate and growth stage; two applications at one half rate at each application with the first application at the 1 to 1.5 leaf and the second application 7 days later; and three applications at one third rate at each application with the first application at the 1 to 1.5 leaf, the second application 7 days later, and the third application 14 days after the first application. 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	May 25	May 29	June 1	June 7
Target weed or crop stage	1-1.5 leaf Wioa	2-3 leaf Wioa	3-4 leaf Wioa 7 day sequential	14 day sequential
Rainfall before Application				
Week 1 (inch)	0.05	0.05	0.63	0.40
Rainfall after Application				
Week 1 (inch)	0.63	0.64	0.43	1.09
Week 2 (inch)	0.43	1.16	1.06	0.08

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

Treatment	Rate (lb ai/A)	Growth Stage	Injury			Wioa Control		Yield Bu/A
			6/11	7/9	7/20	7/9	7/20	
			----- % -----					
Imazamethabenz ¹ + NIS ² + COC ³	0.31 + 0.25% + 0.5%	2-3 leaf	0	0	0	93	98	100
Imazamethabenz + NIS + COC	0.155 + 0.25% + 0.5%	1-1.5 leaf						
Imazamethabenz + NIS + COC	0.155 + 0.25% + 0.5%	7 day sequential	0	0	0	95	98	94
Imazamethabenz + NIS + COC	0.103 + 0.25% + 0.5%	1-1.5 leaf						
Imazamethabenz + NIS + COC	0.103 + 0.25% + 0.5%	7 day sequential						
Imazamethabenz + NIS + COC	0.103 + 0.25% + 0.5%	14 day sequential	0	0	0	99	97	98
Fenoxaprop & safener ⁴	0.104	3-4 leaf	22	3	0	95	96	91
Fenoxaprop & safener	0.052	1-1.5 leaf						
Fenoxaprop & safener	0.052	7 day sequential	7	0	0	96	97	87
Fenoxaprop & safener	0.0346	1-1.5 leaf						
Fenoxaprop & safener	0.0346	7 day sequential						
Fenoxaprop & safener	0.0346	14 day sequential	17	3	0	96	98	84
Tralkoxydim + TF8035 COC + AMS ⁵	0.18 + 0.5% + 1.5%	3-4 leaf	27	7	0	95	98	73
Tralkoxydim + TF8035 COC + AMS	0.09 + 0.5% + 1.5%	1-1.5 leaf						
Tralkoxydim + TF8035 COC + AMS	0.09 + 0.5% + 1.5%	7 day sequential	30	7	0	93	97	85
Tralkoxydim + TF8035 COC + AMS	0.06 + 0.5% + 1.5%	1-1.5 leaf						
Tralkoxydim + TF8035 COC + AMS	0.06 + 0.5% + 1.5%	7 day sequential						
Tralkoxydim + TF8035 COC + AMS	0.06 + 0.5% + 1.5%	14 day sequential	33	7	3	97	97	77
Weedy check			0	0	0	--	--	66
LSD P=.05			10	ns	ns	3	ns	15

¹ Assert LC 2.5E.

² NIS = Class Preference nonionic surfactant.

³ COC = Class Crop Oil Concentrate.

⁴ HOE 1170

⁵ AMS = Spray grade ammonium sulfate. Rate is pounds product per acre.

Table 2. Wild oat control in hard red spring wheat with split applications at Crookston, MN - 1999 (Durgan, Cameron, and Miller).

Treatment	Rate (lb ai/A)	Growth Stage	Injury			Wioa Control		Yield Bu/A
			6/11	7/9	7/20	7/9	7/20	
			----- % -----					
Imazamethabenz ¹ + NIS ² + COC ³	0.31 + 0.25% + 0.5%	2-3 leaf	0	0	0	93	98	57
Imazamethabenz + NIS + COC	0.155 + 0.25% + 0.5%	1-1.5 leaf						
Imazamethabenz + NIS + COC	0.155 + 0.25% + 0.5%	7 day sequential	0	0	0	95	98	58
Imazamethabenz + NIS + COC	0.103 + 0.25% + 0.5%	1-1.5 leaf						
Imazamethabenz + NIS + COC	0.103 + 0.25% + 0.5%	7 day sequential						
Imazamethabenz + NIS + COC	0.103 + 0.25% + 0.5%	14 day sequential	0	0	0	99	97	54
Fenoxaprop & safener ⁴	0.104	3-4 leaf	0	0	0	95	96	58
Fenoxaprop & safener	0.052	1-1.5 leaf						
Fenoxaprop & safener	0.052	7 day sequential	0	0	0	96	97	58
Fenoxaprop & safener	0.0346	1-1.5 leaf						
Fenoxaprop & safener	0.0346	7 day sequential						
Fenoxaprop & safener	0.0346	14 day sequential	2	0	0	96	98	61
Tralkoxydim + TF8035 COC + AMS ⁵	0.18 + 0.5% + 1.5%	3-4 leaf	7	3	0	95	98	52
Tralkoxydim + TF8035 COC + AMS	0.09 + 0.5% + 1.5%	1-1.5 leaf						
Tralkoxydim + TF8035 COC + AMS	0.09 + 0.5% + 1.5%	7 day sequential	3	3	0	93	97	56
Tralkoxydim + TF8035 COC + AMS	0.06 + 0.5% + 1.5%	1-1.5 leaf						
Tralkoxydim + TF8035 COC + AMS	0.06 + 0.5% + 1.5%	7 day sequential						
Tralkoxydim + TF8035 COC + AMS	0.06 + 0.5% + 1.5%	14 day sequential	5	3	0	97	97	60
Weedy check			0	0	0	--	--	23
LSD P=.05			ns	ns	ns	3	2	6

¹ Assert LC 2.5E.

² NIS = Class Preference nonionic surfactant.

³ COC = Class Crop Oil Concentrate.

⁴ HOE 1170 (Puma).

⁵ AMS = Spray grade ammonium sulfate. Rate is pounds product per acre.