Wild oats control in hard red spring wheat and barley with split applications at Crookston, MN - 1998. Durgan, Beverly R. and Jim Cameron. 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 'Stander' Barley were seeded on April 28 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 29 and July 9. Wheat yields were measured. All data are presented in the table below.

Treatment Date	May 14	May 22	May 29
Target weed or crop stage	---- 1-1.5 leaf Wioa	2-3 leaf Wioa 7 day sequential	3-4 leaf Wioa 14 day sequential
Soil Moisture	moist	moist at 1"	dry
Wind	0-3 E	0-3 E	10 N
Air Temperature (°F)	65	70	46
Rainfall before Application			
Week 1 (inch)	1.84	2.96	0.00
Rainfall after Application			
Week 1 (inch)	3.08	0.00	0.29
Week 2 (inch)	0.00	0.29	0.93
Wioa density (#/ft^2)	>300		

No injury was observed in barley or wheat.

Wild oats control and small grain yields did not differ when HOE 1170 was applied as split applications versus a single application.

Wild oats control with imazamethabenz was significantly greater when applied as a two- or three-way sequential application compared to the single application at the 2-3 leaf stage. Yields of both barley and wheat reflected this difference, however yields did not differ significantly.

Wild oats control with tralkoxydim increased when applied as a two- or three-way sequential application compared to the single application at the 3-4 leaf stage, however the difference was only significant in wheat at the second rating date. Yields of barley and wheat were lower for the single application versus the split applications.

Table. Wild oat control in hard red spring wheat and barley with split applications at Crookston, MN - 1998 (Durgan and Cameron).

			Barley			Wheat		
			Wioa Control			Wioa Control		
Treatment	Rate	Growth Stage	6/29	7/9	Yield	6/29	7/9	Yield
	lb ai/A)		------ % -------		Bu/A	------ % -------		Bu/A
Imazamethabenz[1] + NIS[2] + COC[3]	0.31 + 0.25% + 0.5%	2-3 leaf	82	68	77	77	67	53
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	94	87	81	93	86	64
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	98	87	103	96	85	65
Fenoxaprop & safener[4]	0.104	3-4 leaf	99	100	72	99	99	52
Fenoxaprop & safener	0.052	1-1.5 leaf						
Fenoxaprop & safener	0.052	7 day sequential	100	100	90	100	99	60
Fenoxaprop & safener	0.0346	1-1.5 leaf						
Fenoxaprop & safener	0.0346	7 day sequential						
Fenoxaprop & safener	0.0346	14 day sequential	100	98	90	100	95	54
Tralkoxydim + TF8035 COC + AMS[5]	0.18 + 0.5% + 1.5%	3-4 leaf	92	86	66	90	81	31
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	99	93	92	98	92	64
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	100	98	84	98	98	54
Weedy check			--	--	54	--	--	18
LSD P=.05			8	13	23	10	10	17

[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.