

Wild oat control with Puma, Discover, Assert, and Achieve alone and with broadleaf herbicides at Crookston, MN - 2001. Durgan, Beverly R., Jim Cameron, Douglas W. Miller and Krishona Martinson. The objective of the this experiment was to evaluate wild oat control with Puma (fenoxaprop & safener), Assert (imazamethabenz), and Discover (clodinafop & safener)) alone and in combination with several broadleaf herbicides. A second objective was to compare two formulations of Achieve (tralkoxydim). 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 14 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. Wheat yields were measured. Barley yields were not measured due to heavy rainfall and subsequent stand damage. All data are presented in Tables 1 and 2 for barley and wheat, respectively.

Treatment Date	June 12
Target weed or crop stage	3-4 leaf Wioa
Barley Height (inch)	12
Wheat Height (inch)	10
Wild Oat	
Height (inch)	12
Leaf Stage	4
Air Temperature (degrees F.)	50
Relative Humidity (%)	56
Wind (mph)	calm
Cloud Cover	cloudy
Rainfall before Application	
Week 1 (inch)	0.28
Rainfall after Application	
Week 1 (inch)	0.73
Week 2 (inch)	0.13

Table 1. Wild oat control with Puma, Discover, Assert, and Achieve alone and with broadleaf herbicides in barley at Crookston, MN - 2001 (Durgan, Cameron, Miller, and Martinson).

Treatment	Rate (lb ai/A)	Barley Injury			Wioa Control	
		6/21	7/9	7/22	7/9	7/22
		----- % -----				
Fenoxaprop & safener	0.082	20	0	0	99	96
Fenoxaprop & safener + bromoxynil & MCPA ester ¹	0.082 + 0.25 & 0.25	10	0	0	99	97
Fenoxaprop & safener + bromoxynil & MCPA ester ²	0.082 + 0.25 & 0.25	20	0	0	99	98
Fenoxaprop & safener + dicamba ³	0.082 + 0.125	12	3	0	99	97
Fenoxaprop & safener + dicamba ⁴	0.082 + 0.131	28	37	37	96	92
Fenoxaprop & safener + thifensulfuron + fluroxypyr + MCPA ester + NIS ⁵	0.082 + 0.007 + 0.124 + 0.375 + 0.25%	15	0	0	99	97
Fenoxaprop & safener + thifensulfuron + fluroxypyr + NIS	0.082 + 0.014 + 0.062 + 0.25%	17	0	0	99	98
Fenoxaprop & safener + thifensulfuron + carfentrazone + MCPA ester	0.082 + 0.014 + 0.008 + 0.25	10	0	0	99	97
Fenoxaprop & safener + carfentrazone + MCPA ester	0.082 + 0.008 + 0.25	5	0	0	99	98
Clodinafop & safener + surf ⁶	0.05 + 0.8%	35	37	33	99	95
Clodinafop & safener + bromoxynil & MCPA ester ¹ + surf	0.05 + 0.25 & 0.25 + 0.8%	37	33	30	99	97
Clodinafop & safener + dicamba ³ + surf	0.05 + 0.125 + 0.8%	40	42	38	82	77
Clodinafop & safener + dicamba ⁴ + surf	0.05 + 0.131 + 0.8%	37	45	35	87	88
Clodinafop & safener + thifensulfuron + fluroxypyr + surf	0.05 + 0.014 + 0.062 + 0.8%	42	37	35	99	98
Clodinafop & safener + thifensulfuron + carfentrazone + MCPA ester	0.05 + 0.014 + 0.008 + 0.25	22	15	15	99	96
Clodinafop & safener + carfentrazone + MCPA ester	0.05 + 0.008 + 0.25	28	23	18	99	97
Imazamethabenz + NIS	0.375 + 0.25%	0	0	0	99	98
Imazamethabenz + dicamba ³ + NIS	0.375 + 0.125 + 0.25%	28	45	42	48	62
Imazamethabenz + dicamba ⁴ + NIS	0.375 + 0.131 + 0.25%	18	45	45	52	50
Tralkoxydim ⁷ + TF8035 COC	0.18 + 0.5%	23	23	17	99	96
Tralkoxydim ⁷ + TF8035 COC	0.25 + 0.5%	25	20	17	99	98
Tralkoxydim ⁸ + TF8035 COC	0.176 + 0.5%	20	27	23	99	96
Tralkoxydim ⁸ + TF8035 COC	0.24 + 0.5%	25	25	25	99	97
Weedy check		0	0	0	--	--
LSD (P=.05)		12	9	12	15	15

¹ Premix = Bronate 4E.

² Premix = Bronate 5E.

³ Clarity 4L.

⁴ Dicamba 70DF.

⁵ NIS = Class Preference nonionic surfactant.

⁶ surf = DSV adjuvant.

⁷ Achieve 3.34 SC.

⁸ Achieve 40DF.

Table 2. Wild oat control with Puma, Discover, Assert, and Achieve alone and with broadleaf herbicides in wheat at Crookston, MN - 2001 (Durgan, Cameron, Miller, and Martinson).

Treatment	Rate (lb ai/A)	Wheat Injury			Wioa Control		Wheat Yield (Bu/A)
		6/21	7/9	7/22	7/9	7/22	
		----- % -----					
Fenoxaprop & safener	0.082	13	0	0	99	96	62
Fenoxaprop & safener + bromoxynil & MCPA ester ¹	0.082 + 0.25 & 0.25	10	0	0	99	98	61
Fenoxaprop & safener + bromoxynil & MCPA ester ²	0.082 + 0.25 & 0.25	13	0	0	99	97	68
Fenoxaprop & safener + dicamba ³	0.082 + 0.125	10	3	0	99	98	62
Fenoxaprop & safener + dicamba ⁴	0.082 + 0.131	20	3	3	96	93	65
Fenoxaprop & safener + thifensulfuron + fluroxypyr + MCPA ester + NIS ⁵	0.082 + 0.007 + 0.124 + 0.375 + 0.25%	10	0	0	99	99	64
Fenoxaprop & safener + thifensulfuron + fluroxypyr + NIS	0.082 + 0.014 + 0.062 + 0.25%	13	0	0	99	98	61
Fenoxaprop & safener + thifensulfuron + carfentrazone + MCPA ester	0.082 + 0.014 0.008 + 0.25	7	0	0	99	97	58
Fenoxaprop & safener + carfentrazone + MCPA ester	0.082 + 0.008 + 0.25	8	0	0	99	97	70
Clodinafop & safener + surf ⁶	0.05 + 0.8%	5	0	0	99	98	63
Clodinafop & safener + bromoxynil & MCPA ester ¹ + surf	0.05 + 0.25 & 0.25 + 0.8%	2	0	0	99	97	64
Clodinafop & safener + dicamba ³ + surf	0.05 + 0.125 + 0.8%	5	3	3	82	77	63
Clodinafop & safener + dicamba ⁴ + surf	0.05 + 0.131 + 0.8%	3	3	3	87	83	64
Clodinafop & safener + thifensulfuron + fluroxypyr + surf	0.05 + 0.014 + 0.062 + 0.8%	7	3	3	99	96	62
Clodinafop & safener + thifensulfuron + carfentrazone + MCPA ester	0.05 + 0.014 0.008 + 0.25	3	0	0	99	95	60
Clodinafop & safener + carfentrazone + MCPA ester	0.05 + 0.008 + 0.25	5	0	0	99	95	62
Imazamethabenz + NIS	0.375 + 0.25%	0	0	0	99	97	59
Imazamethabenz + dicamba ³ + NIS	0.375 + 0.125 + 0.25%	10	7	7	48	65	56
Imazamethabenz + dicamba ⁴ + NIS	0.375 + 0.131 + 0.25%	5	10	10	48	50	57
Tralkoxydim ⁷ + TF8035 COC	0.18 + 0.5%	0	0	0	99	96	64
Tralkoxydim ⁷ + TF8035 COC	0.25 + 0.5%	3	0	0	99	97	66
Tralkoxydim ⁸ + TF8035 COC	0.176 + 0.5%	3	0	0	99	97	64
Tralkoxydim ⁸ + TF8035 COC	0.24 + 0.5%	7	0	0	99	97	61
Weedy check		0	0	0	--	--	49
LSD (P=.05)		8	ns	ns	16	14	9

¹ Premix = Bronate 4E.

² Premix = Bronate 5E.

³ Clarity 4L.

⁴ Dicamba 70DF.

⁵ NIS = Class Preference nonionic surfactant.

⁶ surf = DSV adjuvant.

⁷ Achieve 3.34 SC.

⁸ Achieve 40DF.