

Wild oat control in durum wheat, Williston 2009. Neil Riveland.

'Grenora' durum wheat was planted on recrop (land cropped to wheat in 2008) in 7 inch rows at 90 lbs/a on May 5. All treatments were applied on June 2 with air temperature of 54 F., 44% RH, soil temp 56 F, 95% clear sky and wind at 1-6 mph from 297 degrees to 3.5-4 leaf durum wheat and 2-4 leaf wild oats (most in the 3 leaf stage). We used a small plot sprayer with wind cones, mounted on a G-Allis Chalmers tractor to apply the treatments, delivering 8.5 gals/a at 30 psi through 800lvs flat fan nozzles to a 6.67 ft wide area the length of 10 by 24 ft plots. First rain received after application was 0.34 inches on June 6. Experimental design was a randomized complete block design with four replications. Wild oat density averaged 10-12 plants/ft². Plots were evaluated for wild oat control June 13, July 11 and August 2. Gopher damage was significant and rep 4 was abandon. Durum wheat was harvested for yield on September 1.

Treatment a	Rate oz/a	Crop Injury -Wioa Control-					Test	
		6/13	7/11	6/13	7/11	8/2	Weight lb/b	Yield bu/a
		----- % -----						
Mesosulfuron+								
Brox&MCPA5+MSO	0.036+8+1%	0	1	53	65	63	59.6	13.1
Flucarbazone+Brox&MCPA5+								
Basic Blend	0.32+8+1%	4	5	80	97	96	60.1	21.2
Prcz&Mess+Brox&MCPA5+								
Basic Blend	0.178+8+1%	0	0	83	95	90	60.3	20.3
Immb+Brox&MCPA5+								
Basic Blend	5+8+1%	1	4	88	93	88	59.6	19.9
Prcz+Brox&MCPA5+								
Basic Blend	0.32+8+1%	3	5	75	95	95	59.8	18.4
Pxlm+Brox&MCPA5+								
Basic Blend	0.26+8+1%	4	5	75	94	90	60.4	21.8
Pxlm&Florasulam&Flox+								
Basic Blend	1.68+1%	0	6	90	96	98	60.1	23.5
Tral-SC+Brox&MCPA5+								
Supercharge+AMS	2.9+8+0.5%+9.5	1	2	78	83	90	60.3	26.2
Fenoxaprop+Brox&MCPA5	0.8+8	3	2	47	75	73	60.9	22.7
Fenoxaprop+Brox&MCPA5	1.32+8	4	4	42	75	80	60.5	16.6
Clodinafop-ng+								
Brox&MCPA5	0.8+8	0	3	70	89	87	60.3	19.9
Pinoxaden+Brox&MCPA5	0.86+8	1	3	74	98	92	59.9	30.4
Difenzoquat+Brox&MCPA5	16+8	1	2	35	40	27	60.3	15.8
Untreated	0	0	0	0	0	0	61.0	8.5
HIGH MEAN		4	6	90	98	98	61.0	30.4
LOW MEAN		0	0	0	0	0	59.6	8.5
EXP MEAN		2	3	64	78	76	60.2	19.9
C.V. %		117	98	20	10	9	1.4	25.6
LSD 5%		3	NS	22	14	11	NS	8.5
LSD 1%		NS	NS	29	18	15	NS	11.5
# OF REPS		3	3	3	3	3	2	3
F-TRT		3	1	11	36	55	.5	3.4

a - MSO, a methylated seed oil from Loveland
Quad 7 used as the basic blend adjuvant

Summary: Gopher damage to the crop may have influenced ratings and yield data.

Wolverine for grass control in durum wheat. Williston 2009. Neil Riveland. WREC.

'Grenora' durum wheat was planted notill into wheat stubble from 2008 in 7 inch rows at 90 lbs/a on May 4. All treatments were applied on May 30 with 58 F air temperature, 59 degree soil temperature, 41% relative humidity, 95% clear sky and wind at 2-4mph from 134 degrees to 3.4 leaf wheat and 2-4 inch Wild Oats (Wioa). We used a small plot sprayer with wind cones, mounted on a G-Allis Chalmers tractor to apply the treatments, delivering 10 gals/a at 40 psi through 800lvs flat fan nozzles to a 6.67 ft wide area the length of 10 by 25 ft plots. First rain received after application was 0.34 inches on June 6. Experimental design was a randomized complete block design with four replications. Wild oat densities averaged 10-14 plant/ft². Plots were evaluated for crop injury and weed control on June 13, June 19, July 11 and August 2. Durum was machine harvested for yield on September 1.

Treatment a	Product Rate oz/a	----Crop Injury---				-----Control-----				----Crop-----	
		6/13	6/19	7/11	8/2	---Wioa Control---				Weight	Yield
		----- % -----				----- % -----				lbs/bu	bus/a
Untreated	0	0	0	0	0	0	0	0	0	60.8	6.9
Wolverine	27	5	1	3	4	75	86	94	89	60.3	24.7
Puma+Huskie	10.7+11	4	2	3	3	76	85	90	74	60.7	20.1
SP102+Huskie+Quad7	3+11+1%v/v	1	1	14	3	48	63	66	48	60.3	14.3
EXP MEAN		2	1	5	2	50	58	62	53	60.5	16.5
C.V. %		57	155	51	133	10	9	6	24	.4	19.2
LSD 5%		2	NS	4	NS	8	8	6	20	NS	5.0

a - SP102 = SP1020000420887

Wolverine and Puma+Huskie caused early season crop injury, perhaps due to cool weather conditions at application time. These herbicides also gave the best early season control of wild oats and the highest grain yields.

Wild oat control in durum with Rimfire Max. Williston 2009. Neil Riveland. WREC.

'Grenora' durum wheat was planted notill into wheat stubble from 2008 in 7 inch rows at 90 lbs/a on May 4. All treatments were applied on May 30 with 58 F air temperature, 59 degree soil temperature, 41% relative humidity, 95% clear sky and wind at 2-3 mph from 135 degrees to 3.4 leaf wheat and 2-4 inch Wild Oats (Wioa). We used a small plot sprayer with wind cones, mounted on a G-Allis Chalmers tractor to apply the treatments, delivering 10 gals/a at 40 psi through 800lvs flat fan nozzles to a 6.67 ft wide area the length of 10 by 25 ft plots. First rain received after application was 0.34 inches on June 6. Experimental design was a randomized complete block design with four replications. Wild oat densities averaged 10-14 plant/ft². Plots were evaluated for crop injury and weed control on June 13, June 19, July 11 and August 2. Durum was machine harvested for yield on August 21.

Treatment ^a	Product Rate oz/a	----Crop Injury----				----Wioa Control----				Test	
		6/13	6/19	7/11	8/2	6/13	6/19	7/11	8/2	Weight lbs/bu	Yield bus/a
Untreated	0	0	0	0	0	0	0	0	0	59.8	13.66
SP102+Huskie+MSO	3+11+24	1	1	8	5	55	69	74	73	59.9	20.10
SP102+Huskie+Quad 7	3+11+12.8	1	0	8	5	53	71	81	71	60.4	20.36
Wolverine	27.4	7	6	4	5	74	88	95	94	60.1	24.39
EXP MEAN		2	2	5	4	45	57	62	59	60.0	19.65
C.V. %		53	106	48	50	12	15	12	22	.4	11.34
LSD 5%		2	3	4	3	9	13	12	21	NS	3.65

^a - SP102 = SP1020000220887. MSO concentrate = methylated seed oil adjuvant.
Quad 7 = Basic pH blend adjuvant

Wolverine gave the best early season control of wild oats and had the highest wheat yield.

WILLISTON RESEARCH EXTENSION CENTER - 2009

VARIETY QUALIFICATION TRIALS FOR CLEARFIELD SPRING WHEAT
Neil Riveland

Two experiments, each including the same set of 10 cultivars of spring wheat, were planted on May 4.

The Clearfield treatment, Beyond, was applied to one set of the spring wheat cultivars at 10 fl oz/a product plus Maximizer COC at 0.5% v/v and 1.5 qt/a UAN, on June 5 to 3.5-4 leaf wheat beginning at 10:45 am. Air temperature was 49 degrees F, 95% clear sky, 48% RH, with 3-6 mph wind from 33 degrees, dry topsoil at 60 F. We used a small 25 foot boom sprayer with wind cones, which was mounted on a G-Allis Chalmers tractor, to apply the treatments. The sprayer delivered 10 gals/a at 40 psi through 8001 flat fan nozzles. First rain received after application was 0.34 inches on June 6. The experiment was a randomized complete block design with three replications.

Table 1. Response of ten hrs wheat cultivars to an application of Beyond herbicide.

Cultivar	Heading Date fr plt	Plant Height cm	Plant Height inches	Crop Injury %	Grain Protein %	Test Weight lbs/b	Yield bus/a
AP604 CL	45.0	56.3	22.2	0.0	16.2	60.4	42.98
AP605 CL	44.3	62.0	24.4	0.0	16.4	60.6	51.47
ND901 CL	46.7	66.3	26.1	0.0	16.1	59.6	48.25
ND904	49.0	73.0	28.7	3.3	14.6	59.0	50.17
ND905	47.0	70.7	27.8	5.0	15.6	59.1	48.97
ND906	50.3	65.3	25.7	11.7	14.6	59.0	45.41
ND907	44.0	55.7	21.9	0.0	15.8	60.4	44.53
Glenn	THESE THREE VARIETIES 100%						
Steele-ND	KILLED BY THE BEYOND AND NOT						
Reeder	INCLUDED IN ANY STATISTICAL ANALYSIS						
HIGH MEAN	50.3	73.0	28.7	11.7	16.4	60.6	51.47
LOW MEAN	44.0	55.7	21.9	0.0	14.6	59.0	42.98
EXP MEAN	46.6	64.2	25.3	2.9	15.6	59.7	47.40
C.V. %	.7	4.2	4.2	74.8		0.6	5.07
LSD 5%	.6	4.8	1.9	3.8		0.6	4.28
# OF REPS	3	3	3	3	1	3	3

Bronate at 24 oz/a product was applied on June 5 to another set of 10 spring wheat cultivars (same varieties) beginning at 11:05 am to 3.5 -4 leaf wheat. Air temperature was 50 degrees F, 95% clear sky, 48% RH, with 3-6 mph wind from 35 degrees, dry topsoil at 60 F. Again we used small 25 foot boom sprayer with wind cones, which was mounted on a G-Allis Chalmers tractor, to apply the treatments. The sprayer delivered 10 gals/a at 40 psi through 8001 flat fan nozzles. First rain received after application was 0.34 inches on June 6. The experiment was a randomized complete block design with three replications.

Table 2. Response of ten hrs wheat cultivars to an application of Bronate herbicide.

Cultivar	Heading Date fr plt	Plant Height cm	Plant Height inches	Grain Protein %	Test Weight lbs/b	Yield bus/a
AP604 CL	44.3	59.7	23.5	16.1	61.4	33.85
AP605 CL	44.3	60.7	23.9	15.9	61.3	38.22
ND901 CL	47.0	64.0	25.2	15.7	60.5	35.66
ND904	48.0	72.0	28.3	14.0	59.5	39.06
ND905	47.0	68.0	26.8	14.8	59.8	38.16
ND906	50.0	64.7	25.5	14.2	60.0	40.87
ND907	44.3	52.0	20.5	14.9	61.1	31.87
Glenn	46.0	63.3	24.9	14.8	62.9	36.32
Steele-ND	46.3	63.0	24.8	14.8	61.6	34.80
Reeder	47.0	64.3	25.3	14.2	61.0	41.72
HIGH MEAN	50.0	72.0	28.3	16.1	62.9	41.72
LOW MEAN	44.3	52.0	20.5	14.0	59.5	31.87
EXP MEAN	46.4	63.2	24.9	14.9	60.9	37.05
C.V. %	.8	5.4	5.4		.4	6.91
LSD 5%	.7	5.8	2.3		.5	4.39
# OF REPS	3	3	3	1	3	3

No visible crop injury was observed that could be attributed to the application of Bronate.

BOTH EXPERIMENTS:

Location of the WREC: Latitude 48 8'; Longitude 103 44'W;
 Elevation 2105 ft. Planted: May 4 into harrow soybean cover crop from 2008.
 Applied Fertilizer in lbs/a: 28N:26P20S:20K:
 OS Soil Test to two feet in lbs/a: 65N:16P:260K:14S 2.4 OM pH-6.0
 Soil Type: Williams-Bowbells Loam
 Harvested: August 26 Harvested Area: 56 ft²
 Grain protein percentages reported on a 12% moisture basis.

Comment: The difference in mean yield between the experiments exceeds 10 bus/a, with the experiment treated with the Clearfield herbicide having the higher mean yield. These experiments were within 100 feet of one another so the expectation is that their yield levels would be about the same. Bronate does not control grassy weeds but there was no significant grassy weed problem noted in that experiment. No explanation for the different yield levels is offered.