

Wheat

12-14-06 (06-5A)

Southern Illinois University

Weed Control in Winter Wheat.

Project Code: 06-5A Location: Belleville Research Center
Investigator: Bryan Young

Investigator: Bryan Young, Associate Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
Trial Status: Final Updated: 7-5-06

Objective:
Evaluate A12303 and Clearmax for crop safety and weed control
in winter wheat.

Weed Code	Common Name	Scientific Name
1. HORPU	barley, little	Hordeum pusillum Nutt.
2. RANAB	buttercup, smallflower	Ranunculus abortivus L.
3. LAMAM	henbit	Lamium amplexicaule L.
4. STEME	chickweed, common	Stellaria media (L.) Vill.

Crop 1:	TRZAW	wheat, winter	Variety:	Beyond
Planting Method:	Seeded		Planting Date:	10-20-05
Rate:	1.3	mil. S/A	Depth:	1.0 IN
Row Spacing:	7.5	IN		

Plot Width, Unit:	10	FT	Plot Length, Unit:	20	FT	Reps:	3
Tillage Type:	No-Till		Study Design:	Randomized complete block			
Previous Crop, Year:	GLXMA, 2005						
Field Prep./Maintenance:	N 30 LB/A applied on 10-20-05 and N 85 LB/A applied on 2-6-06.						

Soil Name:	Stoy	% OM:	1.6	pH:	5.3	CEC:	8
Texture:	Silt loam	Fert. Level:	P1: 109 LB/A, K: 592 LB/A				

APPLICATION DESCRIPTION

	A	B	C
Application Date:	11-21-05	3-15-06	3-29-06
Time of Day:	10:00	11:30	10:00
Application Method:	Spray	Spray	Spray
Application Timing:	NOV	MAR-A	MAR-B
Applic. Placement:	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	40 F	50 F	50 F
% Relative Humidity:	76	40	60
Wind Velocity, Unit:	5 MPH	0 MPH	0 MPH
Soil Moisture:	ABONOR	ABONOR	ABONOR

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	TRZAW F2	TRZAW F4	TRZAW F4-5
Height, Unit:	1-3 IN	5-6 IN	5-7 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code:	HORPU	HORPU	HORPU
Stage (leaves):	1-2	3-4	4-6
Height (inches):	1-2	1-2	1-3
Density:	Low	Medium	Medium
Weed 2 Code:	RANAB	RANAB	RANAB
Stage (leaves):	2-4	5-8	5-8
Height (inches):	0-1	1-2	2-3
Density:	Medium	Medium	Medium
Weed 3 Code:	LAMAM	LAMAM	LAMAM
Stage (leaves):	2-4	10+	10+
Height (inches):	0-1	1-3	1-3
Density:	Low	Medium	Medium
Weed 4 Code:	STEME	STEME	STEME
Stage (leaves):	10+	10+	10+
Height (inches):	0-1	0-1	0-2
Density:	Low	Low	Low

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer
Operating Pressure:	40 PSI	40 PSI	40 PSI
Nozzle Type:	Flat fan	Flat fan	Flat fan
Nozzle Size:	8002	8002	8002
Boom Length, Unit:	7.5 FT	7.5 FT	7.5 FT
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

NOTES:

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Weed Code												HORPU	HORPU
Crop Code												Control	Control
Rating Data Type												Percent	Percent
Rating Unit												Percent	Percent
Rating Date												Percent	Percent
Trt-Eval Interval												Percent	Percent
												7 DAT	21 DAT
												35 DAT	21 DAT
												35 DAT	35 DAT

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	Moisture Percent 6-19-06	Test wt. lb/bu 6-19-06	Yield bu/A 6-19-06	Injury Percent 7 DAT	Injury Percent 21 DAT	Injury Percent 35 DAT	Control Percent 21 DAT	Control Percent 35 DAT
1	CONFIDENTIAL																
2	CONFIDENTIAL																
3	NONTREATED									14.9	57.8	38	0	0	0	0	0
4	BEYOND	1	AS	0.0312	lb ai/a		4 fl oz/a	NOV	A	15.1	57.0	37	0	0	0	99	99
4	MCPA ESTER	3.7	EC	0.231	lb ai/a		8 fl oz/a	NOV	A								
4	ACTIVATOR 90	100	LIQ	0.25	% v/v		0.25 % v/v	NOV	A								
4	28% UAN	100	LIQ	2.5	% v/v		2.5 % v/v	NOV	A								
5	BEYOND	1	AS	0.0312	lb ai/a		4 fl oz/a	NOV	A	14.8	57.6	38	0	0	0	99	99
5	MCPA ESTER	3.7	EC	0.231	lb ai/a		8 fl oz/a	NOV	A								
5	ACTIVATOR 90	100	LIQ	0.25	% v/v		0.25 % v/v	NOV	A								
5	28% UAN	100	LIQ	2.0	% v/v		2.0 % v/v	NOV	A								
6	BEYOND	1	AS	0.0312	lb ai/a		4 fl oz/a	MAR-A	B	14.8	58.3	42	0	0	0	0	50
6	MCPA ESTER	3.7	EC	0.231	lb ai/a		8 fl oz/a	MAR-A	B								
6	ACTIVATOR 90	100	LIQ	0.25	% v/v		0.25 % v/v	MAR-A	B								
6	28% UAN	100	LIQ	2.5	% v/v		2.5 % v/v	MAR-A	B								
7	BEYOND	1	AS	0.0312	lb ai/a		4 fl oz/a	MAR-A	B	14.7	57.9	37	0	0	0	0	90
7	MCPA ESTER	3.7	EC	0.231	lb ai/a		8 fl oz/a	MAR-A	B								
7	ACTIVATOR 90	100	LIQ	0.25	% v/v		0.25 % v/v	MAR-A	B								
7	28% UAN	100	LIQ	2.0	% v/v		2.0 % v/v	MAR-A	B								
8	BEYOND	1	AS	0.0312	lb ai/a		4 fl oz/a	NOV	A	14.5	57.9	41	0	0	0	98	100
8	MCPA ESTER	3.7	EC	0.231	lb ai/a		8 fl oz/a	NOV	A								
8	ACTIVATOR 90	100	LIQ	0.25	% v/v		0.25 % v/v	NOV	A								
8	28% UAN	100	LIQ	2.5	% v/v		2.5 % v/v	NOV	A								
8	BEYOND	1	AS	0.0312	lb ai/a		4 fl oz/a	MAR-A	B								
8	MCPA ESTER	3.7	EC	0.231	lb ai/a		8 fl oz/a	MAR-A	B								
8	ACTIVATOR 90	100	LIQ	0.25	% v/v		0.25 % v/v	MAR-A	B								
8	28% UAN	100	LIQ	2.5	% v/v		2.5 % v/v	MAR-A	B								
9	BEYOND	1	AS	0.0312	lb ai/a		4 fl oz/a	NOV	A	14.6	57.4	46	0	0	0	98	100
9	MCPA ESTER	3.7	EC	0.231	lb ai/a		8 fl oz/a	NOV	A								
9	ACTIVATOR 90	100	LIQ	0.25	% v/v		0.25 % v/v	NOV	A								
9	28% UAN	100	LIQ	2.5	% v/v		2.5 % v/v	NOV	A								
9	HARMONY EXTRA XP	75	WG	0.0234	lb ai/a		0.5 oz/a	MAR-A	B								
9	ACTIVATOR 90	100	LIQ	0.25	% v/v		0.25 % v/v	MAR-A	B								
10	BEYOND	1	AS	0.0312	lb ai/a		4 fl oz/a	MAR-A	B	14.7	58.4	42	0	0	0	0	63
10	MCPA ESTER	3.7	EC	0.231	lb ai/a		8 fl oz/a	MAR-A	B								
10	HEADLINE	2.09	EC	0.049	lb ai/a		3 fl oz/a	MAR-A	B								
10	ACTIVATOR 90	100	LIQ	0.25	% v/v		0.25 % v/v	MAR-A	B								
10	28% UAN	100	LIQ	2.5	% v/v		2.5 % v/v	MAR-A	B								
11	A12303	0.83	EC	0.0535	lb ai/a	0.516	pt/a	MAR-B	C	14.7	57.8	36	0	0	0	90	90
11	A12127	100	LIQ	0.6	pt/a	0.6	pt/a	MAR-B	C								
12	A12303	0.83	EC	0.0535	lb ai/a	0.516	pt/a	MAR-B	C	15.1	57.9	39	0	0	0	77	77
12	2,4-D LV4	3.8	EC	0.353	lb ae/a	0.74	pt/a	MAR-B	C								
12	A12127	100	LIQ	0.6	pt/a	0.6	pt/a	MAR-B	C								
13	A12303	0.83	EC	0.0535	lb ai/a	0.516	pt/a	MAR-B	C	15.1	57.8	38	0	0	0	88	88
13	HARMONY EXTRA XP	75	WG	0.0234	lb ai/a	0.5	oz/a	MAR-B	C								
13	A12127	100	LIQ	0.6	pt/a	0.6	pt/a	MAR-B	C								
14	OSPREY	4.5	WG	0.0134	lb ai/a	4.75	oz/a	MAR-B	C	14.5	58.0	46	2	0	0	88	87
14	DESTINY MSO	100	LIQ	1.0	% v/v	1	% v/v	MAR-B	C								
14	28% UAN	100	LIQ	2.5	% v/v	2.5	% v/v	MAR-B	C								
15	OSPREY	4.5	WG	0.0134	lb ai/a	4.75	oz/a	MAR-B	C	14.9	57.9	37	2	0	0	90	90
15	2,4-D LV4	3.8	EC	0.35	lb ai/a	0.74	pt/a	MAR-B	C								
15	DESTINY MSO	100	LIQ	1.0	% v/v	1	% v/v	MAR-B	C								
15	28% UAN	100	LIQ	2.5	% v/v	2.5	% v/v	MAR-B	C								
16	OSPREY	4.5	WG	0.0134	lb ai/a	4.75	oz/a	MAR-B	C	14.7	58.0	36	25	0	0	33	33
16	HARMONY EXTRA XP	75	WG	0.0234	lb ai/a	0.5	oz/a	MAR-B	C								
16	DESTINY MSO	100	LIQ	1.0	% v/v	1	% v/v	MAR-B	C								
16	28% UAN	100	LIQ	2.5	% v/v	2.5	% v/v	MAR-B	C								

LSD (P=.05)										0.60	0.69	15.9	0.0	0.0	0.0	15.8	18.3
Replicate F										1.526	0.577	2.082	0.000	0.000	0.000	2.703	3.379
Replicate Prob(F)										0.2378	0.5692	0.1467	1.0000	1.0000	1.0000	0.0858	0.0496
Treatment F										0.923	2.185	0.380	0.000	0.000	0.000	64.687	22.381
Treatment Prob(F)										0.5446	0.0471	0.9637	1.0000	1.0000	1.0000	0.0001	0.0001

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Weed Code	RANAB	RANAB	STEME	STEME	LAMAM	LAMAM
Crop Code						
Rating Data Type	Control	Control	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date						
Trt-Eval Interval	21 DAT	35 DAT	21 DAT	35 DAT	21 DAT	35 DAT

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code						
1	CONFIDENTIAL														
2	CONFIDENTIAL														
3	NONTREATED									0	0	0	0	0	0
4	BEYOND	1	AS	0.0312	lb ai/a	4	fl oz/a	NOV	A	0	90	0	90	0	90
4	MCPA ESTER	3.7	EC	0.231	lb ai/a	8	fl oz/a	NOV	A						
4	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	NOV	A						
4	28% UAN	100	LIQ	2.5	% v/v	2.5	% v/v	NOV	A						
5	BEYOND	1	AS	0.0312	lb ai/a	4	fl oz/a	NOV	A	0	90	0	90	0	90
5	MCPA ESTER	3.7	EC	0.231	lb ai/a	8	fl oz/a	NOV	A						
5	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	NOV	A						
5	28% UAN	100	LIQ	20	% v/v	20	% v/v	NOV	A						
6	BEYOND	1	AS	0.0312	lb ai/a	4	fl oz/a	MAR-A	B	50	98	50	98	50	98
6	MCPA ESTER	3.7	EC	0.231	lb ai/a	8	fl oz/a	MAR-A	B						
6	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	MAR-A	B						
6	28% UAN	100	LIQ	2.5	% v/v	2.5	% v/v	MAR-A	B						
7	BEYOND	1	AS	0.0312	lb ai/a	4	fl oz/a	MAR-A	B	50	98	50	97	50	96
7	MCPA ESTER	3.7	EC	0.231	lb ai/a	8	fl oz/a	MAR-A	B						
7	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	MAR-A	B						
7	28% UAN	100	LIQ	20	% v/v	20	% v/v	MAR-A	B						
8	BEYOND	1	AS	0.0312	lb ai/a	4	fl oz/a	NOV	A	98	100	98	100	98	100
8	MCPA ESTER	3.7	EC	0.231	lb ai/a	8	fl oz/a	NOV	A						
8	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	NOV	A						
8	28% UAN	100	LIQ	2.5	% v/v	2.5	% v/v	NOV	A						
8	BEYOND	1	AS	0.0312	lb ai/a	4	fl oz/a	MAR-A	B						
8	MCPA ESTER	3.7	EC	0.231	lb ai/a	8	fl oz/a	MAR-A	B						
8	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	MAR-A	B						
8	28% UAN	100	LIQ	2.5	% v/v	2.5	% v/v	MAR-A	B						
9	BEYOND	1	AS	0.0312	lb ai/a	4	fl oz/a	NOV	A	98	100	98	100	98	100
9	MCPA ESTER	3.7	EC	0.231	lb ai/a	8	fl oz/a	NOV	A						
9	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	NOV	A						
9	28% UAN	100	LIQ	2.5	% v/v	2.5	% v/v	NOV	A						
9	HARMONY EXTRA XP	75	WG	0.0234	lb ai/a	0.5	oz/a	MAR-A	B						
9	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	MAR-A	B						
10	BEYOND	1	AS	0.0312	lb ai/a	4	fl oz/a	MAR-A	B	50	98	50	95	50	93
10	MCPA ESTER	3.7	EC	0.231	lb ai/a	8	fl oz/a	MAR-A	B						
10	HEADLINE	2.09	EC	0.049	lb ai/a	3	fl oz/a	MAR-A	B						
10	ACTIVATOR 90	100	LIQ	0.25	% v/v	0.25	% v/v	MAR-A	B						
10	28% UAN	100	LIQ	2.5	% v/v	2.5	% v/v	MAR-A	B						
11	A12303	0.83	EC	0.0535	lb ai/a	0.516	pt/a	MAR-B	C	0	30	57	57	73	73
11	A12127	100	LIQ	0.6	pt/a	0.6	pt/a	MAR-B	C						
12	A12303	0.83	EC	0.0535	lb ai/a	0.516	pt/a	MAR-B	C	98	98	87	87	95	95
12	2,4-D LV4	3.8	EC	0.353	lb ae/a	0.74	pt/a	MAR-B	C						
12	A12127	100	LIQ	0.6	pt/a	0.6	pt/a	MAR-B	C						
13	A12303	0.83	EC	0.0535	lb ai/a	0.516	pt/a	MAR-B	C	98	98	98	98	98	98
13	HARMONY EXTRA XP	75	WG	0.0234	lb ai/a	0.5	oz/a	MAR-B	C						
13	A12127	100	LIQ	0.6	pt/a	0.6	pt/a	MAR-B	C						
14	OSPREY	4.5	WG	0.0134	lb ai/a	4.75	oz/a	MAR-B	C	98	98	95	95	95	95
14	DESTINY MSO	100	LIQ	1.0	% v/v	1	% v/v	MAR-B	C						
14	28% UAN	100	LIQ	2.5	% v/v	2.5	% v/v	MAR-B	C						
15	OSPREY	4.5	WG	0.0134	lb ai/a	4.75	oz/a	MAR-B	C	98	98	98	98	98	98
15	2,4-D LV4	3.8	EC	0.35	lb ai/a	0.74	pt/a	MAR-B	C						
15	DESTINY MSO	100	LIQ	1.0	% v/v	1	% v/v	MAR-B	C						
15	28% UAN	100	LIQ	2.5	% v/v	2.5	% v/v	MAR-B	C						
16	OSPREY	4.5	WG	0.0134	lb ai/a	4.75	oz/a	MAR-B	C	98	98	98	98	98	98
16	HARMONY EXTRA XP	75	WG	0.0234	lb ai/a	0.5	oz/a	MAR-B	C						
16	DESTINY MSO	100	LIQ	1.0	% v/v	1	% v/v	MAR-B	C						
16	28% UAN	100	LIQ	2.5	% v/v	2.5	% v/v	MAR-B	C						

LSD (P=.05)	0.0	23.3	22.6	22.7	9.7	9.7
Replicate F	0.000	1.000	0.767	0.758	1.258	1.844
Replicate Prob(F)	1.0000	0.3816	0.4745	0.4785	0.3009	0.1782
Treatment F	0.000	14.480	25.774	12.072	143.102	60.556
Treatment Prob(F)	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: BASF, Syngenta.
2. Ratings: CI 7, 21, and 35 DA "A", "B"+"C"; WC 21 and 35 DA "A", "B"+"C"; rate all plots at 35 DA "B" or "C".
3. Yield.
4. Application timings;
NOV = November after grass emergence but before 2 inch grass.
MAR-A= early March when wheat has started growing and grass is less than 3 inch.
MAR-B= when grass is 1-2 tillers or in March.
5. Application "C" was delayed 1 week due to snow and cold.
6. DAT = Days after NOV, MAR-A, or MAR-B applications.
7. Ratings at 7 days after NOV, MAR-A, and MAR-B applications were on 11-28-05, 3-22-06, and 4-5-06, respectively.
Ratings at 21 days after NOV, MAR-A, and MAR-B applications were on 12-12-05, 4-5-06, and 4-19-05, respectively.
Ratings at 35 days after NOV, MAR-A, and MAR-B applications were on 12-26-05, 4-19-06, and 5-3-06, respectively.
8. On 5-3-06, at 35 days after the MAR-B application, all plots were evaluated with no changes in weed control or crop injury from the 12-26-05 ratings (NOV application) or from the 4-19-06 ratings (MAR-A application).
9. For treatments 8 and 9, with both a NOV and a MAR-A application, ratings are after the MAR-A application.
Treatments 8 and 9 were also rated at 7, 21, and 35 days after the NOV application (data not presented), with results similar to treatment 4.
10. Harvested 6-19-06, (7) 7.5 inch rows by 17 ft.