

Annual Bluegrass Control in Winter Wheat.

Trial ID: 09-ARC-9-W90

Location: Agronomy Res. Center

Investigator: Bryan Young, Professor, Southern Illinois University, bgyoung@siu.edu
 City State Zip Country: Carbondale IL 62901 USA
 Trial Status: FINAL Initiation Date: 10-28-08

Objectives: Evaluate various herbicide programs in winter wheat especially for control of annual bluegrass.

Crop 1: TRZAW Winter wheat Variety: P25R47
 Planting Method: Seeded Planting Date: 10-28-08
 Rate, Unit: 1.3 mil. S/A Depth, Unit: 1 IN
 Row Spacing, Unit: 7.5 IN

Pest 1 Type: W Code: POAAN Poa annua L. bluegrass, annual
 Pest 2 Type: W Code: LAMAM Lamium amplexicaule L. henbit
 Pest 3 Type: W Code: STEME Stellaria media (L.) Vill. chickweed, common

Plot Width, Unit: 10 FT Site Type: FIELD
 Plot Length, Unit: 30 FT Tillage Type: NO-TILL
 Replications: 3 Study Design: Randomized Complete Block

Prior Crops, Year
 1. ZEAMD 2008

Field Prep./Maintenance: N 18 LB/A, P205 46 LB/A, K2O 120 LB/A on 10-27-08 and N 95 LB/A as 32% UAN on 3-4-09

% OM: 1.6 Texture: SILT LOAM
 pH: 6.2 Soil Name: STGY
 CEC: 7.4 Fert. Level: P1: 66 LB/A, K: 274 LB/A

	Application Description			
	A	B	C	D
Application Date:	10-31-08	11-26-08	03-26-09	03-26-09
Time of Day:	15:30	14:30	10:00	10:00
Application Method:	Spray	Spray	Spray	Spray
Application Timing:	PRE	FALL-1	FALL-2	SPRING
Application Placement:	BROFOL	BROFOL	BROFOL	BROFOL
Applied By:	DKT	TGM	NVH	NVH
Air Temperature, Unit:	75 F	57 F	55 F	55 F
% Relative Humidity:	36	42	53	53
Wind Velocity, Unit:	6 MPH	1 MPH	5 MPH	5 MPH
Wind Direction:	SW	N	NE	NE
Dew Presence (Y/N):	N	N	Y	Y
Soil Temperature, Unit:	59 F	40 F	52 F	52 F
Soil Moisture:	ABONOR	ABONOR	ABONOR	ABONOR
% Cloud Cover:	10	0	70	70
	10-31-08	11-26-08	03-26-09	03-26-09
Crop stage at application:	NA	2	LVS 16-18	LVS 16-18
Height Min, Max (inch):		2 4	8 10	8 10

	Pest Stage At Each Application			
	A	B	C	D
Application Date:	10-31-08	11-26-08	03-26-09	03-26-09
Weed Code:	POAAN	POAAN	POAAN	POAAN
Stage Majority (leaves):	2 LVS	4 TILLER	7 TILLER	7 TILLER
Stage Min, Max:	1 3	2 4	20 40	20 40
Height Majority:	1 IN	3 IN	3 IN	3 IN
Height Min, Max:	1 2	2 4	2 4	2 4
Density, Unit:	10 FT2	15 FT2	15 FT2	15 FT2
Weed Code:	LAMAM	LAMAM	LAMAM	LAMAM
Stage Majority (leaves):	4	6	30	30
Stage Min, Max:	COTY 8	2 12	25 35	25 35
Height Majority:	1 IN	3 IN	6 IN	6 IN
Height Min, Max:	0.5 2	1 5	4 8	4 8
Density, Unit:	2 FT2	2 FT2	2 FT2	2 FT2
Weed Code:	STEME	STEME	STEME	STEME
Stage Majority (leaves):	10	12	70	70
Stage Min, Max:	COTY 16	2 20	30 100	30 100
Height Majority:	2.5 IN	3 IN	6 IN	6 IN
Height Min, Max:	0.5 3.5	1 4	4 7	4 7
Density, Unit:	2 FT2	2 FT2	2 FT2	2 FT2

Application Equipment

	A	B	C	D
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer
Operating Pressure:	30 PSI	30 PSI	30 PSI	30 PSI
Nozzle Type:	Flat fan	Flat fan	Flat fan	Flat fan
Nozzle Size:	XR 8002	XR 8002	XR 8002	XR 8002
Boom Length, Unit:	7.5 FT	7.5 FT	7.5 FT	7.5 FT
Spray Volume, Unit:	15 GPA	15 GPA	15 GPA	15 GPA

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Pest Code
Crop Code
Rating Date
Rating Data Type
Rating Unit
Rating Timing
Trt-Eval Interval

TRZAW TRZAW TRZAW
06-22-09 06-22-09 06-22-09
Moisture Test wt. Yield
Percent lb/bu bu/A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code			
1	NONTREATED									10.6 a	49.1 abc	57 ab
2	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	PRE	A	9.9 cd	48.7 c	68 a
2	N-PAK AMS	100	SL	5	% v/v	5	% v/v	PRE	A			
2	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	SPRING	D			
2	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	SPRING	D			
3	FINESSE	75	WG			0.5	oz/a	PRE	A	10.7 a	51.2 ab	48 b
3	GLEAN XP	75	WG	0.0195	lb ai/a			PRE	A			
3	ALLY XP	60	WG	0.0039	lb ai/a			PRE	A			
3	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	PRE	A			
3	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	SPRING	D			
3	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	SPRING	D			
4	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	PRE	A	10.6 a	51.5 a	51 b
4	FINESSE	75	WG			0.5	oz/a	PRE	A			
4	GLEAN XP	75	WG	0.0195	lb ai/a			PRE	A			
4	ALLY XP	60	WG	0.0039	lb ai/a			PRE	A			
4	N-PAK AMS	100	SL	5	% v/v	5	% v/v	PRE	A			
4	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	SPRING	D			
4	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	SPRING	D			
5	FINESSE	75	WG			0.3	oz/a	FALL-1	B	10.6 ab	51.2 ab	55 ab
5	GLEAN XP	75	WG	0.0117	lb ai/a			FALL-1	B			
5	ALLY XP	60	WG	0.00234	lb ai/a			FALL-1	B			
5	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	FALL-1	B			
5	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	SPRING	D			
5	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	SPRING	D			
6	FINESSE	75	WG			0.4	oz/a	FALL-1	B	10.3 abc	50.4 abc	50 b
6	GLEAN XP	75	WG	0.0156	lb ai/a			FALL-1	B			
6	ALLY XP	60	WG	0.00312	lb ai/a			FALL-1	B			
6	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	FALL-1	B			
6	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	SPRING	D			
6	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	SPRING	D			
7	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	PRE	A	9.8 cd	48.4 c	67 a
7	N-PAK AMS	100	SL	5	% v/v	5	% v/v	PRE	A			
7	OLYMPUS FLEX	11.25	SG	0.0246	lb ai/a	3.5	oz/a	FALL-2	C			
7	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	FALL-2	C			
7	28% UAN	100	SL	4	pt/a	4	pt/a	FALL-2	C			
8	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	PRE	A	9.7 d	48.5 c	61 ab
8	N-PAK AMS	100	SL	5	% v/v	5	% v/v	PRE	A			
8	OLYMPUS FLEX	11.25	SG	0.0246	lb ai/a	3.5	oz/a	FALL-2	C			
8	HUSKIE	2.06	EC	0.177	lb ai/a	11	fl oz/a	FALL-2	C			
8	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	FALL-2	C			
8	28% UAN	100	SL	4	pt/a	4	pt/a	FALL-2	C			
9	OLYMPUS FLEX	11.25	SG	0.0246	lb ai/a	3.5	oz/a	FALL-1	B	10.3 abc	49.7 abc	61 ab
9	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	FALL-1	B			
9	28% UAN	100	SL	4	pt/a	4	pt/a	FALL-1	B			
10	OLYMPUS FLEX	11.25	SG	0.0246	lb ai/a	3.5	oz/a	FALL-1	B	10.0 bcd	49.0 bc	68 a
10	HUSKIE	2.06	EC	0.177	lb ai/a	11	fl oz/a	FALL-1	B			
10	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	FALL-1	B			
10	28% UAN	100	SL	4	pt/a	4	pt/a	FALL-1	B			
LSD (P=.05)										0.58	2.45	14.8
Replicate F										6.736	0.106	1.481
Replicate Prob(F)										0.0065	0.9004	0.2538
Treatment F										3.799	2.188	2.231
Treatment Prob(F)										0.0077	0.0753	0.0705

Means followed by same letter do not significantly differ (P=.05, LSD)

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Rating Unit
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Trt-Eval Interval

TRZAW TRZAW TRZAW TRZAW TRZAW TRZAW
03-09-09 04-02-09 04-07-09 04-07-09 05-11-09 05-11-09
Injury Discolor Stunt Stand Red Injury Stunt
Percent Percent Percent Percent Percent Percent
Spring 7-DA-C 12-DA-C 12-DA-C 46-DA-C 46-DA-C
Greenup 7 DA-D 12 DA-D 12 DA-D 46 DA-D 46 DA-D

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code							
1	NONTREATED										0 b	0 a	2 cd	3 c	0 c	0 d
2	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	PRE	A		0 b	0 a	2 cd	2 c	0 c	0 d
2	N-PAK AMS	100	SL	5	% v/v	5	% v/v	PRE	A							
2	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	SPRING	D							
2	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	SPRING	D							
3	FINESSE	75	WG			0.5	oz/a	PRE	A	7 a	0 a	18 ab	25 ab	23 a	22 a	
3	GLEAN XP	75	WG	0.0195	lb ai/a			PRE	A							
3	ALLY XP	60	WG	0.0039	lb ai/a			PRE	A							
3	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	PRE	A							
3	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	SPRING	D							
3	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	SPRING	D							
4	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	PRE	A	5 ab	0 a	28 a	30 a	25 a	20 a	
4	FINESSE	75	WG			0.5	oz/a	PRE	A							
4	GLEAN XP	75	WG	0.0195	lb ai/a			PRE	A							
4	ALLY XP	60	WG	0.0039	lb ai/a			PRE	A							
4	N-PAK AMS	100	SL	5	% v/v	5	% v/v	PRE	A							
4	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	SPRING	D							
4	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	SPRING	D							
5	FINESSE	75	WG			0.3	oz/a	FALL-1	B	2 ab	0 a	13 bc	12 bc	13 b	10 b	
5	GLEAN XP	75	WG	0.0117	lb ai/a			FALL-1	B							
5	ALLY XP	60	WG	0.00234	lb ai/a			FALL-1	B							
5	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	FALL-1	B							
5	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	SPRING	D							
5	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	SPRING	D							
6	FINESSE	75	WG			0.4	oz/a	FALL-1	B	5 ab	0 a	17 ab	12 bc	27 a	20 a	
6	GLEAN XP	75	WG	0.0156	lb ai/a			FALL-1	B							
6	ALLY XP	60	WG	0.00312	lb ai/a			FALL-1	B							
6	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	FALL-1	B							
6	HARMONY EXTRA SG	50	SG	0.0234	lb ai/a	0.75	oz/a	SPRING	D							
6	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	SPRING	D							
7	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	PRE	A	0 b	0 a	8 bcd	7 c	7 bc	3 cd	
7	N-PAK AMS	100	SL	5	% v/v	5	% v/v	PRE	A							
7	OLYMPUS FLEX	11.25	SG	0.0246	lb ai/a	3.5	oz/a	FALL-2	C							
7	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	FALL-2	C							
7	28% UAN	100	SL	4	pt/a	4	pt/a	FALL-2	C							
8	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	PRE	A	2 ab	0 a	7 bcd	13 bc	8 b	7 bc	
8	N-PAK AMS	100	SL	5	% v/v	5	% v/v	PRE	A							
8	OLYMPUS FLEX	11.25	SG	0.0246	lb ai/a	3.5	oz/a	FALL-2	C							
8	HUSKIE	2.06	EC	0.177	lb ai/a	11	fl oz/a	FALL-2	C							
8	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	FALL-2	C							
8	28% UAN	100	SL	4	pt/a	4	pt/a	FALL-2	C							
9	OLYMPUS FLEX	11.25	SG	0.0246	lb ai/a	3.5	oz/a	FALL-1	B	2 ab	0 a	7 bcd	5 c	0 c	0 d	
9	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	FALL-1	B							
9	28% UAN	100	SL	4	pt/a	4	pt/a	FALL-1	B							
10	OLYMPUS FLEX	11.25	SG	0.0246	lb ai/a	3.5	oz/a	FALL-1	B	0 b	0 a	0 d	2 c	0 c	0 d	
10	HUSKIE	2.06	EC	0.177	lb ai/a	11	fl oz/a	FALL-1	B							
10	ACTIVATOR 90	100	SL	0.5	% v/v	0.5	% v/v	FALL-1	B							
10	28% UAN	100	SL	4	pt/a	4	pt/a	FALL-1	B							
LSD (P=.05)										5.2	0.0	12.2	13.6	7.6	5.6	
Replicate F										2.818	0.000	1.839	1.118	0.673	0.310	
Replicate Prob(F)										0.0861	1.0000	0.1876	0.3485	0.5226	0.7370	
Treatment F										2.030	0.000	4.761	4.533	18.579	23.526	
Treatment Prob(F)										0.0961	1.0000	0.0024	0.0031	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

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Location: Agronomy Res. Center

										POAAN	POAAN	LAMAM	LAMAM	STEME	STEME
Pest Code										03-09-09	05-11-09	03-09-09	05-11-09	03-09-09	05-11-09
Crop Code										Control	Control	Control	Control	Control	Control
Rating Date										Percent	Percent	Percent	Percent	Percent	Percent
Rating Data Type										Spring	46-DA-C	Spring	46-DA-C	Spring	46-DA-C
Rating Unit										Greenup	46 DA-D	Greenup	46 DA-D	Greenup	46 DA-D
Rating Timing															
Trt-Eval Interval															
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code						
1	NONTREATED									0 d	0 c	0 c	0 b	0 c	0 b
2	ROUNDUP P-MAX	4.5 SL		0.77 lb ae/a	22 fl oz/a			PRE	A	95 a	96 a	99 a	99 a	99 a	99 a
2	N-PAK AMS	100 SL		5 % v/v	5 % v/v			PRE	A						
2	HARMONY EXTRA SG	50 SG		0.0234 lb ai/a	0.75 oz/a			SPRING	D						
2	ACTIVATOR 90	100 SL		0.5 % v/v	0.5 % v/v			SPRING	D						
3	FINESSE	75 WG			0.5 oz/a			PRE	A	53 b	60 b	99 a	99 a	99 a	99 a
3	GLEAN XP	75 WG		0.0195 lb ai/a				PRE	A						
3	ALLY XP	60 WG		0.0039 lb ai/a				PRE	A						
3	ACTIVATOR 90	100 SL		0.5 % v/v	0.5 % v/v			PRE	A						
3	HARMONY EXTRA SG	50 SG		0.0234 lb ai/a	0.75 oz/a			SPRING	D						
3	ACTIVATOR 90	100 SL		0.5 % v/v	0.5 % v/v			SPRING	D						
4	ROUNDUP P-MAX	4.5 SL		0.77 lb ae/a	22 fl oz/a			PRE	A	96 a	95 a	99 a	99 a	99 a	99 a
4	FINESSE	75 WG			0.5 oz/a			PRE	A						
4	GLEAN XP	75 WG		0.0195 lb ai/a				PRE	A						
4	ALLY XP	60 WG		0.0039 lb ai/a				PRE	A						
4	N-PAK AMS	100 SL		5 % v/v	5 % v/v			PRE	A						
4	HARMONY EXTRA SG	50 SG		0.0234 lb ai/a	0.75 oz/a			SPRING	D						
4	ACTIVATOR 90	100 SL		0.5 % v/v	0.5 % v/v			SPRING	D						
5	FINESSE	75 WG			0.3 oz/a			FALL-1	B	22 c	43 b	99 a	99 a	99 a	99 a
5	GLEAN XP	75 WG		0.0117 lb ai/a				FALL-1	B						
5	ALLY XP	60 WG		0.00234 lb ai/a				FALL-1	B						
5	ACTIVATOR 90	100 SL		0.5 % v/v	0.5 % v/v			FALL-1	B						
5	HARMONY EXTRA SG	50 SG		0.0234 lb ai/a	0.75 oz/a			SPRING	D						
5	ACTIVATOR 90	100 SL		0.5 % v/v	0.5 % v/v			SPRING	D						
6	FINESSE	75 WG			0.4 oz/a			FALL-1	B	38 b	48 b	99 a	99 a	99 a	99 a
6	GLEAN XP	75 WG		0.0156 lb ai/a				FALL-1	B						
6	ALLY XP	60 WG		0.00312 lb ai/a				FALL-1	B						
6	ACTIVATOR 90	100 SL		0.5 % v/v	0.5 % v/v			FALL-1	B						
6	HARMONY EXTRA SG	50 SG		0.0234 lb ai/a	0.75 oz/a			SPRING	D						
6	ACTIVATOR 90	100 SL		0.5 % v/v	0.5 % v/v			SPRING	D						
7	ROUNDUP P-MAX	4.5 SL		0.77 lb ae/a	22 fl oz/a			PRE	A	93 a	96 a	99 a	98 a	99 a	99 a
7	N-PAK AMS	100 SL		5 % v/v	5 % v/v			PRE	A						
7	OLYMPUS FLEX	11.25 SG		0.0246 lb ai/a	3.5 oz/a			FALL-2	C						
7	ACTIVATOR 90	100 SL		0.5 % v/v	0.5 % v/v			FALL-2	C						
7	28% UAN	100 SL		4 pt/a	4 pt/a			FALL-2	C						
8	ROUNDUP P-MAX	4.5 SL		0.77 lb ae/a	22 fl oz/a			PRE	A	95 a	99 a	99 a	99 a	98 a	99 a
8	N-PAK AMS	100 SL		5 % v/v	5 % v/v			PRE	A						
8	OLYMPUS FLEX	11.25 SG		0.0246 lb ai/a	3.5 oz/a			FALL-2	C						
8	HUSKIE	2.06 EC		0.177 lb ai/a	11 fl oz/a			FALL-2	C						
8	ACTIVATOR 90	100 SL		0.5 % v/v	0.5 % v/v			FALL-2	C						
8	28% UAN	100 SL		4 pt/a	4 pt/a			FALL-2	C						
9	OLYMPUS FLEX	11.25 SG		0.0246 lb ai/a	3.5 oz/a			FALL-1	B	85 a	82 a	87 b	98 a	95 b	99 a
9	ACTIVATOR 90	100 SL		0.5 % v/v	0.5 % v/v			FALL-1	B						
9	28% UAN	100 SL		4 pt/a	4 pt/a			FALL-1	B						
10	OLYMPUS FLEX	11.25 SG		0.0246 lb ai/a	3.5 oz/a			FALL-1	B	85 a	92 a	96 a	99 a	98 a	99 a
10	HUSKIE	2.06 EC		0.177 lb ai/a	11 fl oz/a			FALL-1	B						
10	ACTIVATOR 90	100 SL		0.5 % v/v	0.5 % v/v			FALL-1	B						
10	28% UAN	100 SL		4 pt/a	4 pt/a			FALL-1	B						
LSD (P=.05)										16.4	17.4	3.5	1.8	3.0	0.0
Replicate F										0.132	0.647	0.288	0.474	1.449	0.000
Replicate Prob(F)										0.8768	0.5355	0.7530	0.6302	0.2608	1.0000
Treatment F										41.123	31.138	693.466	2596.661	977.498	0.000
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001	0.0001	1.0000

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Location: Agronomy Res. Center

Trial Comments

1. Protocol: DuPont, Bayer (EH1).
2. Ratings: CI and WC as needed.
3. The FALL-2 application was delayed until spring because weed pressure was low in plots following the PRE application.
4. Wheat injury was discoloration and stand reduction. Discolor = Discoloration.
Stunt was height reduction was not apparent until stem elongation started. Stand Red = Stand reduction.
5. An overall evaluation of leaf and head diseases was made on 6-2-09,
tan spot infection was low at 1-8% severity on the flagleaf and head scab infection was very high at 20-40% severity.
6. Harvested 6-22-09, (8) 7.5 inch rows by 27 ft.