Control of Italian (annual) Ryegrass in Winter Wheat.

01-WF-SEN-190

OBJECTIVE: Evaluate conventional and experimental herbicides for weed control in winter wheat.

SUMMARY: Significant wheat injury was observed from spring herbicide applications with the greatest injury from Everest plus Harmony Extra (45%). Wheat injury was less than 5% from fall herbicide applications. Wheat injury decreased to 10% or less by 28 days after treatment.

Italian ryegrass control was at least 91% from Axiom, Everest, Maverick, Achieve, Hoelon, and Discover applied in either the fall or spring. However, tank mixing Harmony Extra or Harmony GT with Achieve decreased Italian ryegrass control by up to 79%.

Wheat yield was 77 bu/A in handweeded plots and 73 bu/A in nontreated plots. All herbicide treated plots yielded similar to or greater than the handweed plots.

HERBICIDES / ADJUVANTS	WEEDS	CROP
ACHIEVE 40 DG	ryegrass, Italian	wheat, winter
AXIOM 68 WG		
DISCOVER 2 EC		
EVEREST 70 WG		
HARMONY EXTRA 75 WG		
HARMONY GT 75 WG		
HOELON 3 EC		
MAVERICK 75 WG		
SENCOR 75 WG		
ACTIVATOR 90 100 LIQ		
AMS 100 DRY		
SCORE 100 LIQ		
SUPERCHARGE 100 LIQ		

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Control of Italian (annual) Ryegrass in Winter Wheat.

Project Code: 01-WF-SEN-190 Location: BELLEVILLE RESEARCH CENTER

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
Trial Status: Established **Initiation Date:** 10-4-99

Objective:
Evaluate conventional and experimental herbicides for weed control in winter wheat.

Weed Code	Common Name	Scientific Name
1.	LOLMU ryegrass, Italian	Lolium multiflorum Lam.

Crop 1: TRZAW wheat, winter **Variety:** P25R26
Planting Method: Seeded **Planting Date:** 10-20-00
Rate: 90 lb/A **Depth:** 1.0 IN
Row Spacing: 7.5 IN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 28 FT **Reps:** 4
Tillage Type: Conventional-Till **Study Design:** Randomized complete block
Previous Crop, Year: GLXMA, 2000
Field Prep./Maintenance: N 110 LB/A, P2O5 0 LB/A, K2O 0 LB/A

% OM: 1.7 **pH:** 6.3 **CEC:** 11
Texture: Silt loam **Fert. Level:** P1: 46 LB/A, K: 162 LB/A

APPLICATION DESCRIPTION

	A	B	C
Application Date:	10-20-00	11-22-00	3-23-01
Time of Day:	16:00	10:00	10:30
Application Method:	Spray	Spray	Spray
Application Timing:	PRE	FALL	SPRING
Applic. Placement:	BROSOI	BROSOI	BROSOI
Wind Velocity, Unit:	3-4 MPH	4-5 MPH	4-5 MPH
Dew Presence (Y/N):	N	N	
Soil Moisture:	NORMAL	BELNOR	NORMAL
% Cloud Cover:	0	0	0

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	TRZAW NA	TRZAW F2-3	TRZAW F4-5
Height, Unit:	NA NA	3-4 IN	4-5 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code:	LOLMU	LOLMU	LOLMU
Stage(leaves):	NA	NA	NA

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:	8003	8002	8002
Boom Length, Unit:	7.5 FT	7.5 FT	7.5 FT
Incorporation Equip.:	NA		
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

NOTES: WHEAT HARVESTED 6-18-01, 7 ROWS X 25 FT. SOYBEAN HARVESTED 10-26-01, 2 ROWS X 25 FT.
LOLMU was not present at application.

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	TRZAW Test wt. lb/bu 6-18-01	TRZAW Yield bu/A 6-18-01	TRZAW Injury Percent 14 DAT	TRZAW Injury Percent 28 DAT	TRZAW Injury Percent 4-6-01 SPRING	LOLMU Control Percent 5-15-01	GLXMA Yield bu/A 10-26-01
1	HANDWEED									57.2	77	0		0	99	46
2	NONTREATED									55.4	73	0		0	0	46
3	AXIOM	68	WG	0.425	LB A/A	10.0	OZ/A	PRE	A	56.1	84	0		0	99	44
4	AXIOM	68	WG	0.425	LB A/A	10.0	OZ/A	FALL	B	56.3	84	0		0	99	47
4	EVEREST	70	WG	0.027	LB A/A	0.62	OZ/A	FALL	B							
4	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	FALL	B							
5	EVEREST	70	WG	0.027	LB A/A	0.62	OZ/A	FALL	B	56.0	82	3		0	95	49
5	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	FALL	B							
6	MAVERICK	75	WG	0.03125	LB A/A	0.67	OZ/A	FALL	B	56.2	85	3		0	91	47
6	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	FALL	B							
7	ACHIEVE	40	DG	0.24	LB A/A	9.6	OZ/A	FALL	B	56.6	82	1		0	99	46
7	SUPERCHARGE	100	LIQ	0.5	% V/V	0.5	%V/V	FALL	B							
7	AMS	100	DRY	1.8	% W/W	15	LB/100 GAL	FALL	B							
8	HOELON	3	EC	1.0	LB A/A	2.67	PT/A	FALL	B	56.3	83	3		0	99	48
8	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	FALL	B							
9	DISCOVER	2	EC	0.0625	LB A/A	4.0	OZ/A	FALL	B	56.7	83	1		0	99	46
9	SCORE	100	LIQ	1.0	% V/V	1.0	%V/V	FALL	B							
10	HARMONY EXTRA	75	WG	0.0235	LB A/A	0.5	OZ/A	FALL	B	55.0	79	0		0	18	48
10	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	FALL	B							
11	EVEREST	70	WG	0.027	LB A/A	0.62	OZ/A	FALL	B	55.9	83	3		0	91	50
11	HARMONY EXTRA	75	WG	0.0235	LB A/A	0.5	OZ/A	FALL	B							
11	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	FALL	B							
12	MAVERICK	75	WG	0.03125	LB A/A	0.67	OZ/A	FALL	B	56.4	82	1		0	90	44
12	HARMONY EXTRA	75	WG	0.0235	LB A/A	0.5	OZ/A	FALL	B							
12	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	FALL	B							
13	ACHIEVE	40	DG	0.24	LB A/A	9.6	OZ/A	FALL	B	54.9	76	2		0	20	47
13	HARMONY EXTRA	75	WG	0.0235	LB A/A	0.5	OZ/A	FALL	B							
13	SUPERCHARGE	100	LIQ	0.5	% V/V	0.5	%V/V	FALL	B							
13	AMS	100	DRY	1.8	% W/W	15	LB/100 GAL	FALL	B							
14	HOELON	3	EC	1.0	LB A/A	2.67	PT/A	FALL	B	55.3	84	1		0	99	48
14	HARMONY EXTRA	75	WG	0.0235	LB A/A	0.5	OZ/A	FALL	B							
14	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	FALL	B							
15	DISCOVER	2	EC	0.0625	LB A/A	4.0	OZ/A	FALL	B	56.1	84	1		0	99	49
15	HARMONY EXTRA	75	WG	0.0235	LB A/A	0.5	OZ/A	FALL	B							
15	SCORE	100	LIQ	1.0	% V/V	1.0	%V/V	FALL	B							
16	EVEREST	70	WG	0.027	LB A/A	0.62	OZ/A	FALL	B	55.9	80	0		0	97	48
16	SENCOR	75	WG	0.094	LB A/A	2.0	OZ/A	FALL	B							
16	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	FALL	B							

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	TRZAW Test wt. lb/bu 6-18-01	TRZAW Yield bu/A 6-18-01	TRZAW Injury Percent 14 DAT	TRZAW Injury Percent 28 DAT	TRZAW Injury Percent 4-6-01 SPRING	LOLMU Control Percent 5-15-01	GLXMA Yield bu/A 10-26-01
17	EVEREST	70	WG	0.027	LB A/A	0.62	OZ/A	SPRING	C	57.1	86	23	3	3	99	47
17	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	SPRING	C							
18	MAVERICK	75	WG	0.03125	LB A/A	0.67	OZ/A	SPRING	C	56.7	79	18	5	5	96	49
18	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	SPRING	C							
19	ACHIEVE	40	DG	0.24	LB A/A	9.6	OZ/A	SPRING	C	55.5	78	16	4	4	97	50
19	SUPERCHARGE	100	LIQ	0.5	% V/V	0.5	%V/V	SPRING	C							
19	AMS	100	DRY	1.8	% W/W	15	LB/100 GAL	SPRING	C							
20	HOELON	3	EC	1.0	LB A/A	2.67	PT/A	SPRING	C	55.6	76	25	8	8	99	48
20	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	SPRING	C							
21	DISCOVER	2	EC	0.0625	LB A/A	4.0	OZ/A	SPRING	C	56.0	84	26	5	5	99	46
21	SCORE	100	LIQ	1.0	% V/V	1.0	%V/V	SPRING	C							
22	HARMONY EXTRA	75	WG	0.0235	LB A/A	0.5	OZ/A	SPRING	C	55.5	79	33	8	8	40	47
22	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	SPRING	C							
23	EVEREST	70	WG	0.027	LB A/A	0.62	OZ/A	SPRING	C	56.8	86	45	10	10	99	46
23	HARMONY EXTRA	75	WG	0.0235	LB A/A	0.5	OZ/A	SPRING	C							
23	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	SPRING	C							
24	MAVERICK	75	WG	0.03125	LB A/A	0.67	OZ/A	SPRING	C	56.7	86	23	4	4	97	46
24	HARMONY EXTRA	75	WG	0.0235	LB A/A	0.5	OZ/A	SPRING	C							
24	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	SPRING	C							
25	ACHIEVE	40	DG	0.24	LB A/A	9.6	OZ/A	SPRING	C	55.9	78	29	6	6	35	46
25	HARMONY EXTRA	75	WG	0.0235	LB A/A	0.5	OZ/A	SPRING	C							
25	SUPERCHARGE	100	LIQ	0.5	% V/V	0.5	%V/V	SPRING	C							
25	AMS	100	DRY	1.8	% W/W	15	LB/100 GAL	SPRING	C							
26	HOELON	3	EC	1.0	LB A/A	2.67	PT/A	SPRING	C	56.4	83	8	3	3	99	48
26	HARMONY EXTRA	75	WG	0.0235	LB A/A	0.5	OZ/A	SPRING	C							
26	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	SPRING	C							
27	DISCOVER	2	EC	0.0625	LB A/A	4.0	OZ/A	SPRING	C	56.3	84	3	1	1	99	48
27	HARMONY EXTRA	75	WG	0.0235	LB A/A	0.5	OZ/A	SPRING	C							
27	SCORE	100	LIQ	1.0	% V/V	1.0	%V/V	SPRING	C							
28	EVEREST	70	WG	0.027	LB A/A	0.62	OZ/A	SPRING	C	55.7	79	18	1	1	96	47
28	SENCOR	75	WG	0.094	LB A/A	2.0	OZ/A	SPRING	C							
28	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	SPRING	C							
29	HOELON	3	EC	1.0	LB A/A	2.67	PT/A	FALL	B	55.9	82	0	0	0	99	45
29	HARMONY GT	75	WG	0.01875	LB A/A	0.4	OZ/A	FALL	B							
29	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	FALL	B							
30	ACHIEVE	40	DG	0.24	LB A/A	9.6	OZ/A	FALL	B	55.4	75	0	0	0	70	49
30	HARMONY GT	75	WG	0.01875	LB A/A	0.4	OZ/A	FALL	B							
30	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	%V/V	FALL	B							
LSD (P=.05)										1.39	6.6	8.5	6.4	5.3	10.2	6.2

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code							
Weed Code															LOLMU	
Crop Code										TRZAW	TRZAW	TRZAW	TRZAW	TRZAW		GLXMA
Rating Data Type										Test wt.	Yield	Injury	Injury	Injury	Control	Yield
Rating Unit										lb/bu	bu/A	Percent	Percent	Percent	Percent	bu/A
Rating Date										6-18-01	6-18-01			4-6-01	5-15-01	10-26-01
Trt-Eval Interval												14 DAT	28 DAT	SPRING		
	Replicate F									8.591	4.538	0.131	0.322	0.209	0.866	0.117
	Replicate Prob(F)									0.0001	0.0053	0.9411	0.8093	0.8896	0.4624	0.9501
	Treatment F									1.379	2.396	17.465	1.848	2.318	64.910	0.467
	Treatment Prob(F)									0.1287	0.0010	0.0001	0.0694	0.0036	0.0001	0.9887

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Project Code: 01-WF-SEN-190 Location: BELLEVILLE RESEARCH CENTER

Trial Comments

1. Protocol: Bayer/SIU/AH.
2. Ratings: CI and WC at 14 DAP for PRE application, CI and WC at 14 and 28 DA post applications (rate all plots at 28 DA SPRING application), wheat yield, then soybean injury at 14, 28 and 56 DAP, and soybean yield. Observe any residual weed control from wheat herbicides in soybean.
3. FALL application timing is 3-4 leaf ryegrass.
4. SPRING application timing is after "green-up" of wheat and ryegrass.
5. 14 days after FALL and SPRING applications was on 12-5-00 and 4-6-01, respectively.
6. At 28 days after FALL application, not possible to make ratings due to snow cover.
7. 28 days after SPRING application was on 4-20-01. At 28 days after SPRING application, there was no LOLMU emergence.
8. Weed control rating on 5-15-01 was 207, 174 and 53 days after PRE, FALL and SPRING applications, respectively.
9. Harvested 6-18-01, (7) 7.5 inch rows x 25 ft.