

Control of Italian (annual) Ryegrass in Winter Wheat.

00-WF-SEN-190

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

SUMMARY: Fall applications of herbicides resulted in little to no injury while spring applications had injury up to 16%. Acceptable control of Italian ryegrass was observed with spring and fall applications of Discover, Hoelon, Axiom, Achieve, and spring applications of Maverick. Tank mixing Achieve with Harmony Extra caused weed control to decrease from 88 to 4% in the fall and from 99 to 78% in the spring. Duration of weed competition did not seem to be a major factor in yield as similar yield was observed from fall and spring applications.

No soybean injury resulted from wheat herbicide applications. In addition, there were no differences in soybean yield. Therefore, wheat herbicide carryover to double crop soybeans was not an issue in this study.

HERBICIDES	WEEDS	CROP
ACHIEVE 40 DG AXIOM 68 WG DISCOVER 2 EC EVEREST 70 WG HARMONY EXTRA 75 WG HOELON 3 EC MAVERICK 75 WG SENCOR 75 WG SCORE 100 LIQ SUPERCHARGE 100 LIQ	RYEGRASS, ITALIAN	WHEAT, WINTER

Bryan Young and Aaron Hoskins

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Control of Italian (annual) Ryegrass in Winter Wheat.

Project Code: 00-WF-SEN-190 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

Weed Code 1. LOLMU	Common Name RYEGRASS, ITALIAN	Scientific Name LOLIUM MULTIFLORUM LAM.		
Crop 1: Planting Method: Rate: Row Spacing:	TRZAW WHEAT, WINTER SEEDED 90 LB/A 7.5 IN	Variety: Planting Date: Depth:	PIONEER 25R26 10-14-99 1.0 IN	
Plot Width, Unit: Tillage Type: Previous Crop, Year:	10 FT NO-TILL GLXMA, 1999	Plot Length, Unit: Study Design:	28 FT RCB	Reps: 4
Texture:	SILT LOAM	% OM: 1.8 P ₁ 59 LB/A,	pH: 6.5 K 181 LB/A	CEC: 9

APPLICATION DESCRIPTION

	A	B	C
Application Date:	Oct-15-99	Nov-16-99	Mar-14-00
Time of Day:	9:00	10:00	12:30
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	FALL	SPRING
Applic. Placement:	BROSOI	BROSOI	BROSOI
Wind Velocity, Unit:	3 MPH	3-4 MPH	5-6 MPH
Soil Moisture:	DRY	DRY	MOIST

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	TRZAW PRE	TRZAW F 2	TRZAW F 5
Height, Unit:	0 IN	IN	6-8 IN

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	LOLMU
Stage(leaves):	1-2
Height(inches):	2-3
Density:	LOW

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	CO ₂ SPRAY	CO ₂ SPRAY	CO ₂ SPRAY
Operating Pressure:	40 PSI	40 PSI	40 PSI
Nozzle Type:	FLAT FAN	FLAT FAN	FLAT FAN
Nozzle Size:	8004	8004	8004
Boom Length, Unit:	7.5 FT	7.5 FT	7.5 FT
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

NOTES:

Wheat was harvested Jun-23-00, 4.375 ft by 27 ft.
Soybean was harvested Oct-12-00, (2) 30 inch rows by 25 ft.

TABLE. CONTROL OF ITALIAN (ANNUAL) RYEGRASS IN WINTER WHEAT. PROJECT CODE:00-WF-SEN-190

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	TRZAW INJURY			LOLMU		TRZAW, JUNE 23, 2000			GLXMA YIELD BU/A	
							DAT		APRIL	CONTROL	SEED HEADS	MOISTURE	TEST			
							14	28	11	MAY 5	MAY 31		WEIGHT	YIELD		
1 EVEREST	70 WG	0.027	LB A/A	0.62	OZ/A	FALL	B	1	0	0	83	7	12.0	53.3	79	35
1 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V	FALL	B									
2 MAVERICK	75 WG	0.03125	LB A/A	0.67	OZ/A	FALL	B	5	0	0	65	17	12.4	53.5	75	34
2 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V	FALL	B									
3 ACHIEVE	40 DG	0.24	LB A/A	9.6	OZ/A	FALL	B	0	0	0	88	4	11.9	53.7	76	37
3 SUPERCHARGE	100 LIQ	0.5	% V/V	0.5	%V/V	FALL	B									
3 AMS	100 DRY	1.8	% W/W	15.0	LB/100 GAL	FALL	B									
4 HOELON	3 EC	1.0	LB A/A	2.67	PT/A	FALL	B	4	0	0	97	0	12.1	53.9	79	38
4 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V	FALL	B									
5 DISCOVER	2 EC	0.0625	LB A/A	4.0	OZ/A	FALL	B	0	0	0	98	0	12.1	53.6	76	36
5 SCORE	100 LIQ	1.0	% V/V	1.0	%V/V	FALL	B									
6 HARMONY EXTRA	75 WG	0.0235	LB A/A	0.5	OZ/A	FALL	B	1	0	0	5	31	12.1	53.4	73	37
6 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V	FALL	B									
7 EVEREST	70 WG	0.027	LB A/A	0.62	OZ/A	FALL	B	3	1	0	84	5	12.1	53.5	78	37
7 HARMONY EXTRA	75 WG	0.0235	LB A/A	0.5	OZ/A	FALL	B									
7 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V	FALL	B									
8 MAVERICK	75 WG	0.03125	LB A/A	0.67	OZ/A	FALL	B	1	1	0	55	12	12.0	53.3	77	37
8 HARMONY EXTRA	75 WG	0.0235	LB A/A	0.5	OZ/A	FALL	B									
8 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V	FALL	B									
9 ACHIEVE	40 DG	0.24	LB A/A	9.6	OZ/A	FALL	B	4	0	0	4	30	11.8	53.2	71	37
9 HARMONY EXTRA	75 WG	0.0235	LB A/A	0.5	OZ/A	FALL	B									
9 SUPERCHARGE	100 LIQ	0.5	% V/V	0.5	%V/V	FALL	B									
9 AMS	100 DRY	1.8	% W/W	15.0	LB/100 GAL	FALL	B									
10 HOELON	3 EC	1.0	LB A/A	2.67	PT/A	FALL	B	3	0	0	97	0	12.1	54.0	78	37
10 HARMONY EXTRA	75 WG	0.0235	LB A/A	0.5	OZ/A	FALL	B									
10 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V	FALL	B									
11 DISCOVER	2 EC	0.0625	LB A/A	4.0	OZ/A	FALL	B	1	1	0	89	6	12.1	53.9	82	35
11 HARMONY EXTRA	75 WG	0.0235	LB A/A	0.5	OZ/A	FALL	B									
11 SCORE	100 LIQ	1.0	% V/V	1.0	%V/V	FALL	B									
12 EVEREST	70 WG	0.027	LB A/A	0.62	OZ/A	FALL	B	1	1	0	43	28	12.2	53.5	74	40
12 SENCOR	75 WG	0.094	LB A/A	2.0	OZ/A	FALL	B									
12 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V	FALL	B									
13 EVEREST	70 WG	0.027	LB A/A	0.62	OZ/A	SPRING	C	16	0	0	78	16	11.9	53.0	70	36
13 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V	SPRING	C									
14 MAVERICK	75 WG	0.03125	LB A/A	0.67	OZ/A	SPRING	C	3	0	0	94	2	12.0	54.0	74	36
14 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V	SPRING	C									
15 ACHIEVE	40 DG	0.24	LB A/A	9.6	OZ/A	SPRING	C	5	0	0	99	1	12.1	54.1	78	40
15 SUPERCHARGE	100 LIQ	0.5	% V/V	0.5	%V/V	SPRING	C									
15 AMS	100 DRY	1.8	% W/W	15.0	LB/100 GAL	SPRING	C									
16 HOELON	3 EC	1.0	LB A/A	2.67	PT/A	SPRING	C	5	0	0	99	4	11.9	53.7	79	37
16 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5	%V/V	SPRING	C									

(CONTINUED)

TABLE. CONTROL OF ITALIAN (ANNUAL) RYEGRASS IN WINTER WHEAT. PROJECT CODE:00-WF-SEN-190 (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	TRZAW INJURY			LOLMU		TRZAW, JUNE 23, 2000			GLXMA YIELD
							DAT		APRIL	CONTROL	SEED HEADS	MOISTURE	TEST		
							14	28	11	MAY 5	MAY 31		WEIGHT	YIELD	
17 DISCOVER	2 EC	0.0625	LB A/A	4.0 OZ/A	SPRING	C	6	0	0	99	0	12.3	53.4	80	37
17 SCORE	100 LIQ	1.0	% V/V	1.0 %V/V	SPRING	C									
18 HARMONY EXTRA	75 WG	0.0235	LB A/A	0.5 OZ/A	SPRING	C	3	0	0	8	34	12.0	53.3	67	38
18 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5 %V/V	SPRING	C									
19 EVEREST	70 WG	0.027	LB A/A	0.62 OZ/A	SPRING	C	13	0	0	94	8	12.4	53.5	76	39
19 HARMONY EXTRA	75 WG	0.0235	LB A/A	0.5 OZ/A	SPRING	C									
19 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5 %V/V	SPRING	C									
20 MAVERICK	75 WG	0.03125	LB A/A	0.67 OZ/A	SPRING	C	8	0	0	95	9	11.9	53.7	76	37
20 HARMONY EXTRA	75 WG	0.0235	LB A/A	0.5 OZ/A	SPRING	C									
20 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5 %V/V	SPRING	C									
21 ACHIEVE	40 DG	0.24	LB A/A	9.6 OZ/A	SPRING	C	10	0	0	78	5	12.3	53.8	79	40
21 HARMONY EXTRA	75 WG	0.0235	LB A/A	0.5 OZ/A	SPRING	C									
21 SUPERCHARGE	100 LIQ	0.5	% V/V	0.5 %V/V	SPRING	C									
21 AMS	100 DRY	1.8	% W/W	15.0 LB/100 GAL	SPRING	C									
22 HOELON	3 EC	1.0	LB A/A	2.67 PT/A	SPRING	C	10	0	0	98	1	12.6	53.9	82	38
22 HARMONY EXTRA	75 WG	0.0235	LB A/A	0.5 OZ/A	SPRING	C									
22 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5 %V/V	SPRING	C									
23 DISCOVER	2 EC	0.0625	LB A/A	4.0 OZ/A	SPRING	C	6	0	0	99	1	12.1	54.0	77	38
23 HARMONY EXTRA	75 WG	0.0235	LB A/A	0.5 OZ/A	SPRING	C									
23 SCORE	100 LIQ	1.0	% V/V	1.0 %V/V	SPRING	C									
24 EVEREST	70 WG	0.027	LB A/A	0.62 OZ/A	SPRING	C	10	0	0	16	23	12.3	52.9	64	38
24 SENCOR	75 WG	0.094	LB A/A	2.0 OZ/A	SPRING	C									
24 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5 %V/V	SPRING	C									
25 HANDWEED							0	0	0	0	0	12.4	53.5	74	41
26 NONTREATED							0	0	0	0	48	11.7	53.4	63	36
27 AXIOM	68 WG	0.425	LB A/A	10.0 OZ/A	PRE	A	8	0	0	96	1	12.1	54.2	82	39
28 AXIOM	68 WG	0.425	LB A/A	10.0 OZ/A	FALL	B	0	0	0	97	1	11.6	54.0	73	40
28 EVEREST	70 WG	0.027	LB A/A	0.62 OZ/A	FALL	B									
28 ACTIVATOR 90	100 LIQ	0.5	% V/V	0.5 %V/V	FALL	B									
LSD							4	1	0	11	12	0.48	0.7	7	4
P							0.01	0.7	1.0	0.01	0.01	0.04	0.03	0.01	0.25

64

1. PROTOCOL: BAYER/SIU/AH.
2. FALL APPLICATION TIMING IS 3-4 LEAF RYEGRASS.
3. SPRING APPLICATION TIMING IS AFTER "GREEN-UP" OF WHEAT AND RYEGRASS.
4. RATING DATES:
 14 AND 28 DAYS AFTER FALL APPLICATION ON NOV-30-99 AND DEC-14-99, RESPECTIVELY.
 14 AND 28 DAYS AFTER SPRING APPLICATION ON MAR-28-00 AND APR-11-00, RESPECTIVELY.
 MAY 5, 2000 WAS 171 AND 52 DAYS AFTER FALL AND SPRING APPLICATION, RESPECTIVELY.