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Wild radish and ryegrass response to Axiom, mesosulfuron, Express + MCPA & 2,4-D

Trial ID: wheat4-03
Location: Ponder farm

Study Dir.:
Investigator: Stanley Culpepper

GENERAL TRIAL INFORMATION

Study Director: Stanley Culpepper **Title:** Ext. Agronomist
Affiliation: University of Georgia
Postal Code: 31794
Investigator: Stanley Culpepper **Title:** Ext. Agronomist
Affiliation: University of Georgia
Postal Code: 31794

TRIAL LOCATION

City: TyTy **Trial Status:** 31794
State/Prov.: GA **Trial Reliability:** fair/good
Country: USA **Initiation Date:** Nov-29-02

Conducted Under GLP (Y/N): N **Conducted Under GEP (Y/N):** N

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	LOLSS	annual ryegrass	
2.	RAPRA	wild radish	

Crop 1: TRZAW WHEAT, WINTER **Variety:** Pioneer 26R38
Planting Date: Nov-28-02 **Planting Method:** drilled
Rate: 6 per foot **Depth:** 0.5 in
Row Spacing: 7 inch **Seed Bed:** flat
Soil Moisture: moist **Emergence Date:** Dec-06-02

SITE AND DESIGN

Plot Width, Unit: 6 FT **Plot Length, Unit:** 25 FT **Reps:** 4
Site Type: research station
Tillage Type: conventional **Study Design:** RANDOMIZED COMPLETE BLOCK

SOIL DESCRIPTION

% Sand: 94 **% OM:** 1.3 **Texture:** sand
% Silt: 2 **pH:** 5.4 **Soil Name:** Tifton sandy loam
% Clay: 4

APPLICATION DESCRIPTION

	A	B	C
Application Date:	Dec-17-02	Dec-30-02	Feb-09-03
Time of Day:	11 am	2 pm	11 am
Application Method:	broadcast	broadcast	broadcast
Application Timing:	spike	2lfLOLSS	2TLOLSS
Applic. Placement:	overtop	overtop	overtop
Air Temp., Unit:	72 F	64 F	60 F
% Relative Humidity:	52	49	45
Wind Velocity, Unit:	2 mph	1 mph	2 mph
Dew Presence (Y/N):	n	n	n
Soil Temp., Unit:	68 F	64 F	59 F
Soil Moisture:	moist	moist	moist
% Cloud Cover:	0	0	80

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	TRZAW spike	TRZAW 2lfLOLSS	TRZAW 2TLOLSS
Stage Scale:	spike	1-2leaf	1-2 tiller
Height, Unit:	0.5 inch	2 inch	3.5 inch

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WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	LOLSS spike	LOLSS 21fLLOLSS	LLOLSS 2TLOLSS
Stage Scale:	spike<.5"	1-21f,2"	1-2T,4"
Density, Unit:	see comme	.	.
Weed 2 Code, Stage:	RAPRA spike	RAPRA 21fLLOLSS	RAPRA 2TLOLSS
Stage Scale:	<0.5"	c-31f,<3"	2-5"
Density, Unit:	18 ydsq	25 ydsq	25 ydsq

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	backpack	backpack	backpack
Operating Pressure:	22	22	22
Nozzle Type:	flat fan	flat fan	flat fan
Nozzle Size:	11002	11002	11002
Nozzle Spacing, Unit:	18 inch	18 inch	18 inch
Boom Length, Unit:	4.5 feet	4.5 feet	4.5 feet
Boom Height, Unit:	15 inch	15 inch	15 inch
Ground Speed, Unit:	3 mph	3 mph	3 mph
Carrier:	water	water	water
Spray Volume, Unit:	14.8 GPA	14.8 GPA	14.8 GPA
Propellant:	CO2	CO2	CO2
Tank Mix (Y/N):	Y	Y	Y

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Trial ID: wheat4-03

Study Dir.:

Location: Ponder farm

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Weed Code			wheat	wheat	wheat	wheat	wheat		LOLSS	LOLSS
Crop Code			injury	injury	injury	injury	injury		control	control
Rating Data Type			percent	percent	percent	percent	percent		percent	percent
Rating Unit										
Rating Date			Dec-30-02	Jan-05-03	Feb-09-03	Feb-15-03	Mar-05-03	Apr-12-03	Dec-30-02	Jan-05-03
Trt-Eval Interval			13 DA-A	19 DA-A	54 DA-A	60 DA-A	78 DA-A	116 DA-A	13 DA-A	19 DA-A
Trt	Treatment	Rate	1	2	3	4	5	6	7	8
No.	Name	Unit								
1	non-treated		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Axiom	6 oz/a	1.3	0.0	6.5	6.0	12.5	0.0	53.8	60.0
3	Axiom	8 oz/a	2.5	2.5	10.3	9.5	2.5	0.0	70.8	76.5
4	Axiom	10 oz/a	3.3	0.0	12.8	12.0	12.5	0.0	84.8	80.8
5	AE F130060 01 Destiny UAN (30%)	18.22 g ai/a 1.5 pt/a 3.8 pt/a	0.0	2.5	1.0	1.0	0.0	0.0	0.0	0.0
6	AE F130060 01 NIS	18.22 g ai/a 0.25 % v/v	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Hoelon	1.33 pt/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	AE F130060 01 Destiny UAN (30%)	18.22 g ai/a 1.5 pt/a 3.8 pt/a	0.0	0.0	0.0	0.0	8.3	0.0	0.0	0.0
9	AE F130060 01 NIS	18.22 g ai/a 0.25 % v/v	0.0	0.0	0.0	0.0	6.8	0.0	0.0	0.0
10	Hoelon	2.5 pt/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	2,4-D	1.25 pt/a	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0
12	MCPA Express NIS	0.75 pt/a 0.25 oz/a 0.125 % v/v	0.0	0.0	0.0	2.5	5.0	0.0	0.0	0.0
LSD (P=.05)			2.10	2.99	6.09	10.11	13.23	0.00	3.41	2.51
Standard Deviation			1.45	2.07	4.22	7.00	9.16	0.00	2.36	1.74
CV			248.78	497.27	165.95	271.04	217.64	0.0	13.52	9.59
Bartlett's X2			0.5	0.0	6.452	12.71	11.418	0.0	0.475	0.984
P(Bartlett's X2)			0.779	0.001*	0.092	0.013*	0.076	.	0.788	0.321

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

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Weed Code		LOLSS	LOLSS	LOLSS	LOLSS	RAPRA	RAPRA	RAPRA	RAPRA		
Crop Code											
Rating Data Type		control	control	control	control	control	control	control	control		
Rating Unit		percent	percent	percent	percent	percent	percent	percent	percent		
Rating Date		Feb-09-03	Feb-15-03	Mar-05-03	Apr-12-03	Dec-30-02	Jan-05-03	Feb-09-03	Feb-15-03		
Trt-Eval Interval		54 DA-A	60 DA-A	78 DA-A	116 DA-A	13 DA-A	19 DA-A	54 DA-A	60 DA-A		
Trt No.	Treatment Name	Rate	Unit	9	10	11	12	13	14	15	16
1	non-treated			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Axiom	6 oz/a		95.8	99.0	99.0	100.0	100.0	100.0	99.0	99.0
3	Axiom	8 oz/a		97.5	99.0	99.0	100.0	100.0	100.0	99.0	99.0
4	Axiom	10 oz/a		96.3	99.0	99.0	100.0	100.0	100.0	99.0	99.0
5	AE F130060 01 Destiny UAN (30%)	18.22 1.5 3.8	g ai/a pt/a pt/a	85.5	93.3	99.5	99.8	0.0	0.0	99.0	99.0
6	AE F130060 01 NIS	18.22 0.25	g ai/a % v/v	76.0	82.0	90.5	90.0	0.0	0.0	99.0	99.0
7	Hoelon	1.33	pt/a	90.3	94.5	98.3	100.0	0.0	0.0	0.0	6.3
8	AE F130060 01 Destiny UAN (30%)	18.22 1.5 3.8	g ai/a pt/a pt/a	0.0	0.0	79.8	70.3	0.0	0.0	0.0	0.0
9	AE F130060 01 NIS	18.22 0.25	g ai/a % v/v	0.0	0.0	41.3	26.0	0.0	0.0	0.0	0.0
10	Hoelon	2.5	pt/a	0.0	0.0	79.0	88.0	0.0	0.0	0.0	0.0
11	2,4-D	1.25	pt/a	0.0	0.0	14.3	0.0	0.0	0.0	0.0	11.3
12	MCPA Express NIS	0.75 0.25 0.125	pt/a oz/a % v/v	0.0	0.0	17.5	0.0	0.0	0.0	0.0	11.3
LSD (P=.05)				3.93	2.43	8.87	6.76	0.00	0.00	0.00	5.34
Standard Deviation				2.72	1.68	6.14	4.69	0.00	0.00	0.00	3.69
CV				6.04	3.56	9.03	7.26	0.0	0.0	0.0	8.47
Bartlett's X2				3.22	7.946	31.84	24.595	0.0	0.0	0.0	1.109
P(Bartlett's X2)				0.666	0.019*	0.001*	0.001*	.	.	.	0.574

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

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Weed Code			RAPRA	RAPRA
Crop Code				
Rating Data Type			control	control
Rating Unit			percent	percent
Rating Date			Mar-05-03	Apr-12-03
Trt-Eval Interval			78 DA-A	116 DA-A
Trt No.	Treatment Name	Rate	17	18
1	non-treated		0.0	0.0
2	Axiom	6 oz/a	97.5	98.8
3	Axiom	8 oz/a	95.5	99.8
4	Axiom	10 oz/a	97.5	98.0
5	AE F130060 01 Destiny UAN (30%)	18.22 g ai/a 1.5 pt/a 3.8 pt/a	99.5	99.8
6	AE F130060 01 NIS	18.22 g ai/a 0.25 % v/v	98.3	98.0
7	Hoelon	1.33 pt/a	0.0	0.0
8	AE F130060 01 Destiny UAN (30%)	18.22 g ai/a 1.5 pt/a 3.8 pt/a	89.8	93.0
9	AE F130060 01 NIS	18.22 g ai/a 0.25 % v/v	68.8	75.0
10	Hoelon	2.5 pt/a	0.0	10.0
11	2,4-D	1.25 pt/a	81.3	98.8
12	MCPA Express NIS	0.75 pt/a 0.25 oz/a 0.125 % v/v	88.0	100.0
LSD (P=.05)			5.88	10.85
Standard Deviation			4.07	7.52
CV			5.99	10.35
Bartlett's X2			17.382	47.214
P(Bartlett's X2)			0.026*	0.001*

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

Trial Comments

GENERAL COMMENTS: Annual ryegrass was seeded across the back 6 foot of each plot with the grain drill to make sure some ryegrass was present. Wild radish was a natural population. The wheat was not sidedressed as it was used as a cover crop for cotton. A shower occurred 2 hours after the 2TLOLSS application was applied.

OBJECTIVE: 1) Compare Axiom and Osprey for the control of annual ryegrass and wild radish control. 2) Compare 2,4-D and Express + MCPA for the control of wild radish.

WHEAT INJURY:

- 1) Minor injury (stunting) was detected with Axiom applied at spike.
- 2) No other injury was of interest.

RYEGRASS CONTROL:

- 1) At 13 and 19 DAT, a rate effect from Axiom was clearly evident. However, by late-season control was excellent with all rates.
- 2) Osprey applied to 2 leaf ryegrass provided excellent control. The NIS adjuvant tended to be less effective than the Destiny plus UAN adjuvant system.
- 3) Hoelon applied to 2 leaf ryegrass provided excellent control.
- 4) Osprey applied to 2 tiller ryegrass did not provided acceptable control. This is the first application in three years that has not provided excellent control. Either the rainfall 2 hours after application or this issue with sidedressing (this trial not sidedressed) most likely occurred.
- 5) Regardless of what happened with the 2 tiller ryegrass application, Osprey plus Destiny and UAN was 44% more effective than Osprey plus NIS.
- 6) Hoelon (2.5 pt) was more effective than Osprey at the 2TLOLSS application.

RADISH CONTROL:

- 1) Complete or nearly control was noted with Axiom.
- 2) Osprey applied to 3 inch or smaller radish provided at least 98% control, regardless of adjuvant.
- 3) Osprey applied to 5 inch or smaller radish provided 75 to 93% control. The UAN + Destiny was 18% more effective than NIS.

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4) 2,4-D at 1.25 pt or Express at 0.25 oz plus MCPA at 0.75 pt provided excellent control of 5 inch or smaller radish.

CONCLUSIONS:

- 1) Axiom applied as recommended followed by rainfall or irrigation will provide excellent ryegrass and radish control.
- 2) Osprey provided excellent control of 2 leaf ryegrass.
- 3) Osprey was less effective on 2 T ryegrass than in previous trials, this is likely do to rainfall 2 hr after application or not sidedressing the trial.
- 4) Osprey provided excellent control of small radish.
- 5) Osprey was more effective on 5 inch radish than 2 tiller ryegrass when followed by rainfall 2 hr later.
- 6) Why is Culpepper killing radish but Bayer says this product is not effective on radish??????????????