

University of Georgia

Determine efficacy of pyroxsulam on ryegrass and wheat.

Trial ID: Wheat1-08 (NA07C2B038)

Study Dir.: Amy Davis

Location: Plains

Investigator: Stanley Culpepper

Reps: 4

Plots: 6 by 30 feet

Spray vol: 14.8 gal/ac

Mix size: 1.5 liters (min .92602)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Grow Unit	Stg	Appl Code	Amt Product to Measure	Plot No. By Rep			
										1	2	3	4
1	PYROXSULAM AGRI-DEX COC	75 g ai/kg		WG L	5.3 1.25	G A/A % V/V	2fLLOLMU 2fLLOLMU	A A	1.892 g/mx 18.75 ml/mx	101	214	305	413
2	PYROXSULAM AGRI-DEX COC	75 g ai/kg		WG L	6.4 1.25	G A/A % V/V	2fLLOLMU 2fLLOLMU	A A	2.285 g/mx 18.75 ml/mx	102	208	302	414
3	PYROXSULAM AGRI-DEX COC	75 g ai/kg		WG L	7.5 1.25	G A/A % V/V	2fLLOLMU 2fLLOLMU	A A	2.677 g/mx 18.75 ml/mx	103	212	304	411
4	OSPREY UAN NIS	4.5 g ai/kg		WG L L	4.75 1.5 0.25	OZ/A QT/A % V/V	2fLLOLMU 2fLLOLMU 2fLLOLMU	A A A	3.605 g/mx 38.0 ml/mx 3.75 ml/mx	104	211	307	404
5	AXIAL XL ADIGOR	0.83 g ai/l		EC L	8.2 9.6	OZ/A OZ/A	2fLLOLMU 2fLLOLMU	A A	6.493 ml/mx 7.601 ml/mx	105	206	313	409
6	HOELON	3 g ai/l		EC	2	PT/A	2fLLOLMU	A	25.34 ml/mx	106	205	311	412
7	PYROXSULAM PENDIMAX AGRI-DEX COC	75 g ai/kg 3 g ai/l		WG EC L	7.5 42 1.25	G A/A OZ/A % V/V	2fLLOLMU 2fLLOLMU 2fLLOLMU	A A A	2.677 g/mx 33.26 ml/mx 18.75 ml/mx	107	202	314	407
8	UNTREATED						2fLLOLMU	A		108	207	301	405
9	missing treatment missing treatment	g ai/l					2fLLOLMU 2fLLOLMU	A A		109	213	310	406
10	PYROXSULAM AGRI-DEX COC	75 g ai/kg		WG L	6.4 1.25	G A/A % V/V	2TLOLMU 2TLOLMU	B B	2.285 g/mx 18.75 ml/mx	110	203	308	403
11	PYROXSULAM AGRI-DEX COC	75 g ai/kg		WG L	7.5 1.25	G A/A % V/V	2TLOLMU 2TLOLMU	B B	2.677 g/mx 18.75 ml/mx	111	204	306	402
12	OSPREY UAN NIS	4.5 g ai/kg		WG L L	4.75 1.5 0.25	OZ/A QT/A % V/V	2TLOLMU 2TLOLMU 2TLOLMU	B B B	3.605 g/mx 38.0 ml/mx 3.75 ml/mx	112	201	312	408
13	AXIAL XL ADIGOR	0.83 g ai/l		EC L	8.2 9.6	OZ/A OZ/A	2TLOLMU 2TLOLMU	B B	6.493 ml/mx 7.601 ml/mx	113	210	309	401
14	HOELON	3 g ai/l		EC	2	PT/A	2TLOLMU	B	25.34 ml/mx	114	209	303	410

Sort Order: Treatment

Product quantities required for listed treatments and applications in one trial:

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
18.117	g	PYROXSULAM	75	WG	
140.610	ml	AGRI-DEX COC		L	
9.014	g	OSPREY	4.5	WG	
95.007	ml	UAN		L	
9.374	ml	NIS		L	
16.232	ml	AXIAL XL	0.83	EC	
19.003	ml	ADIGOR		L	
63.338	ml	HOELON	3	EC	
41.570	ml	PENDIMAX	3	EC	

* 'Per area' calculations based on spray volume= 14.8 gal/ac, mix size= 1.5 liters (mix size basis).

* Product amount calculations increased 25 % for overage adjustment.

* 'Per volume' calculations use spray volume= 14.8 gal/ac, mix size= 1.5 liters.

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Determine efficacy of pyroxsulam on ryegrass and wheat.

Trial ID: Wheat1-08 (NA07C2B038)

Study Dir.: Amy Davis

Location: Plains

Investigator: Stanley Culpepper

Trial Comments

OBJECTIVE: Evaluate wheat tolerance and ryegrass response to pyroxsulam.

NOTE: Ryegrass was seeded across the back 6 foot of each plot to allow the study to be used for weed control and crop tolerance data. After late-season weed control ratings were made, the wheat infested with ryegrass was mowed down prior to harvest leaving a 24 foot weed free tolerance plot to harvest.

Wheat Response:

1. Wheat injury was not significant by any treatment.

Ryegrass Response:

1. At 19 d after 2 leaf ryegrass applications, pyroxsulam provided little to no control. A similar response was noted with Osprey. Axial, Hoelon and Prowl in mixture with pyroxsulam were providing 60% control at this time.
2. By 60 d after 2 leaf applications, all treatments were providing excellent control. By seasons end, pyroxsulam provided 80 to 85% control with control statistically similar to Axial, Hoelon, and Osprey; although Hoelon was the only product providing greater than 90% control (94). Greater control from Hoelon may be in response to residual control. Mixing Prowl with pyroxsulam at 7.5 g tended to improve control and control was numerically similar to Hoelon.
3. At 41 d after applications to 2- tiller ryegrass, control by Osprey and pyroxsulam was 50% or less. Control at this time with Axial and Hoelon was greater than 90%. However, by harvest control by pyroxsulam, Osprey, Axial and Hoelon were similar with control ranging from 86 to 96%.

WHEAT YIELD:

1. Compared to the weed free control, no treatment impacted wheat yields.

CONCLUSION:

1. Hoelon continues to be an extremely effective material where resistance is not present.
2. Pyroxsulam is extremely slow but did provide good to excellent control. The addition of a residual herbicide like Prowl may improve late-season control.

GENERAL COMMENTS:

1. 14.3% moisture; 59.5 lb/bu test weight at harvest

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Weed Code		TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	LOLMG	LOLMG	LOLMG	
Crop Code										
Part Rated										
Rating Data Type		injury	injury	injury	injury	injury	control	control	control	
Rating Unit		percent	percent	percent	percent	percent	percent	percent	percent	
Rating Date		Dec-12-07	Dec-19-07	Jan-02-08	Jan-29-08	Apr-17-08	Dec-12-07	Dec-19-07	Jan-29-08	
Crop Stage										
Assessed By		AD	AD	AD	AD	AD	AD	AD	AD	
Trt-Eval Interval		12 DA-A	19 DA-A	14 DA-B	41 DA-B	139 DA-A	12 DA-A	19 DA-A	41 DA-B	
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
		Unit								
			1	2	3	4	5	6	7	
			8							
1	PYROXSULAM AGRI-DEX COC	5.3 G A/A 1.25 % V/V	0 a	0 a	0 a	0 a	0 a	0 a	8 bc	92 a
2	PYROXSULAM AGRI-DEX COC	6.4 G A/A 1.25 % V/V	0 a	0 a	0 a	0 a	0 a	0 a	8 bc	96 a
3	PYROXSULAM AGRI-DEX COC	7.5 G A/A 1.25 % V/V	0 a	0 a	0 a	0 a	0 a	0 a	1 c	97 a
4	OSPNEY UAN NIS	4.75 OZ/A 1.5 QT/A 0.25 % V/V	0 a	0 a	1 a	0 a	0 a	0 a	18 b	99 a
5	AXIAL XL ADIGOR	8.2 OZ/A 9.6 OZ/A	0 a	0 a	1 a	0 a	0 a	0 a	60 a	99 a
6	HOELON	2 PT/A	0 a	0 a	1 a	0 a	0 a	0 a	60 a	99 a
7	PYROXSULAM PENDIMAX AGRI-DEX COC	7.5 G A/A 42 OZ/A 1.25 % V/V	0 a	0 a	0 a	3 a	0 a	0 a	60 a	94 a
8	UNTREATED		0 a	0 a	0 a	0 a	0 a	0 a	0 c	0 c
9	missing treatment missing treatment		0 a	0 a	0 a	0 a	0 a	0 a	60 a	97 a
10	PYROXSULAM AGRI-DEX COC	6.4 G A/A 1.25 % V/V	0 a	0 a	0 a	0 a	0 a	0 a	0 c	50 b
11	PYROXSULAM AGRI-DEX COC	7.5 G A/A 1.25 % V/V	0 a	0 a	0 a	0 a	0 a	0 a	0 c	50 b
12	OSPNEY UAN NIS	4.75 OZ/A 1.5 QT/A 0.25 % V/V	0 a	0 a	0 a	0 a	0 a	0 a	0 c	43 b
13	AXIAL XL ADIGOR	8.2 OZ/A 9.6 OZ/A	0 a	0 a	0 a	0 a	0 a	0 a	0 c	90 a
14	HOELON	2 PT/A	0 a	0 a	0 a	1 a	0 a	0 a	0 c	92 a
	LSD (P=.05)		0.0	0.0	1.3	2.2	0.0	0.0	11.4	11.5
	Standard Deviation		0.0	0.0	0.9	1.5	0.0	0.0	7.9	8.0
	CV		0.0	0.0	456.36	563.47	0.0	0.0	40.62	10.25
	Bartlett's X2		0.0	0.0	1.1	1.323	0.0	0.0	22.19	72.977
	P(Bartlett's X2)		.	.	0.577	0.25	.	.	0.001*	0.001*

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

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Weed Code			LOLMG	LOLMG	TRZAW
Crop Code					grain
Part Rated					harvest
Rating Data Type			control	control	lb/plot
Rating Unit			percent	percent	maturity
Rating Date			Mar-03-08	Apr-17-08	May-23-08
Crop Stage					
Assessed By			SC	SC	
Trt-Eval Interval			75 DA-B	120 DA-B	156 DA-B
Trt No.	Treatment Name	Rate	9	10	11
		Unit			
1	PYROXSULAM AGRI-DEX COC	5.3 G A/A 1.25 % V/V	76 cd	80 c	23 abc
2	PYROXSULAM AGRI-DEX COC	6.4 G A/A 1.25 % V/V	87 abc	81 bc	23 abc
3	PYROXSULAM AGRI-DEX COC	7.5 G A/A 1.25 % V/V	82 bc	86 abc	22 bc
4	OSPREY UAN NIS	4.75 OZ/A 1.5 QT/A 0.25 % V/V	83 bc	90 abc	23 abc
5	AXIAL XL ADIGOR	8.2 OZ/A 9.6 OZ/A	90 ab	86 abc	23 abc
6	HOELON	2 PT/A	97 a	94 ab	23 abc
7	PYROXSULAM PENDIMAX AGRI-DEX COC	7.5 G A/A 42 OZ/A 1.25 % V/V	99 a	97 a	23 abc
8	UNTREATED		0 e	0 d	22 bc
9	missing treatment missing treatment		94 ab	95 a	23 abc
10	PYROXSULAM AGRI-DEX COC	6.4 G A/A 1.25 % V/V	66 d	92 abc	23 abc
11	PYROXSULAM AGRI-DEX COC	7.5 G A/A 1.25 % V/V	67 d	91 abc	24 ab
12	OSPREY UAN NIS	4.75 OZ/A 1.5 QT/A 0.25 % V/V	83 bc	96 a	22 c
13	AXIAL XL ADIGOR	8.2 OZ/A 9.6 OZ/A	81 bc	87 abc	24 a
14	HOELON	2 PT/A	99 a	96 a	24 ab
LSD (P=.05)			12.4	11.5	1.3
Standard Deviation			8.6	8.0	0.9
CV			10.97	9.62	3.83
Bartlett's X2			32.42	30.896	14.614
P(Bartlett's X2)			0.001*	0.002*	0.332

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

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Trial ID: Wheat1-08 (NA07C2B038) Study Dir.: Amy Davis
 Location: Plains Investigator: Stanley Culpepper

GENERAL TRIAL INFORMATION

Study Director: Amy Davis **Title:** Ext. Weed Science
Affiliation: University of Georgia
Postal Code: 31794
Investigator: Stanley Culpepper **Title:** Ext. Weed Science
Affiliation: University of Georgia
Postal Code: 31794

TRIAL LOCATION

City: Plains **Trial Status:** completed
State/Prov.: GA **Trial Reliability:** good
Postal Code: _____ **Initiation Date:** Nov-06-07
Country: USA **Planned Completion Date:** _____
E-Longitude of LL Corner °: _____ **N-Latitude of LL Corner °:** _____
Altitude of LL Corner: _____ **Unit:** _____ **Angle y-axis to North °:** _____
Directions:

COOPERATOR/LANDOWNER

Cooperator: _____ **Country:** _____
Org: _____ **Phone No:** _____
Address 1: _____ **Fax No:** _____
Address 2: _____
City: _____
State/Prov: _____
Postal Code: _____

Conducted Under GLP (Y/N): N **Conducted Under GEP (Y/N):** N
Guidelines: _____ **Guideline Description:** _____

Objective:

Conclusions:

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	LOLMG	Ryegrass, annual	Lolium multiflorum gaudini

Crop 1: TRZAW wheat **Variety:** AGS-2000
Planting Date: Nov-06-07 **Planting Method:** drilled
Rate: 20 foot **Depth:** 1 in **Perennial Age:** _____
Row Spacing: 7.5 inch **Spacing Within Row:** 0.05 in **Seed Bed:** flat
Soil Temperature: 78 F **Soil Moisture:** moist **Emergence Date:** Nov-11-07

SITE AND DESIGN

Plot Width, Unit: 6 FT **Plot Length, Unit:** 30 FT **Reps:** 4
Site Type: Plains Research Station
Tillage Type: Conventional **Study Design:** RANDOMIZED COMPLETE BLOCK

Trial Initiation Comments:

	Previous Crops	Previous Pesticides	Year
1.			

MAINTENANCE

Field Prep./Maintenance:

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No.	Date	Maintenance Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.							

SOIL DESCRIPTION

% Sand: 80 % OM: 5.9 Texture: loamy sand
 % Silt: 10 pH: 1.6 Soil Name: _____
 % Clay: 10 CEC: _____ Fert. Level: _____

ADDITIONAL MEASURED ELEMENTS

Element	Quantity	Unit

MOISTURE CONDITIONS

No.	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: _____

Closest Weather Station: _____ Distance: _____ Unit: _____

APPLICATION DESCRIPTION

	A	B
Application Date:	Nov-30-07	Dec-19-07
Time of Day:	9:00 am	4:30 pm
Application Method:	broadcast	broadcast
Application Timing:	a	b
Applic. Placement:	overtop	overtop
Air Temp., Unit:	54 f	66 f
% Relative Humidity:	62.5	58
Wind Velocity, Unit:	5 mph	2 mph
Dew Presence (Y/N):	y	n
Water Hardness:		
Soil Temp., Unit:	52 f	62 f
Soil Moisture:	moist	moist
% Cloud Cover:	0	10

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	TRZAW A	TRZAW B
Stage Scale:	3 leaf	2 Tiller
Height, Unit:	5 inch	7 inch

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	LOLMG A	LOLMG B
Stage Scale:	2 leaf	1-2 tiller
Density, Unit:	2 inch	4 inch

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APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	backpack	backpack
Operating Pressure:	24	24
Nozzle Type:	flat fan	flat fan
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	18 in	18 in
Nozzles/Row:	2	2
Band Width, Unit:		
Boom Length, Unit:	4.5 ft	4.5 ft
Boom Height, Unit:	15 in	15 in
Ground Speed, Unit:	3 mph	3 mph
Incorporation Equip.:		
Hours to Incorp.:		
Incorp. Depth, Unit:		
Carrier:	water	water
Spray Volume, Unit:	14.8 GPA	14.8 GPA
Spray pH:		
Propellant:	CO2	CO2
Tank Mix (Y/N):	y	y

Trt No	Treatment Application Comment