

University of Georgia

Wheat and ryegrass response to Prowl H20 PRE or mixed with Osprey or Hoelon POT.

Trial ID: Wheat1-06

Study Dir.: Stanley Culpepper

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 Type	Rate Rate Unit	Grow Stg	Appl Code	Amt Product to Measure	Plot No. By Rep			
								1	2	3	4
1	Non-treated							101	211	302	410
2	Prowl H20	3.8 L		42.2 OZ/A	PRE	A	33.41 ml/mx	102	212	304	406
3	Prowl H20 Define	3.8 L		42.2 OZ/A	PRE	A	33.41 ml/mx	103	207	305	404
		4 L		0.36 LB A/A	PRE	A	9.121 ml/mx				
4	Define	4 L		0.36 LB A/A	PRE	A	9.121 ml/mx	104	206	308	407
5	Osprey NIS UAN	4.5 WG		4.75 OZ/A	1-2 If W	B	3.605 g/mx	105	208	306	408
		L		0.5 % V/V	1-2 If W	B	7.499 ml/mx				
		L		1.5 QT/A	1-2 If W	B	38.0 ml/mx				
6	Osprey NIS UAN Prowl H20	4.5 WG		4.75 OZ/A	1-2 If W	B	3.605 g/mx	106	209	301	403
		L		0.5 % V/V	1-2 If W	B	7.499 ml/mx				
		L		1.5 QT/A	1-2 If W	B	38.0 ml/mx				
		3.8 L		42.2 OZ/A	1-2 If W	B	33.41 ml/mx				
7	Hoelon	3 EC		2 PT/A	1-2 If W	B	25.34 ml/mx	107	205	310	402
8	Hoelon Prowl H20	3 EC		2 PT/A	1-2 If W	B	25.34 ml/mx	108	201	309	405
		3.8 L		42.2 OZ/A	1-2 If W	B	33.41 ml/mx				
9	Osprey NIS UAN	4.5 WG		4.75 OZ/A	1-2 If T	C	3.605 g/mx	109	210	307	401
		L		0.5 % V/V	1-2 If T	C	7.499 ml/mx				
		L		1.5 QT/A	1-2 If T	C	38.0 ml/mx				
10	Osprey NIS UAN Prowl H20	4.5 WG		4.75 OZ/A	1-2 If T	C	3.605 g/mx	110	202	303	412
		L		0.5 % V/V	1-2 If T	C	7.499 ml/mx				
		L		1.5 QT/A	1-2 If T	C	38.0 ml/mx				
		3.8 L		42.2 OZ/A	1-2 If T	C	33.41 ml/mx				
11	Hoelon	3 EC		2 PT/A	1-2 If T	C	25.34 ml/mx	111	204	312	411
12	Hoelon Prowl H20	3 EC		2 PT/A	1-2 If T	C	25.34 ml/mx	112	203	311	409
		3.8 L		42.2 OZ/A	1-2 If T	C	33.41 ml/mx				

Sort Order: Treatment

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
250.608	ml	Prowl H20	3.8	L	
22.802	ml	Define	4	L	
18.027	g	Osprey	4.5	WG	
37.496	ml	NIS		L	
190.014	ml	UAN		L	
126.676	ml	Hoelon	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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Trial Comments

OBJECTIVE: Evaluate various annual ryegrass weed management systems in wheat.

VISUAL WHEAT RESPONSE:

1. Visual injury was very minor except Define did cause up to 19% stunting at 64 DAT.

RYEGRASS CONTROL:

1. Prowl PRE provided excellent early season control but control later in the season was only 80%.
2. Mixing Define with Prowl PRE or applying Define alone PRE provided excellent season long control.
3. Osprey or Hoelon applied to 1-2 leaf ryegrass provided excellent season long control. Mixing Prowl with Hoelon or Osprey did not impact control.
4. Osprey applied to 2-3 tiller ryegrass provided only 75% control late in the season. Adding Prowl to the mixture actually improved control. The benefit in control may have been because of additional adjuvant in the mixture increasing uptake of Osprey?
5. Hoelon applied to 2-3 tiller ryegrass provided complete control.

YIELD:

1. Yield was very uniform and consistent.
2. The last 6 feet of ryegrass was mowed down prior to harvesting (see general comment below).
3. As expected with minor ryegrass infestations in the harvested plot area, treatments had no impact on yield.

CONCLUSION:

1. This is our first experience missing 2-3 tiller ryegrass with Osprey. Our issues were not caused by late emerging ryegrass, not a coverage issue (Hoelon provided great control), and not likely a mixing issue since we had two treatments. Temperatures were cool but since the Hoelon was so effective this suggest temperature should not have been the limiting factor either.

GENERAL COMMENTS:

1. A small natural population of ryegrass was present but ryegrass was drilled across the last 6 feet of the plot to ensure ryegrass evaluations.

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Weed Code					LOLMU	LOLMU	LOLMU	LOLMU
Crop Code	wheat	wheat	wheat	wheat				
Rating Data Type	stunting	stunting	stunting	stunting	control	control	control	control
Rating Unit	percent	percent	percent	percent	percent	percent	percent	percent
Rating Date	Dec-11-05	Dec-20-05	Jan-12-06	Jan-27-06	Dec-11-05	Dec-20-05	Jan-12-06	Jan-27-06
Assessed By	AM	AM	AM	SC	AM	AM	Am	SC
Trt-Eval Interval	32 DA-A	41 DA-A	64 DA-A	79 DA-A	32 DA-A	41 DA-A	64 DA-A	79 DA-A
ARM Action Codes								
# Subsamples, Dec.								
Trt Treatment Rate								
No. Name Rate Unit	1	2	3	4	5	6	7	8
1 Non-treated	0 b	0 b	0 e	0 d	0 c	0 e	0 d	0 d
2 Prowl H20 42.2 OZ/A	0 b	0 b	0 e	2 cd	98 b	93 a	98 a	90 a
3 Prowl H20 42.2 OZ/A Define 0.36 LB A/A	9 a	9 a	14 b	6 b	100 a	100 a	100 a	99 a
4 Define 0.36 LB A/A	10 a	9 a	19 a	9 a	99 a	99 a	100 a	99 a
5 Osprey 4.75 OZ/A NIS 0.5 % V/V UAN 1.5 QT/A	0 b	0 b	1 de	1 d	0 c	40 d	97 a	91 a
6 Osprey 4.75 OZ/A NIS 0.5 % V/V UAN 1.5 QT/A Prowl H20 42.2 OZ/A	0 b	1 b	1 de	1 cd	0 c	55 c	97 a	98 a
7 Hoelon 2 PT/A	0 b	0 b	6 cd	6 ab	0 c	71 b	99 a	99 a
8 Hoelon 2 PT/A Prowl H20 42.2 OZ/A	0 b	0 b	6 cd	4 bc	0 c	71 b	100 a	99 a
9 Osprey 4.75 OZ/A NIS 0.5 % V/V UAN 1.5 QT/A	0 b	0 b	6 cd	0 d	0 c	0 e	65 bc	65 c
10 Osprey 4.75 OZ/A NIS 0.5 % V/V UAN 1.5 QT/A Prowl H20 42.2 OZ/A	0 b	0 b	4 cde	0 d	0 c	0 e	73 b	75 b
11 Hoelon 2 PT/A	0 b	0 b	8 c	3 cd	0 c	0 e	71 bc	98 a
12 Hoelon 2 PT/A Prowl H20 42.2 OZ/A	0 b	0 b	4 cde	1 d	0 c	0 e	63 c	97 a
LSD (P=.05)	2.0	2.4	5.0	2.6	0.8	10.7	9.2	9.0
Standard Deviation	1.4	1.6	3.4	1.8	0.6	7.4	6.4	6.2
CV	88.44	104.52	60.17	69.74	2.37	16.73	7.98	7.39
Bartlett's X2	0.685	1.782	7.1	4.058	7.089	12.68	66.6	35.534
P(Bartlett's X2)	0.408	0.41	0.627	0.852	0.029*	0.027*	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		LOLMU	Yield	Yield
Crop Code				
Rating Data Type		control	plot area	YIELD
Rating Unit		percent	wt/lb	bu/A
Rating Date		Mar-04-06	May-22-06	May-22-06
Assessed By		AM	TG	TG
Trt-Eval Interval		115 DA-A	194 DA-A	194 DA-A
ARM Action Codes				TY1
# Subsamples, Dec.				1
Trt No.	Treatment Name	Rate	Rate	Unit
		Unit		
		9	10	11
1	Non-treated	0 d	17 c	68.3 c
2	Prowl H20	42.2 OZ/A	80 bc	17 abc
	Define	0.36 LB A/A	100 a	17 bc
3	Define	0.36 LB A/A	100 a	18 abc
4	Osprey	4.75 OZ/A	100 a	18 a
	NIS	0.5 % V/V		
	UAN	1.5 QT/A		
5	Osprey	4.75 OZ/A	99 a	18 abc
	NIS	0.5 % V/V		
	UAN	1.5 QT/A		
	Prowl H20	42.2 OZ/A		
6	Hoelon	2 PT/A	100 a	17 abc
7	Hoelon	2 PT/A	100 a	18 abc
	Prowl H20	42.2 OZ/A		
8	Osprey	4.75 OZ/A	75 c	17 abc
	NIS	0.5 % V/V		
	UAN	1.5 QT/A		
9	Osprey	4.75 OZ/A	85 b	18 abc
	NIS	0.5 % V/V		
	UAN	1.5 QT/A		
	Prowl H20	42.2 OZ/A		
10	Hoelon	2 PT/A	100 a	18 ab
11	Hoelon	2 PT/A	100 a	18 abc
	Prowl H20	42.2 OZ/A		
LSD (P=.05)		6.5	0.8	3.05
Standard Deviation		4.5	0.5	2.11
CV		5.23	2.99	2.99
Bartlett's X2		39.044	4.046	4.047
P(Bartlett's X2)		0.001*	0.969	0.969

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

Column 11: TY1 = 4.033333*[10]

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

SOIL DESCRIPTION

% Sand: 80 % OM: 1.6 Texture: loamy sand
 % Silt: 10 pH: 6.0 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: irrigated

Closest Weather Station: _____ Distance: _____ Unit: __

APPLICATION DESCRIPTION

	A	B	C
Application Date:	Nov-09-05	Nov-30-05	Dec-20-05
Time of Day:	11 am	6 pm	5 pm
Application Method:	broadcast	broadcast	broadcast
Application Timing:	PRE	1-2 lf	1-2 T
Applic. Placement:	on soil	overtop	overtop
Air Temp., Unit:	83 F	48 F	49 F
% Relative Humidity:	41	46	38
Wind Velocity, Unit:	4 mph	3 mph	4 mph
Dew Presence (Y/N):	n	n	n
Water Hardness:			
Soil Temp., Unit:	83 F	48 F	53 F
Soil Moisture:	fair/irri	moist	moist
% Cloud Cover:	0	0	0

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	TRZAW .	TRZAW .	TRZAW .
Stage Scale:	PRE	1-2 lf	1-2tiller
Height, Unit:	0 inch	2 inch	4 inch

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	LOLMU .	LOLMU .	LOLMU .
Stage Scale:	PRE	1-2 lf	2-3 tiller
Density, Unit:	0 ydsq	2 ydsq	2 ydsq

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APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	backpack	backpack	backpack
Operating Pressure:	24	24	24
Nozzle Type:	flat fan	flat fan	flat fan
Nozzle Size:	11002	11002	11002
Nozzle Spacing, Unit:	18 in	18 in	18 in
Nozzles/Row:	1	1	1
Band Width, Unit:			
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
Incorporation Equip.:			
Hours to Incorp.:			
Incorp. Depth, Unit:			
Carrier:	water	water	water
Spray Volume, Unit:	14.8 GPA	14.8 GPA	14.8 GPA
Spray pH:			
Propellant:	CO2	CO2	CO2
Tank Mix (Y/N):	y	y	y

Trt No	Treatment Application Comment