

Integrated Disease Control in Wheat - UIUC

Trial ID: 10-ARC-24D-S50

Location: Agronomy Res. Ctr.

Investigator: Bryan Young, Professor, Southern Illinois University, bgyoung@siu.edu
City State Zip Country: Carbondale IL 62901 USA
Trial Status: FINAL **Initiation Date:** 10-28-08

Objectives: Demonstrate that integrated management is the most effective and economical means of reducing losses to FHB/DON and increase grower adoption of integrated strategies to control FHB.

Crop 1: TRZAW Winter wheat **Variety:** See treatment list
Planting Method: Seeded **Planting Date:** 10-21-09
Rate, Unit: 1.3 mil. S/A **Depth, Unit:** 1 IN
Row Spacing, Unit: 7.5 IN

Plot Width, Unit: 5 FT **Site Type:** FIELD
Plot Length, Unit: 24 FT **Tillage Type:** NO-TILL
Replications: 4 **Study Design:** Randomized Complete Block

Prior Crops, Year
 1. ZEAMD 2009

Field Prep./Maintenance: Fall: N 27 LB/A, P205 69 LB/A, K20 0 LB/A as DAP
 Spring: N 95 LB/A, P205 0 LB/A, K20 0 LB/A as 32% UAN

% OM: 1.7 **Texture:** SILT LOAM
pH: 6.7 **Soil Name:** WEIR
CEC: 8.7 **Fert. Level:** P1: 69 LB/A, K: 252 LB/A

Application Description

	A	B
Application Date:	05-06-10	05-12-10
Time of Day:	12:00	10:00
Application Method:	Spray	Spray
Application Timing:	FK10.51	FK10.51
Application Placement:	BROFOL	BROFOL
Applied By:	NRJ	NRJ
Air Temperature, Unit:	77 F	78 F
% Relative Humidity:	48	70
Wind Velocity, Unit:	2 MPH	1 MPH
Wind Direction:	E	SW
Dew Presence (Y/N):	N	Y
Soil Temperature, Unit:	60 F	65 F
Soil Moisture:	NORMAL	NORMAL
% Cloud Cover:	0	0

	A	B
Crop stage at application:	10.51 FK	10.51 FK
Height Min, Max (inch):	26 30	28 36

Pest Stage At Each Application

	A	B
Application Date:	05-06-10	05-12-10
Stage Majority (leaves):	NA	NA

Application Equipment

	A	B
Appl. Equipment:	CO2 sprayer	CO2 sprayer
Operating Pressure:	30 PSI	30 PSI
Nozzle Type:	TwinFlFan	TwinFlFan
Nozzle Size:	XR 110015	XR 110015
Boom Length, Unit:	5 FT	5 FT
Spray Volume, Unit:	20 GPA	20 GPA

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Pest Code Crop Code Rating Date Rating Data Type Rating Unit Rating Timing Trt-Eval Interval										TRZAW 06-14-10 Height inch	TRZAW 06-21-10 Moisture Percent	TRZAW 06-21-10 Test wt. lb/bu	TRZAW 06-21-10 Yield bu/A	TRZAW 11-18-09 Vigor 1-9	TRZAW 11-18-09 Plants 1 sqft	
										EOS			28 DAP		28 DAP	
Trt	Treatment	Form	Form	Rate	Other	Other		Growth	Appl							
No.	Name	Conc	Type	Rate	Unit	Rate	Rate	Unit	Stage	Code						
1	P25R47										32.1 d	11.0 b-e	52.3 abc	84 a	6.0 b 19.7 c	
1	PROSARO	3.5	SC	0.178	lb ai/a	6.5	fl oz/a		FK10.51 B							
1	ACTIVATOR 90	100	SL	0.125	% v/v	0.125	% v/v		FK10.51 B							
2	P25R47										32.3 d	10.6 de	51.2 abc	76 abc	6.5 ab 23.3 abc	
2	NO FUNGICIDE															
3	P25R54										33.8 c	11.5 bcd	54.1 ab	75 bc	6.5 ab 23.1 abc	
3	PROSARO	3.5	SC	0.178	lb ai/a	6.5	fl oz/a		FK10.51 B							
3	ACTIVATOR 90	100	SL	0.125	% v/v	0.125	% v/v		FK10.51 B							
4	P25R54										34.1 c	10.9 cde	53.8 ab	70 cd	6.8 ab 22.5 bc	
4	NO FUNGICIDE															
5	BW5170										32.4 d	11.7 abc	54.1 ab	65 d	6.5 ab 25.0 ab	
5	PROSARO	3.5	SC	0.178	lb ai/a	6.5	fl oz/a		FK10.51 A							
5	ACTIVATOR 90	100	SL	0.125	% v/v	0.125	% v/v		FK10.51 A							
6	BW5170										32.1 d	10.3 e	47.3 c	56 e	6.8 ab 22.9 abc	
6	NO FUNGICIDE															
7	KSC 409W										33.0 cd	12.5 a	55.4 a	83 ab	7.5 a 21.9 bc	
7	PROSARO	3.5	SC	0.178	lb ai/a	6.5	fl oz/a		FK10.51 A							
7	ACTIVATOR 90	100	SL	0.125	% v/v	0.125	% v/v		FK10.51 A							
8	KSC 409W										33.4 cd	11.9 ab	53.9 ab	71 cd	7.0 ab 23.7 ab	
8	NO FUNGICIDE															
9	COOPER										32.1 d	11.1 b-e	51.6 abc	73 cd	6.8 ab 21.5 bc	
9	PROSARO	3.5	SC	0.178	lb ai/a	6.5	fl oz/a		FK10.51 B							
9	ACTIVATOR 90	100	SL	0.125	% v/v	0.125	% v/v		FK10.51 B							
10	COOPER										32.9 cd	10.3 e	49.7 bc	65 de	7.5 a 26.4 a	
10	NO FUNGICIDE															
11	KASKASKIA										36.9 b	11.7 abc	52.9 abc	77 abc	6.5 ab 22.7 abc	
11	PROSARO	3.5	SC	0.178	lb ai/a	6.5	fl oz/a		FK10.51 B							
11	ACTIVATOR 90	100	SL	0.125	% v/v	0.125	% v/v		FK10.51 B							
12	KASKASKIA										38.3 a	11.9 ab	55.6 a	78 abc	7.3 a 24.8 ab	
12	NO FUNGICIDE															
LSD (P=.05)										1.26	0.95	5.62	9.5	1.05	3.76	
Replicate F										8.454	0.323	0.369	12.233	1.000	10.870	
Replicate Prob(F)										0.0003	0.8087	0.7759	0.0001	0.4051	0.0001	
Treatment F										20.830	4.620	1.533	6.244	1.536	1.835	
Treatment Prob(F)										0.0001	0.0003	0.1665	0.0001	0.1655	0.0875	

Means followed by same letter do not significantly differ (P=.05, LSD)

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Location: Agronomy Res. Ctr.

Pest Code	HEADSCAB	HEADSCAB	LFRST	LFRST	TNST/SEP	TNST/SEP														
Crop Code	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW														
Rating Date	06-02-10	06-02-10	06-02-10	06-02-10	06-02-10	06-02-10														
Rating Data Type	Incidence	Severity	Incidence	Severity	Incidence	Severity														
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent														
Rating Timing	SoftDough	SoftDough	SoftDough	SoftDough	SoftDough	SoftDough														
Trt-Eval Interval																				
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Other Rate	Other Rate Unit	Growth Stage	Appl Code												
1	P25R47								70	a-d	12	c-f	2	c	0	b	23	ef	1	de
1	PROSARO	3.5	SC	0.178	lb ai/a	6.5	fl oz/a	FK10.51	B											
1	ACTIVATOR 90	100	SL	0.125	% v/v	0.125	% v/v	FK10.51	B											
2	P25R47								85	a	25	ab	14	ab	0	b	65	a	4	ab
2	NO FUNGICIDE																			
3	P25R54								64	cd	22	abc	1	c	0	b	49	abc	1	de
3	PROSARO	3.5	SC	0.178	lb ai/a	6.5	fl oz/a	FK10.51	B											
3	ACTIVATOR 90	100	SL	0.125	% v/v	0.125	% v/v	FK10.51	B											
4	P25R54								84	a	27	ab	22	a	0	a	57	ab	5	a
4	NO FUNGICIDE																			
5	BW5170								76	abc	11	def	1	c	0	b	35	cde	1	de
5	PROSARO	3.5	SC	0.178	lb ai/a	6.5	fl oz/a	FK10.51	A											
5	ACTIVATOR 90	100	SL	0.125	% v/v	0.125	% v/v	FK10.51	A											
6	BW5170								80	ab	18	b-e	6	bc	0	b	63	a	4	a
6	NO FUNGICIDE																			
7	KSC 409W								71	a-d	10	ef	0	c	0	b	49	abc	2	cd
7	PROSARO	3.5	SC	0.178	lb ai/a	6.5	fl oz/a	FK10.51	A											
7	ACTIVATOR 90	100	SL	0.125	% v/v	0.125	% v/v	FK10.51	A											
8	KSC 409W								67	bcd	15	c-f	2	c	0	b	42	bcd	3	ab
8	NO FUNGICIDE																			
9	COOPER								61	cd	13	c-f	0	c	0	b	11	f	0	e
9	PROSARO	3.5	SC	0.178	lb ai/a	6.5	fl oz/a	FK10.51	B											
9	ACTIVATOR 90	100	SL	0.125	% v/v	0.125	% v/v	FK10.51	B											
10	COOPER								85	a	29	a	23	a	1	a	64	a	3	bc
10	NO FUNGICIDE																			
11	KASKASKIA								58	d	7	f	0	c	0	b	27	def	1	de
11	PROSARO	3.5	SC	0.178	lb ai/a	6.5	fl oz/a	FK10.51	B											
11	ACTIVATOR 90	100	SL	0.125	% v/v	0.125	% v/v	FK10.51	B											
12	KASKASKIA								80	ab	20	a-d	0	c	0	b	18	ef	1	de
12	NO FUNGICIDE																			
LSD (P=.05)									15.3		9.3		11.5		0.2		18.3		1.5	
Replicate F									3.896		0.696		0.612		0.102		5.391		4.715	
Replicate Prob(F)									0.0173		0.5613		0.6123		0.9581		0.0039		0.0076	
Treatment F									3.279		4.948		4.816		4.200		8.920		10.448	
Treatment Prob(F)									0.0040		0.0002		0.0002		0.0007		0.0001		0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Trial Comments

1. Protocol: University of Illinois - Bradley, BASF.
2. Ratings: Plant counts and visual vigor 21-28 days after planting, count (3) 19.2 inch of row, vigor 1 to 9, 1 = best, 9 = dead. DI/DS, based on 25 flag leaves/heads per plot, at soft dough.
3. Yield, seed samples, send to Carl Bradley.
4. Spread inoculum at flag leaf, 2 weeks before heading.
5. Blanket application of fertilizer at planting and early spring.
Blanket preemergence application of Roundup WeatherMax (32 fl oz/A) was applied on 10-28-09.
Blanket postemergence application of Harmony Extra (0.5 oz/A), if needed, was applied 4-20-10.
6. Vigor 1 to 9, 9 = best, 1 = dead. Plants 1 sqft = Number of wheat plants per 1 square foot (19.2 by 7.5 inch).
DAP = Days after planting. HEADSCAB = Fusarium head blight. LFRST = Leaf rust. No stripe rust was found.
TNST/SEP = Tan spot and/or septoria leaf blotch on the flag leaf (25% tan spot and 75% septoria leaf blotch).
7. Harvested 6-21-10 (6) 7.5 inch rows by 20 ft.