

Wheat Management Strategies - Carbondale.

Project Code: 03-Wheat-Strategy Location: Agronomy Research Center N9

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Carbondale IL 62901 USA
 Trial Status: Final Updated: 1-16-04

Objective:

Evaluate the response of three wheat varieties to three management strategies.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. ERICA	horseweed	Conyza canadensis (L.) Crong.
3. CYPES	nutsedge, yellow	Cyperus esculentus L.
4. OXAST	woodsorrel, yellow	Oxalis stricta L.
5. TRFRE	clover, white	Trifolium repens L.

Crop 1: TRZAW wheat, winter Variety: See note
 Planting Method: Seeded Planting Date: 10-17-02
 Rate: See note Depth: See note
 Row Spacing: 7.0 IN

Crop 2: GLXMA soybean Variety: P94B74 RR
 Planting Method: Seeded Planting Date: 6-24-03
 Rate: 75 lb/A Depth: 1.0 IN
 Row Spacing: 30 IN Seed Bed: No-till

Plot Width, Unit: 10 FT Plot Length, Unit: 40 FT Reps: 4
 Tillage Type: Reduced-till Study Design: Randomized complete block
 Previous Crop, Year: GLXMA, 2002

Field Prep./Maintenance: See note

Texture: Silt loam % OM: 3.4 pH: 6.8 CEC: 9
 Fert. Level: P1: 87 LB/A, K: 434 LB/A

APPLICATION DESCRIPTION

A

Application Method: See note

CROP STAGE AT EACH APPLICATION

A

Crop 1 Code, Stage: TRZAW NA
 Height, Unit: NA NA
 Crop 2 Code, Stage: GLXMA V3-V4
 Height, Unit: 6-10 IN

APPLICATION EQUIPMENT

A

Appl. Equipment: See note

NOTES:

Wheat varieties are listed in the treatment list.

Planting, fertilization, and pest control for each management level are listed in the comments.

Harvested wheat Jun-24-03, (8) 7 inch rows by 40 ft, and soybean Nov-10-03, (2) 30 inch rows by 40 ft.

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Weed Code		TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW							
Crop Code		TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW							
Rating Data Type		HeadScab	HeadScab	GlumeBch	GlumeBch	LeafBch	LeafBch	LeafRust	LeafRust	BYD	Height	Tillers	Heads							
Rating Unit		% Incid	% Sever	% Incid	% Sever	% Incid	% Sever	% Incid	% Sever	% Incid	CM	1 SQFT	1 SQFT							
Rating Date		5-28-03	5-28-03	5-28-03	5-28-03	5-28-03	5-28-03	5-28-03	5-28-03	5-28-03	6-6-03	6-6-03	6-6-03							
Trt-Eval Interval																				
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Prod Unit	Prod Rate	Grow Stg	Appl Code												
1	Patterson								16	38	43	43	29	30	5	8	6	95	69	59
1	Low Management																			
2	Patterson								14	25	55	45	38	35	6	5	2	93	85	76
2	Medium Management																			
3	Patterson								10	24	13	14	2	6	1	3	6	93	85	78
3	High Management																			
4	FS539								13	18	30	16	25	28	25	20	4	100	83	71
4	Low Management																			
5	FS539								13	18	15	16	28	25	23	16	5	95	94	82
5	Medium Management																			
6	FS539								7	11	6	11	1	2	1	2	3	98	94	85
6	High Management																			
7	Pioneer 25R37								15	19	36	18	6	11	3	1	13	83	69	56
7	Low Management																			
8	Pioneer 25R37								12	20	31	21	9	9	4	2	4	81	85	69
8	Medium Management																			
9	Pioneer 25R37								7	9	13	10	1	3	0	0	6	83	83	68
9	High Management																			
LSD (P=.05)		5.1	6.6	18.8	9.0	11.3	9.7	6.4	3.0	5.2	4.2	15.1	12.7							
Replicate F		1.007	0.806	0.418	0.312	1.565	0.041	0.779	1.697	1.870	0.541	4.858	3.189							
Replicate Prob(F)		0.4069	0.5031	0.7417	0.8166	0.2237	0.9888	0.5171	0.1944	0.1628	0.6588	0.0088	0.0418							
Treatment F		3.701	13.539	6.437	17.991	13.517	15.084	18.136	46.069	2.875	24.422	2.943	5.115							
Treatment Prob(F)		0.0060	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0225	0.0001	0.0192	0.0009							

Weed Code	TRZAW	TTTTT	TTTTT	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	TRZAW	GLXMA	GLXMA	GLXMA
Crop Code	HeadLeng	Moisture	ODW	Moisture	Test wt.	Yield	Protein	1000 kwt	FN	DON	Moisture	Test wt.	Yield	
Rating Data Type	CM	Percent	g/1.0 M2	Percent	lb/bu	bu/A	Percent	Grams	Seconds	ppm	Percent	lb/bu	bu/A	
Rating Unit	6-6-03	6-17-03	6-17-03	6-24-03	6-24-03	6-24-03	6-24-03	6-24-03	6-24-03	6-24-03	11-10-03	11-10-03	11-10-03	
Rating Date	6-6-03	6-17-03	6-17-03	6-24-03	6-24-03	6-24-03	6-24-03	6-24-03	6-24-03	6-24-03	11-10-03	11-10-03	11-10-03	
Trt-Eval Interval														

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Prod Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code
1	Patterson	6.9	73	1.79	11.8	58.4	66	9.0	28.0
1	Low Management								281
2	Patterson	6.8	72	1.04	11.6	57.5	69	8.9	29.5
2	Medium Management								297
3	Patterson	6.8	54	0.17	12.1	58.9	76	9.1	32.5
3	High Management								308
4	FS539	6.9	47	0.14	12.6	59.9	78	8.7	36.8
4	Low Management								325
5	FS539	6.8		0.00	12.4	59.7	76	8.8	34.5
5	Medium Management								302
6	FS539	7.1		0.00	13.3	60.0	89	9.4	39.5
6	High Management								315
7	Pioneer 25R37	7.8	48	0.62	12.3	57.9	72	9.2	38.6
7	Low Management								299
8	Pioneer 25R37	7.9		0.00	12.4	58.1	77	9.5	37.9
8	Medium Management								310
9	Pioneer 25R37	8.0	14	0.12	14.1	58.5	88	9.7	39.1
9	High Management								338
LSD (P=.05)		0.31	39.1	1.346	0.38	0.56	5.7	.	.
Replicate F		2.098	0.680	1.078	0.855	8.569	3.144		
Replicate Prob(F)		0.1271	0.6205	0.3773	0.4777	0.0005	0.0437		
Treatment F		24.964	6.118	1.809	33.899	22.819	15.512		
Treatment Prob(F)		0.0001	0.0835	0.1248	0.0001	0.0001	0.0001		

Trial Comments

1. Protocol: Wheat Tech Inc.
2. Ratings: Weed biomass; wheat head counts; percent lodging at harvest; grain yield, moisture, and test weight; save grain sample (5 lb/plot) for additional evaluations.
3. Management details:
 - Low Management: Seeding rate = 100 lb of seed/A, using drill setting; planting depth = 0.5 inch;
fall fertilization = 100 lb 18-46-0 and 100 lb 0-0-60 on 10-15-02;
spring fertilization = 75 lb N as liquid 28% on 2-10-03.
 - Medium Management: Seeding rate = 110 lb of seed/A, calibrated; planting depth = 1.5 inch;
fall fertilization = 100 lb 18-46-0 and 100 lb 0-0-60 on 10-15-02;
spring fertilization = 90 lb N as liquid 28% on 3-18-03;
herbicides = Harmony Extra at 0.5 oz/A 3-26-03.
 - High Management: Seeding rate = 110 lb of seed/A, calibrated; planting depth = 1.5 inch;
fall fertilization = 100 lb 18-46-0 and 100 lb 0-0-60 on 10-15-02;
spring fertilization = 48 lb N as liquid 28% on 2-6-03 and 60 lb N as liquid 28% on 4-2-03;
herbicides = Harmony Extra 0.5 oz/A on 3-26-03;
insecticides = Warrior 1.8 oz/A (tank-mixed with fungicides) on 5-7-03;
fungicides = Headline + Activator 90 at 6.0 oz/A + 0.5 pt/A on 5-7-03.
4. HeadScab = Head scab. % Incid = Percent incidence. % Sever = Percent severity. GlumeBch = Glume blotch. LeafBch = Leaf blotch. LeafRust = Leaf rust. BYD = Barley yellow dwarf. 1 SQFT = 1 square foot. HeadLeng = Head length.
5. TTTTT = weeds generally, weed species included; SETFA, ERICA, CYPES, OXAST, and TRFRE. For weeds TTTTT, a higher moisture percentage indicates live plants versus dead and dry winter annual weeds.
6. ODW = oven dry weight. g/1.0 M2 = grams per 1.0 square meter.
7. For protein, grams/1000 kernals, falling number and DON, plot (replication) samples were pooled for each treatment, thus statistical analysis was not possible.
8. A blanket application of Clearout 41 at 1.0 qt/A was applied to all doublecrop soybean plots at 30 days after planting.