Wheat Management Strategies - Belleville.

Project Code: 03-1-M110 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
Trial Status: Final **Updated:** 1-16-04

Objective:
Evaluate the response of three wheat varieties to three management stategies.

Weed	Code	Common Name	Scientific Name
1.	DIGIS	crabgrass, smooth	Digitaria ischaemum (Schreb. ex Schweig)
2.	SETFA	foxtail, giant	Setaria faberi Herrm.
3.	POAAN	bluegrass, annual	Poa annua L.
4.	ERICA	horseweed	Conyza canadensis (L.) Crong.
5.	AMBEL	ragweed, common	Ambrosia artemisiifolia L.
6.	AMBTR	ragweed, giant	Ambrosia trifida L.
7.	ABUTH	velvetleaf	Abutilon theophrasti Medicus

Crop 1: TRZAW wheat, winter **Variety:** See note
Planting Method: Seeded **Planting Date:** 10-16-02
Rate: See note **Depth:** See note
Row Spacing: 30 IN

Crop 2: GLXMA soybean **Variety:** Asgrow 4403 RR
Planting Method: Seeded **Planting Date:** 6-28-03
Rate: 75 lb/A **Depth:** 1.0 IN
Row Spacing: 15 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

Soil Name: Weir **% OM:** 1.8 **pH:** 5.7 **CEC:** 10
Texture: Silt loam **Fert. Level:** P1: 98 LB/A, K: 258 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-26-03, (7) 7.5 inch rows by 36 ft.
and soybean Oct-31-03, (4) 15 inch rows by 37 ft.

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	TRZAW HeadScab % Incid 5-29-03	TRZAW HeadScab % Sever 5-29-03	TRZAW GlumeBch % Incid 5-29-03	TRZAW GlumeBch % Sever 5-29-03	TRZAW LeafBch % Incid 5-29-03	TRZAW LeafBch % Sever 5-29-03	TRZAW LeafRust % Incid 5-29-03	TRZAW LeafRust % Sever 5-29-03	TRZAW BYD % Incid 5-29-03	TRZAW Height CM 5-29-03	TRZAW Tillers 1 SQFT 5-29-03	TRZAW Heads 1 SQFT 5-29-03
1	Patterson 1 Low Management									6	21	8	14	9	9	9	5	2	92	46	44
2	Patterson 2 Medium Management									7	28	9	13	13	19	14	14	2	92	49	47
3	Patterson 3 High Management									8	25	3	4	1	4	1	1	1	93	57	55
4	FS539 4 Low Management									6	9	4	6	6	8	13	11	4	92	48	45
5	FS539 5 Medium Management									6	11	4	6	5	6	9	8	2	93	51	49
6	FS539 6 High Management									7	9	2	4	2	5	1	1	0	95	61	58
7	Pioneer 25R37 7 Low Management									2	4	10	13	3	6	0	0	1	81	37	36
8	Pioneer 25R37 8 Medium Management									2	4	12	13	4	6	0	0	2	82	47	45
9	Pioneer 25R37 9 High Management									2	3	8	9	2	3	0	0	1	85	48	46
LSD (P=.05)										2.8	6.6	4.2	7.2	6.6	5.6	6.5	4.1	2.4	4.5	10.8	10.3
Replicate F										3.088	1.137	2.170	1.680	1.771	2.101	1.198	1.294	0.800	70.603	7.799	8.445
Replicate Prob(F)										0.0462	0.3541	0.1179	0.1979	0.1795	0.1266	0.3318	0.2992	0.5061	0.0001	0.0008	0.0005
Treatment F										6.715	17.633	6.090	2.956	3.011	6.060	6.994	14.235	1.454	11.994	3.349	3.303
Treatment Prob(F)										0.0001	0.0001	0.0003	0.0188	0.0173	0.0003	0.0001	0.0001	0.2256	0.0001	0.0102	0.0110

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	TRZAW HeadLeng CM 5-29-03	TTTTT Moisture Percent 6-17-03	TTTTT ODW g/1.0 M2 6-17-03	TRZAW Moisture Percent 6-25-03	TRZAW Test wt. lb/bu 6-25-03	TRZAW Yield bu/A 6-25-03	TRZAW Protein Percent 6-25-03	TRZAW 1000 kwt Grams 6-25-03	TRZAW FN Seconds 6-25-03	TRZAW DON ppm 6-25-03	GLXMA Moisture Percent 10-31-03	GLXMA Yield bu/A 10-31-03
1	Patterson 1 Low Management									6.7	38	40.18	12.9	57.5	57	8.6	32.6	317	1.95	13.4	41
2	Patterson 2 Medium Management									6.5	40	20.73	12.8	57.8	73	9.2	32.7	309	1.91	12.7	44
3	Patterson 3 High Management									6.4	46	42.65	12.9	57.6	90	9.0	32.8	316	6.20	12.7	47
4	FS539 4 Low Management									6.9	34	46.78	14.2	60.1	80	9.1	39.3	320	3.22	13.4	44
5	FS539 5 Medium Management									6.7	46	16.94	13.8	60.7	83	9.1	40.3	346	2.68	12.7	42
6	FS539 6 High Management									7.1	44	45.49	18.0	56.4	89	10.0	40.3	335	4.26	12.7	45
7	Pioneer 25R37 7 Low Management									7.6	33	54.42	18.1	57.8	70	9.6	40.5	331	1.14	13.6	49
8	Pioneer 25R37 8 Medium Management									7.6	40	28.02	20.0	56.7	79	10.2	43.9	347	1.62	14.7	43
9	Pioneer 25R37 9 High Management									7.6	51	38.43	25.2	54.5	93	10.8	45.1	276	3.26	13.6	47
LSD (P=.05)										0.57	14.1	26.661	3.38	3.10	10.5	.	.	.	.	1.55	4.9
Replicate F										5.405	3.500	8.004	2.485	2.463	4.734					0.535	5.668
Replicate Prob(F)										0.0055	0.0309	0.0007	0.0850	0.0869	0.0099					0.6625	0.0044
Treatment F										6.434	1.438	1.892	13.374	3.063	9.850					1.563	2.257
Treatment Prob(F)										0.0002	0.2320	0.1085	0.0001	0.0159	0.0001					0.1885	0.0588

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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, applied 10-14-02;
   spring fertilization = 75 lb N as liquid 28%, applied 3-7-03.
   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, applied 10-14-02;
   spring fertilization = 90 lb N as liquid 28%, applied 3-7-03;
   herbicides = Harmony Extra + 2,4-D (Gordon's LV4) at 0.5 + 6.0 oz/A, 20 GPA, applied 3-26-03, F4 wheat, 3-5" tall.
   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, applied 10-14-02;
   spring fertilization = 50 lb N as liquid 28%, applied 2-12-03 and 65 lb N as liquid 28%, applied 4-1-03;
   herbicides = Harmony Extra + 2,4-D (Gordon's LV4) at 0.5 + 6.0 oz/A 20 GPA,, applied 3-26-03, F4 wheat, 3-5" tall;
   insecticides = Warrior 2.0 oz/A, 20 GPA, applied 4-2-03, F5 wheat, 5-6" tall;
   fungicides = Headline + Activator 90 at 6.0 oz/A + 0.0625% v/v tankmixed with Warrior 1.8 oz/A, 20 GPA, applied 5-7-03, F10 wheat, 30" tall.
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; DIGIS, SETFA, POAAN, ERICA, AMBEL, AMBTR, and ABUTH. 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.