Summary of the 2008 Purdue University Wheat Improvement Program Performance Trials

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Description of 2007-2008 growing season

Soil condition was wetter than desired at seeding in fall 2007, especially at Wabash and Woodburn, but because of the late date, we seeded into wet soil conditions. Seedbed condition at Lafayette was excellent, and at Evansville it was somewhat wet. Thus, wheat emergence was less uniform than desired at all locations, except Lafayette.

Precipitation throughout most of Indiana was above normal from late January to early June. Thus, soil conditions were very wet and cold, especially at Woodburn, Wabash and Atlanta, and at all locations the cool and wet soil conditions limited nutrient uptake during early to mid spring. Topdressing of nitrogen was delayed due to wet conditions, especially at Evansville where we could not get on the field until end of March – about a month late. Soil and weather conditions were more favorable for wheat at Lafayette, and at Evansville after mid April, than at other locations.

Given the wet and cold soil conditions throughout Indiana and the current high wheat prices, this was a very fortuitous year to initiate a 'high management' study at multilocations (Woodburn, Lafayette, Evansville and Mount Vernon) and seeded adjacent to the plots of our 'typical management' test at these locations. The obvious effects of the additional nitrogen on wheat growth and darker green color, as well as the absence of diseases on the high management plots, to which we applied additional seed treatment for aphid control, as well as insecticide and fungicide, all translated into significantly higher grain yield. We will carry out an economic analysis of the input costs/returns in the near future. We plan to continue the side-by-side 'typical' and 'high' management studies in future years.

Incidence of fusarium head blight was negligible in most areas of Indiana, likely due to the cool temperatures until early June – well after wheat flowering. Other diseases were sporadic or not severe, although septoria leaf blotch was significant in some areas of the state. Severity of fusarium head blight in the inoculated nursery at Lafayette was more variable than in previous years, likely due to the cool conditions that persisted into June – 2 to 3 weeks after inoculation.

Generally, wheat yields in the Purdue plots at Woodburn, Wabash and Atlanta were much lower than at Lafayette and Evansville. Thus, in addition to presenting results at each of the five individual test locations, means combined over Woodburn, Wabash and Atlanta are presented, and means over Lafayette and Evansville are presented.

On-line at http://www.agry.purdue.edu/ext/smgrain/variety/2008Results.pdf

TYPICAL MANAGEMENT SOFT RED WINTER WHEAT TEST, Woodburn, IN, 2008

Herb Ohm, Purdue University, hohm@purdue.edu

Date seeded: 10/08/07 Date harvested: 7/09/08

Entry no.	Cultivar/ designation	Grain yield	Grain yield	Test weight	Number of Heads	Heading date	Plant height	Straw rating	Winter survival
		bu/a	rank	lb/bu	in 2 ft row	Julian	in.	0-9[1]	%
1	Patterson	55.3	9	56.8		144.0	32.0	5.0	97.5
2	PIO25R47	67.8	2	56.3	84.5	146.0	29.0	4.0	95.0
3	PIO25R54	59.8	6	57.6	71.0	146.0	33.0	4.0	87.5
4	Bess	42.0	15	57.8	69.5	147.5	30.0	5.0	60.0
5	AG2579	58.0	7	55.4		147.0	28.0	4.0	80.0
6	AG2581	47.1	14	59.8		145.0	26.0	4.0	75.0
7	Branson	52.9	10	56.6	70.0	144.0	32.0	5.0	95.0
8	INW0303	65.5	3	53.8	57.5	143.0	27.0	1.0	82.5
9	INW0803	61.4	5	53.6	60.0	144.5	27.0	2.0	90.0
10	WB2-532	70.8	1	57.1		145.0	36.0	4.0	97.5
11	INW0316	49.3	13	55.6	70.0	145.5	29.0	3.0	85.0
12	INW0411	56.7	8	55.8	63.5	146.0	28.0	3.0	95.0
13	INW0412	52.7	11	60.3	59.5	144.5	35.0	3.0	97.5
14	INW0731	62.8	4	56.2	84.0	145.5	31.0	2.0	95.0
15	INW0801	51.6	12	54.0	78.5	145.5	27.0	2.0	87.5
No. of reps		2		1	2	2	2	1	2
Location means		52.3		56.7	67.3	145.5	29.7	2.8	81.3
CV %		15.5			16.5	4.2	6.4		15.53
LSD (0.05)		16.4			23.7	2.1	3.8		25.47

Typical Management consisted of the following: seed treatment - Storcide II and Dividend Extreme; N/P/K - 35/90/00 at seeding plus 95/00/00 topdress application s(March 24); and Harmony Extra application per label instructions. Randomized Complete Block, 2 replications. Plots: seeded 4' x 12', harvested 4' x 10'.

[1]0=no lodging and stiff straw to 9=severe lodging.

HIGH MANAGEMENT SOFT RED WINTER WHEAT TEST, Woodburn, IN, 2008

Herb Ohm, Purdue University, hohm@purdue.edu

Date seeded: 10/08/07. Date harvested: 7/09/08.

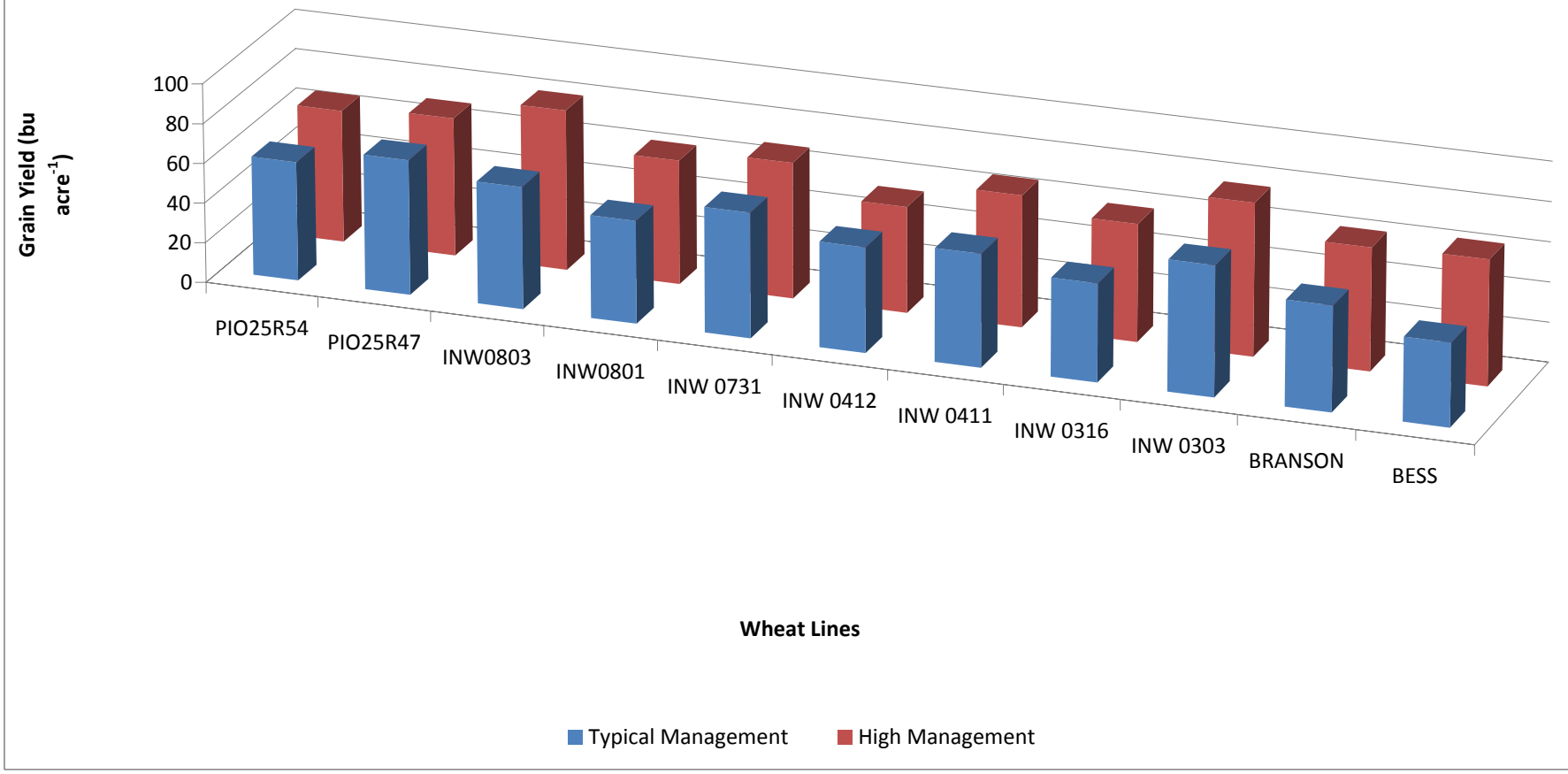
Entry no.	Cultivar/ designation	Grain yield	Grain yield	Number of heads	Heading date	Plant height	Straw rating	Winter survival
		bu/a	rank	in 2 ft. row	Julian	in.	0-9[1]	%
1	PIO25R47	69.5	3	78	146.0	29.5	3.5	88.3
2	PIO25R54	66.4	5	78	147.5	31.5	3.0	80.0
3	Branson	61.7	9	88	144.5	30.5	4.0	93.3
4	Bess	63.0	7	75	148.0	31.5	3.5	83.3
5	INW0303	76.7	2	66	143.5	27.5	2.0	86.7
6	INW0803	80.5	1	71	143.0	28.0	1.0	93.3
7	INW0316	58.9	10	86	145.0	30.5	3.0	81.7
8	INW0411	66.1	6	62	144.5	32.0	1.5	90.0
9	INW0412	53.2	11	72	145.0	36.5	3.5	83.3
10	INW0731	68.2	4	81	146.5	31.0	3.5	85.0
11	INW0801	62.3	8	73	145.0	30.0	2.0	75.0
No. of reps		3		2	2	2	2	3
Location means		67.0		74.6	145.4	4.5	2.5	84.3
CV %		8.7		13.4	2.7	31.0	21.6	8.5
LSD (0.05)		9.6		22.0	1.4	2.9	1.1	11.7

High management consisted of the following: seed treatment - Cruiser + Storcide II and Dividend Extreme; fertilizer: N/P/K - 35/90/00 at seeding plus topdress split application 95/00/00 (March 24) plus 40/00/00 (April 17); and Harmony Extra, Headline and Warrior/Baythroid per label instructions. Randomized Complete Block, 3 replications. Plots: seeded 4' x 12', harvested 4' x 10'.

[1]0=no lodging and stiff straw to 9=severe lodging.

Wheat Grain Yield Comparison of Typical and High Management Production Practices - Woodburn, IN

Herb Ohm, Purdue University



TYPICAL MANAGEMENT SOFT RED WINTER WHEAT TEST, Wabash, IN, 2008

Herb Ohm, Purdue University, hohm@purdue.edu

Date seeded: 10/12/07. Date harvested: 7/09/08.

Entry	Cultivar/	Grain yield	Grain yield	Test weight	Heading date	Plant height	Straw rating	Winter survival
no.	designation	bu/a	rank	lb/bu	Julian	in.	0-9[1]	%
1	Patterson	64.8	14	58.8	138.5	35.0	3.0	92.5
2	PIO25R47	85.1	3	58.9	143.5	34.5	4.0	82.5
3	PIO25R54	77.7	6	59.0	144.0	32.5	4.0	97.5
4	Bess	75.5	7	59.1	141.5	36.0	3.0	100.0
5	AG2579	87.6	2	58.2	144.5	33.5	3.0	87.5
6	AG2581	75.3	8	61.9	139.5	33.0	4.0	100.0
7	Branson	65.7	13	58.0	139.5	33.0	3.0	100.0
8	INW0303	77.8	5	56.3	138.5	29.0	1.0	90.0
9	INW0803	88.0	1	56.1	138.5	30.5	1.0	95.0
10	WB2-532	70.8	11	58.2	141.5	35.5	3.0	95.0
11	INW0316	67.2	12	57.9	141.0	29.5	2.0	85.0
12	INW0411	58.6	15	58.1	142.5	31.5	2.0	67.5
13	INW0412	71.0	10	62.1	142.5	37.5	3.0	95.0
14	INW0731	74.4	9	58.9	141.5	33.0	4.0	87.5
15	INW0801	83.3	4	55.5	140.5	33.0	4.0	97.5
No. of reps		2		1	2	2	1	2
Location means		72.8		58.4	141.6	32.5	2.6	87.7
CV %		11.5			5.8	4.8		12.01
LSD (0.05)		16.8			2.5	3.1		21.06

Typical Management consisted of the following: seed treatment - Storcide II and Dividend Extreme; N/P/K - 35/90/00 at seeding plus 95/00/00 topdress application (March 24); and Harmony Extra application per label instructions. Randomized Complete Block, 2 replications. Plots: seeded 4' x 12', harvested 4' x 10'.

[1]0=no lodging and stiff straw to 9=severe lodging.

TYPICAL MANAGEMENT SOFT RED WINTER WHEAT TEST, Atlanta, IN, 2008

Herb Ohm, Purdue University, hohm@purdue.edu

Date seeded: 10/04/07. Date harvested: 6/30/08.

Entry no.	Cultivar/ designation	Grain yield	Grain yield	Heading date	Plant height	Straw rating
		bu/a	rank	Julian	in.	0-9[1]
1	Patterson	69.8	15	137.5	33.0	3.0
2	PIO25R47	102.7	2	138.5	36.0	4.0
3	PIO25R54	85.6	10	140.0	39.0	3.0
4	Bess	95.8	4	138.0	39.0	4.0
5	AG2579	82.1	12	141.5	33.0	3.0
6	AG2581	87.3	8	137.5	34.0	3.0
7	Branson	106.3	1	136.5	36.0	3.0
8	INW0303	96.5	3	137.0	31.0	1.0
9	INW0803	90.3	7	136.5	30.0	1.0
10	WB2-532	90.3	6	138.0	40.0	3.0
11	INW0316	91.8	5	136.5	33.0	2.0
12	INW0411	81.7	13	137.5	34.0	2.0
13	INW0412	82.4	11	138.0	39.0	3.0
14	INW0731	86.1	9	138.5	36.0	3.0
15	INW0801	73.5	14	138.5	32.0	1.0
No. of reps		2		2	1	1
Location means		77.4		138.4	33.9	1.8
CV %		15.67		7.61		
LSD (0.05)		24.46		2.83		

Typical Management consisted of the following: seed treatment - Storcide II and Dividend Extreme; N/P/K - 35/90/00 at seeding plus 95/00/00 topdress application (March 25); and Harmony Extra application (April 15) per label instructions. Randomized Complete Block, 2 replications. Plots: seeded 4' x 12', harvested 4' x 10'.

[1]0=no lodging and stiff straw to 9=severe lodging.

TYPICAL MANAGEMENT SOFT RED WINTER WHEAT TEST, Woodburn, Wabash and Atlanta, IN, Combined Analysis, 2008

Herb Ohm, Purdue University, hohm@purdue.edu

Date seeded: Wd 10/08/07, Wa 10/12/07, At 10/04/07. Date harvested: Wd 7/09/08, Wa 7/09/08, At 6/30/08.

Entry	Cultivar	Grain yield, bu/a				Wd-Wa-At	Means across Wd, Wa and At				Wd-Wa ave	Wd: H Mgmt
							Test	Heading	Plant	Straw	Winter	Number
no.		Woodburn	Wabash	Atlanta	Wd-WA-AT	average	weight	date	height		survival	of Heads
					average	rank	lbs/bu	Julian	in.	0-9[1]	%	in 2 ft row
1	Patterson	55.3	64.8	69.8	63.3	15	58.0	140.0	33.4	3.7	95.0	
2	PIO25R47	67.8	85.1	102.7	85.2	1	57.0	142.7	32.6	4.0	88.8	84.5
3	PIO25R54	59.8	77.7	85.6	74.3	8	58.7	143.3	34.0	3.7	92.5	71.0
4	Bess	42.0	75.5	95.8	71.1	9	58.8	142.3	34.2	4.0	80.0	69.5
5	AG2579	58.0	87.6	82.1	75.9	5	57.2	144.3	31.2	3.3	83.8	
6	AG2581	47.1	75.3	87.3	69.9	10	60.7	140.7	30.4	3.7	87.5	
7	Branson	52.9	65.7	106.3	75.0	6	57.9	140.0	33.2	3.7	97.5	70.0
8	INW0303	65.5	77.8	96.5	79.9	2	55.6	139.5	28.6	1.0	86.3	57.5
9	INW0803	61.4	88.0	90.3	79.9	2	55.5	139.8	29.0	1.3	92.5	60.0
10	WB2-532	70.8	70.8	90.3	77.3	4	57.5	141.5	36.6	3.3	96.3	
11	INW0316	49.3	67.2	91.8	69.4	11	57.5	141.0	30.0	2.3	85.0	70.0
12	INW0411	56.7	58.6	81.7	65.6	14	57.2	142.0	30.6	2.3	81.3	63.5
13	INW0412	52.7	71.0	82.4	68.7	13	61.1	141.7	36.8	3.0	96.3	59.5
14	INW0731	62.8	74.4	86.1	74.4	7	57.8	141.8	32.8	3.0	91.3	84.0
15	INW0801	51.6	83.3	73.5	69.4	11	54.7	141.5	30.4	2.3	92.5	78.5
No. of reps		2	2	2	6		3	6	5	3	4	2
Location means		52.3	72.8	77.4	67.5		57.7	141.8	31.7	2.4	84.5	67.3
CV %		15.5	11.5	15.7	14.4			5.7	5.5		13.7	16.5
LSD (0.05)		16.4	16.8	24.5	11.1			1.4	2.2		16.3	23.7
Atlanta means					77.4		57.9	138.4	33.9	1.8	-	
Wabash means					72.8		58.4	141.6	32.5	2.6	87.7	
Woodburn means					52.3		56.7	145.5	29.7	2.8	81.3	67.3

Typical Management consisted of the following: seed treatment - Storcide II and Dividend Extreme; N/P/K - 35/90/00 at seeding plus 95/00/00 topdress application; and Harmony Extra application per label instructions. RCB design, 2 replications at each location. Plots: seeded 4' x 12', harvested 4' x 10'.

[1]0=no lodging and stiff straw to 9=severe lodging.

TYPICAL MANAGEMENT SOFT RED WINTER WHEAT TEST, West Lafayette, IN, 2008

Herb Ohm, Purdue University, hohm@purdue.edu

Date seeded: 10/01/07. Date harvested: 6/30/08.

Entry no.	Cultivar/ designation	Grain yield	Grain yield	Test weight	Number of heads	Heading date	Plant height	Straw rating[1]	Fusarium severity[2]
		bu/A	rank	lb/bu	in 2 ft row	Julian	in.	0-9	%
1	Patterson	94.5	14	59.9	-	139.0	45.0	4.5	84.2
2	PIO25R47	107.0	2	57.7	93.0	140.0	42.0	4.0	47.5
3	PIO25R54	95.9	12	60.4	82.5	139.0	42.0	4.0	19.0
4	Bess	102.5	7	61.1	70.0	143.0	44.0	4.0	42.0
5	AG2579	102.2	8	59.5	-	138.0	43.0	4.0	35.8
6	AG2581	103.8	5	62.2	-	137.0	42.0	4.0	18.0
7	Branson	106.9	3	60.0	95.5	136.0	40.0	4.0	44.2
8	INW0303	105.1	4	57.9	54.0	136.0	36.0	1.5	48.6
9	INW0803	103.5	6	57.9	-	137.0	38.0	1.5	46.7
10	WB2-532	110.9	1	59.4	-	139.0	46.0	4.5	31.7
11	INW0316	95.6	13	60.6	71.5	139.0	38.0	3.0	10.0
12	INW0411	92.9	15	58.5	92.0	145.0	40.0	3.0	15.9
13	INW0412	98.0	11	62.4	56.5	142.0	45.0	4.0	24.3
14	INW0731	101.8	9	60.3	86.5	139.0	42.0	4.0	44.2
15	INW0801	100.8	10	57.7	79.0	137.0	38.0	2.0	20.8
No. of reps		3		1	2	1	1	1	6
Location means		96.0		59.5	74.8	139.3	40.7	3.0	35.5
CV %		8.1			19.0			13.6	51.61
LSD (0.05)		12.6			30.6			0.8	31.09

Typical Management consisted of the following: seed treatment - Storcide II and Dividend Extreme; N/P/K - 35/90/00 application at seeding plus topdress application 95/00/00 (March 26); and Harmony Extra per label instructions. Exptl Design: Randomized Complete Block, 2 replications. Plots: seeded 4' x 12' harvested 4' x 10'.

[1]0=no lodging and stiff straw to 9=severe lodging. [2]0=Average % of spikelets that were diseased at 21 d after inoculation of one flower with 500 *F. graminearum* macro spores in 10ul dH_20 with a dispensible syringe in the 3rd or 4th spikelet from the tip of the spike of 6 spikes. There was negligible natural infection due to cool temperatures into early June -- 2 to 3 weeks after inoculation during flowering. The cool conditions likely contributed to the large variance in the data.

HIGH MANAGEMENT SOFT RED WINTER WHEAT TEST, West Lafayette, IN, 2008

Herb Ohm, Purdue University, hohm@purdue.edu

Date seeded: 10/01/07. Date harvested: 6/30/08.

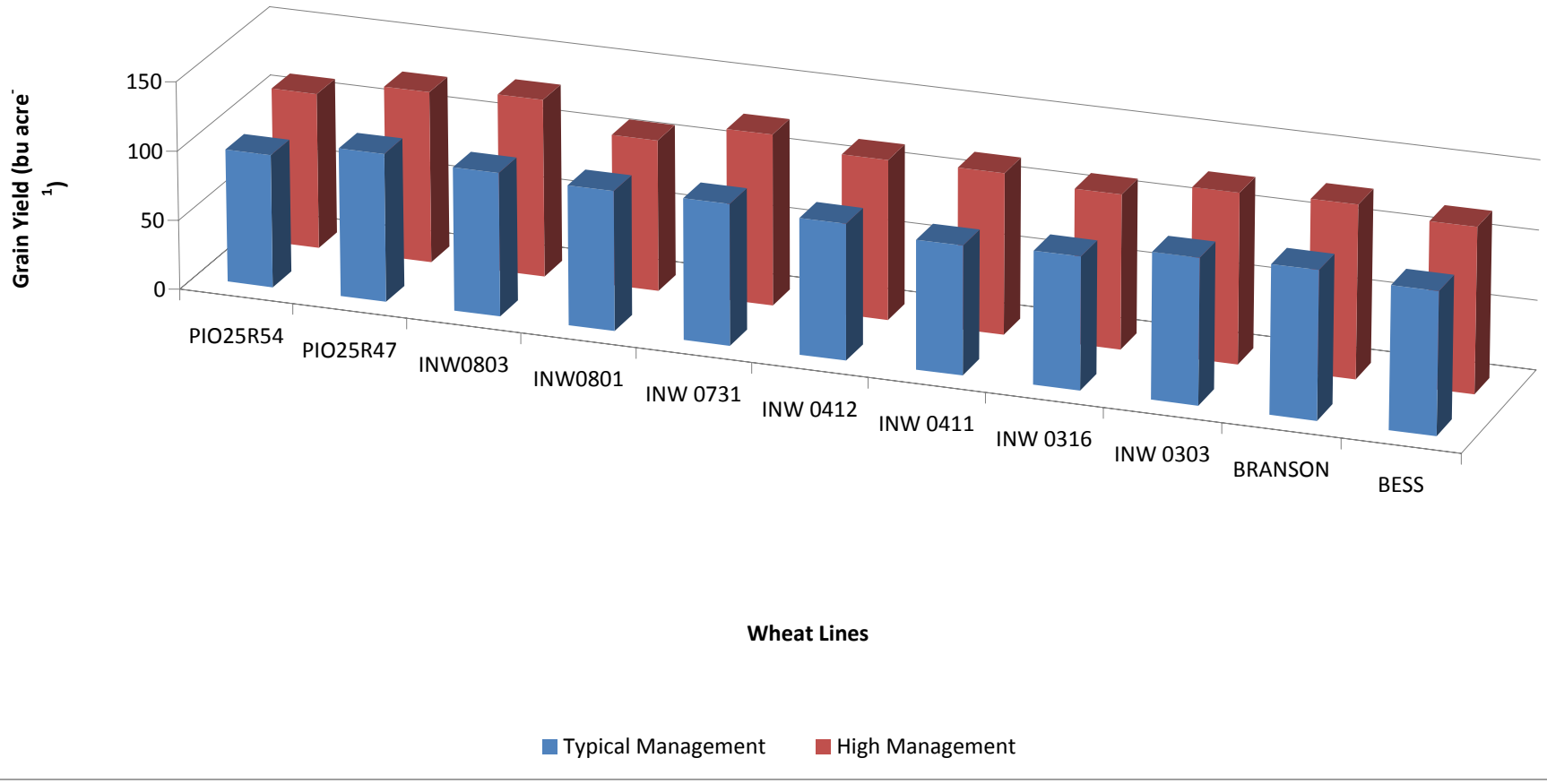
Entry no.	Cultivar/ designation	Grain yield	Grain yield	Test weight	Number of heads	Heading date	Plant height	Straw rating
		bu/A	rank	lb/bu	in 2 ft row	Julian	in.	0-9[1]
1	PIO25R47	123.8	3	58.4	80.3	140.0	40.0	5.0
2	PIO25R54	112.4	9	61.6	86.7	141.5	42.0	4.0
3	Branson	124.6	2	60.8	84.3	138.5	40.5	4.0
4	Bess	119.2	6	61.6	88.0	139.5	44.0	5.0
5	INW0303	122.7	5	59.2	63.0	138.0	38.5	2.5
6	INW0803	128.2	1	59.1	-	138.0	38.5	2.5
7	INW0316	111.2	10	61.4	69.7	139.0	38.5	3.0
8	INW0411	116.2	7	59.9	66.3	139.5	41.0	3.0
9	INW0412	115.4	8	62.9	75.0	140.0	48.0	4.0
10	INW0731	123.4	4	61.2	81.3	139.0	41.0	4.0
11	INW0801	109.0	11	58.4	74.3	139.0	39.0	3.0
No. of reps		3		1	3	2	2	2
Location means		117.4		60.2	75.1	139.2	41.0	3.4
CV %		3.07			16.7	3.31	2.06	11.02
LSD (0.05)		5.94			21.0	1.32	1.76	0.79

High management consisted of the following: seed treatment - Cruiser + Storcide II and Dividend Extreme; N/P/K - 35/90/00 at seeding plus topdress split application 95/00/00 (March 26) plus 40/00/00 (April 15); and applied Harmony Extra, Headline and Warrior/Baythroid per label instructions. Exptl Design: RCB, 3 replications. Plots: seeded 4' x 12', harvested 4' x 10'.

[1]0=no lodging and stiff straw to 9=severe lodging.

Wheat Grain Yield Comparisons of Typical and High Management Production Practices - West Lafayette, IN

Herb Ohm, Purdue University



TYPICAL MANAGEMENT SOFT RED WINTER WHEAT TEST, Evansville, IN, 2008

Herb Ohm, Purdue University, hohm@purdue.edu

Date seeded: 10/01/07. Date harvested: 6/23/08.

Entry no.	Cultivar/ designation	Grain yield	Grain yield	Test weight	Heading date	Plant height	Straw rating	Number of heads	YD disease	S. nodorum blotch[3]	S. tritici blotch[4]	*S.tritici* sporulation
		bu/a	rank	lb/bu	Julian	in.	0-9[1]	in 2 ft. row	0-9[2]	%	%	density[5]
1	PATTERSON	77.6	14	58.9	131.0	36.5	3.5	-	3.0	4.5	50	M
2	PIO25R47	112.1	1	57.3	129.5	36.5	4.5	124.5	2.0	3.5	10	R
3	PIO25R54	101.8	4	58.4	129.0	38.0	4.0	67.0	2.0	3.5	30	M
4	BESS	88.1	12	58.7	130.0	38.5	4.5	84.5	3.0	1.5	40	M
5	AG2579	99.2	7	57.9	131.0	37.0	4.0	-	1.0	4.5	30	M
6	AG2581	109.9	2	60.9	127.5	39.0	4.5	-	1.0	4.0	30	M
7	BRANSON	101.5	5	58.7	127.5	37.0	4.0	99.5	3.0	2.5	30	R
8	INW 0303	91.1	11	56.6	127.0	30.5	2.0	93.0	5.0	6.0	40	M
9	INW0803	100.5	6	56.5	127.5	31.0	1.5	68.5	5.0	6.5	30	M
10	WB2-532	97.5	9	58.3	128.5	37.5	4.0	-	5.0	3.5	30	R
11	INW 0316	99.0	8	59.1	128.0	35.0	3.0	89.5	1.0	5.5	30	M
12	INW 0411	65.7	15	56.9	127.0	35.0	3.0	71.0	0.0	4.5	50	M
13	INW 0412	83.2	13	62.5	129.0	42.0	4.0	82.5	0.0	5.0	30	M
14	INW 0731	108.4	3	59.9	129.5	37.5	3.5	106.5	2.0	4.0	30	M
15	INW0802	92.9	10	57.6	126.5	35.0	3.0	-	0.0	6.5	50	M
No. of reps:		2		1	2	2	2	2	1	1	1	1
Location means		89.2		58.8	128.7	35.7	3.0	87.6	0.9	4.4	34.0	
CV %		9.54			10.26	3.81	15.59	22.52				
LSD (0.05)		17.02			1.78	2.72	0.95	41.82				

Typical Management consisted of the following: seed treatment - Storcide II and Dividend Extreme; N/P/K - 35/90/00 application at seeding plus topdress application 95/00/00 (March 26); and Harmony Extra per label instructions. Exptl Design: Randomized Complete Block, 2 replications. Plots: seeded 4' x 12', harvested 4' x 10'.

[1]0=no lodging and stiff straw to 9=severe lodging. [2]0=no yellow dwarf disease symptoms to 9=severe leaf yellowing and plant stunting.

[3]Percent of glume tissue diseased. [4]R=little or no sporulation in disease lesions, M=mod. sporulation, S=profuse sporulation.

[5]R=little or no sporulation in *Septoria tritici* lesions, M=moderate sporulation, S=profuse sporulation (susceptible).

HIGH MANAGEMENT SOFT RED WINTER WHEAT TEST, Evansville, 2008

Herb Ohm, Purdue University, hohm@purdue.edu

Date seeded: 10/05/07. Date harvested: 6/23/08.

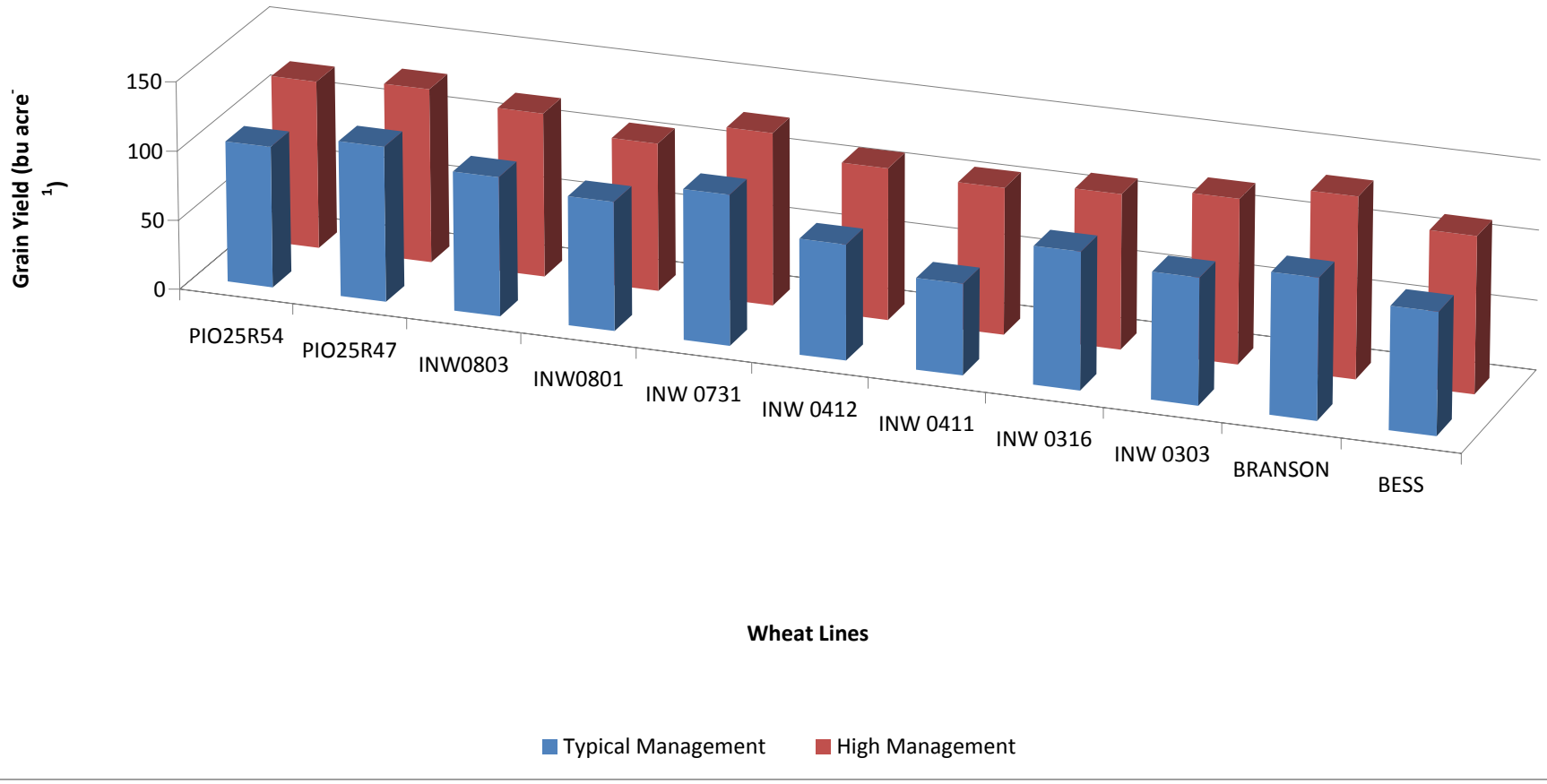
Entry no.	Cultivar/ designation	Grain yield	Grain yield	Test weight	Heading date	Plant height	Straw rating	Number of heads
		bu/a	rank	lb/bu	Julian	in.	0-9[1]	in 2 ft. row
1	PIO25R47	125.9	2	57.4	129.3	37.3	5.0	127.3
2	PIO25R54	121.3	4	59.2	128.0	39.0	4.3	96.7
3	Branson	130.4	1	59.8	127.0	37.7	4.3	119.7
4	Bess	112.7	7	60.3	130.0	39.3	4.7	89.3
5	INW0303	118.4	5	57.6	128.3	32.0	2.0	98.3
6	INW0803	118.4	6	58.4	128.0	32.7	1.3	95.7
7	INW0316	111.4	8	59.3	128.7	34.7	2.3	101.7
8	INW0411	105.6	11	58.8	126.7	35.0	3.0	89.7
9	INW0412	109.4	9	62.6	129.7	43.0	4.0	118.3
10	INW 0731	124.6	3	59.6	129.3	37.3	3.7	138.7
11	INW0801	106.7	10	57.0	126.3	33.7	2.0	100.3
No. of reps		3		1	3	3	3	3
Location means		117.1		59.3	128.3	36.3	3.1	105.0
CV %		5.84			14.07	3.05	14.03	12.64
LSD (0.05)		11.26			1.91	1.82	0.72	22.13

High management consisted of the following: seed treatment - Cruiser + Storcide II and Dividend Extreme; N/P/K - 35/90/00 at seeding plus topdress split application 95/00/00 (March 26) plus 40/00/00 (April 15); and applied Harmony Extra, Headline and Warrior/Baythroid per label instructions. Exptl Design: RCB, 3 replications. Plots: seeded 4' x 12', harvested 4' x 10'. Topdress applications were done on the same dates at both locations, due to wet soil conditions throughout the spring season, although certainly the applications were applied late in the season at Evansville.

[1]0=no lodging and stiff straw to 9=severe lodging.

Wheat Grain Yield Comparison of Typical and High Management Production Practices - Evansville, IN

Herb Ohm, Purdue University



TYPICAL MANAGEMENT SOFT RED WINTER WHEAT TEST, West Lafayette and Evansville, IN, 2008

Herb Ohm, Purdue University, hohm@purdue.edu

Date seeded: 10/01/07 (W Laf) 10/05/07 (Ev). Date harvested: 6/23/08 (Ev) 6/30/08 (W Laf).

						Average over W Lafayette and Evansville				Evansville		
Entry	Cultivar/	Grain yield, bu/a				Test	Heading	Plant	Straw	*S nodorum*	*S tritici*	*S tritici*
no.	designation	W. Lafayette	Evansville	WL-EV ave.	WL-EV ave.	weight	date	height	rating	blotch[2]	blotch[3]	sporulation
					rank	lbs/bu	Julian	in.	0-9[1]	%	%	density[4]
1	Patterson	94.5	77.6	87.7	14	59.4	133.7	39.3	4.0	5	50	M
2	PIO25R47	107.0	112.1	109.0	1	57.5	133.0	38.3	4.3	4	10	R
3	PIO25R54	95.9	101.8	98.3	9	59.4	132.3	39.3	4.0	4	30	M
4	Bess	102.5	88.1	96.8	12	59.9	134.3	40.3	4.3	2	40	M
5	AG2579	102.2	99.2	101.0	7	58.7	133.3	39.0	4.0	5	30	M
6	AG2581	103.8	109.9	106.3	2	61.6	130.7	40.0	4.3	4	30	M
7	Branson	106.9	101.5	104.7	4	59.4	130.3	38.0	4.0	3	30	R
8	INW0303	105.1	91.1	99.5	8	57.3	130.0	32.3	1.8	6	40	M
9	INW0803	103.5	100.5	102.3	6	57.2	130.7	33.3	1.5	7	30	M
10	WB2-532	110.9	97.5	105.6	3	58.9	132.0	40.3	4.3	4	30	R
11	INW0316	95.6	99.0	97.0	11	59.9	131.7	36.0	3.0	6	30	M
12	INW0411	92.9	65.7	82.0	15	57.7	133.0	36.7	3.0	5	50	M
13	INW0412	98.0	83.2	92.1	13	62.5	133.3	43.0	4.0	5	30	M
14	INW0731	101.8	108.4	104.4	5	60.1	132.7	39.0	3.8	4	30	M
15	INW0801	100.8	92.9	97.6	10	57.7	130.0	36.0	2.5	7	50	M
No. of reps		3	2	5		2	3	3	4	1	1	1
Location means		96.0	89.2	93.3		59.1	132.2	37.4	3.0	4	34.0	
CV %		8.1	9.5	8.6			7.3	3.6	14.6			
LSD (0.05)		12.6	17.0	10.1			1.5	2.2	0.6			
West Lafayette				96.0		59.5	139.3	40.7				
Evansville				89.2		58.8	128.7	35.7				

Typical Management consisted of the following: seed treatment - Storcide II and Dividend Extreme; N/P/K - 35/90/00 at seeding plus topdress application 95/00/00 (both locations on March 26); and Harmony Extra per label instructions. Experimental Design: Randomized Complete Block, 2 replications. Plots: seeded 4' x 12', harvested 4' x 10'.

[1]0=no lodging and stiff straw to 9=severe lodging. [2]Percent of glume tissue diseased. [3]Percent of leaf below the flag leaf diseased.

[4]R=little or no sporulation in *Septoria tritici* lesions, M=moderate sporulation, S=profuse sporulation (susceptible).

HIGH MANAGEMENT SOFT RED WINTER WHEAT TEST, West Lafayette and Evansville, 2008

Herb Ohm, Purdue University, hohm@purdue.edu

Date seeded: 10/01/07 (W Laf) 10/05/07 (Ev). Date harvested: 6/23/08 (Ev) 6/30/08 (W Laf).

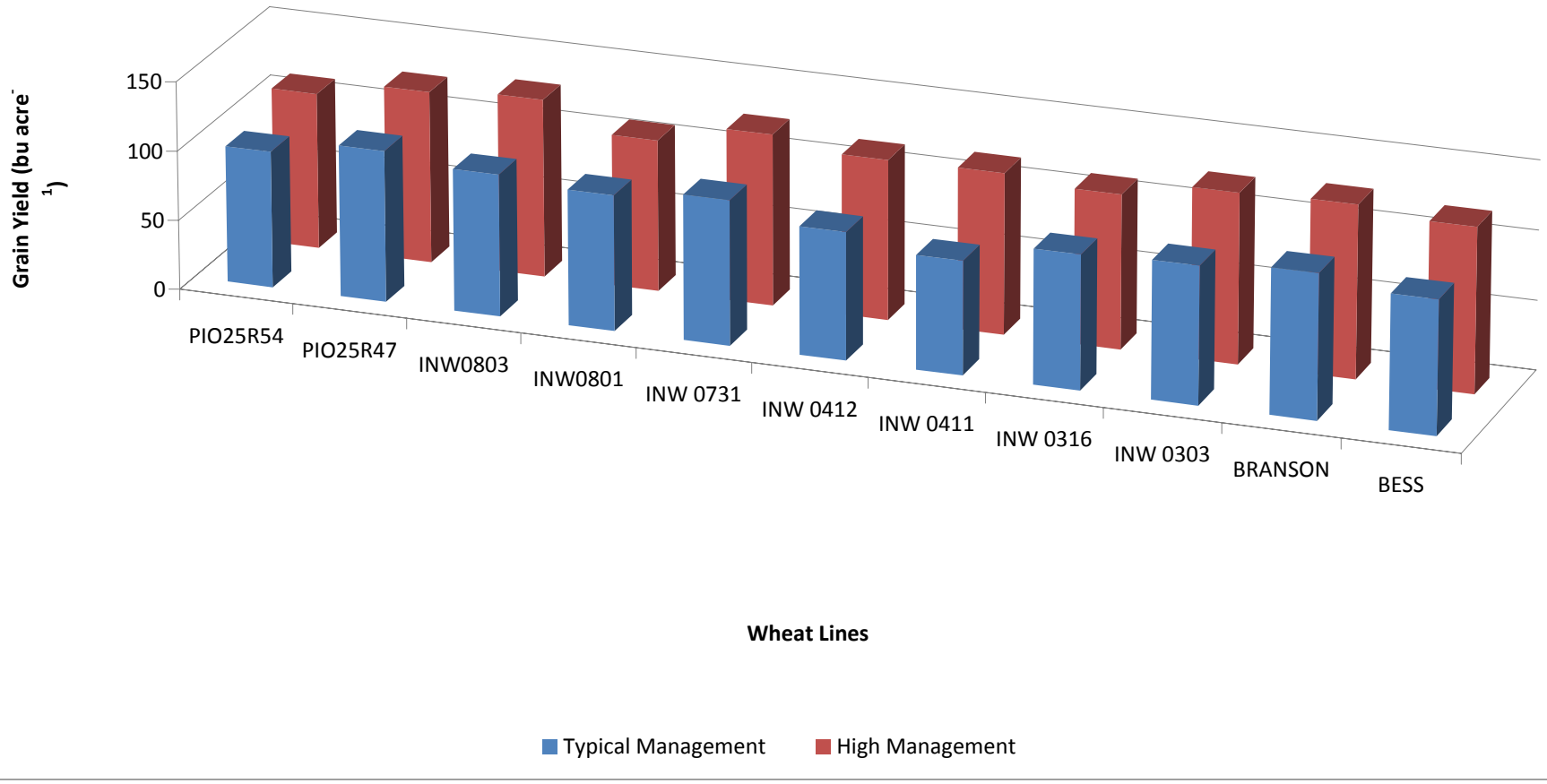
Entry	Cultivar/	Grain yield, bu/a				Average over W Lafayette and Evansville			
						Test	Heading	Plant	Straw
no.	designation	W. Lafayette	Evansville	WL-EV ave.	WL-EV ave.	weight	date	height	rating
					rank	lbs/bu	Julian	in.	0-9[1]
1	PIO25R47	123.8	125.9	124.9	2	57.9	133.6	38.4	5.0
2	PIO25R54	112.4	121.3	116.9	6	60.4	133.4	40.2	4.2
3	Branson	124.6	130.4	127.5	1	60.3	131.6	38.8	4.2
4	Bess	119.2	112.7	116.0	7	61.0	133.8	41.2	4.8
5	INW0303	122.7	118.4	120.5	5	58.4	132.2	34.6	2.2
6	INW0803	128.2	118.4	123.3	4	58.8	132.0	35.0	1.8
7	INW0316	111.2	111.4	111.3	9	60.4	132.8	36.2	2.6
8	INW0411	116.2	105.6	110.9	10	59.4	131.8	37.4	3.0
9	INW0412	115.4	109.4	112.4	8	62.8	133.8	45.0	4.0
10	INW0731	123.4	124.6	124.0	3	60.4	133.2	38.8	3.8
11	INW0801	109.0	106.7	107.9	11	57.7	131.4	35.8	2.4
No. of reps		3	3	6		2	5	5	5
Location means		117.4	117.1	117.3		59.8	132.6	38.1	3.2
CV %		3.1	5.8	4.7		-	8.0	2.7	12.9
LSD (0.05)		5.9	11.3	6.3		-	1.3	1.3	0.5
W Lafayette means				117.4		60.2	139.2	41.0	3.4
Evansville means				117.1		59.3	128.3	36.3	3.1

High management consisted of the following: seed treatment - Cruiser + Storcide II and Dividend Extreme; N/P/K - 35/90/00 at seeding plus topdress split application 95/00/00 (March 26) plus 40/00/00 (April 15); and applied Harmony Extra, Headline and Warrior/Baythroid per label instructions. Exptl Design: RCB, 3 replications. Plots: seeded 4' x 12', harvested 4' x 10'. Topdress applications were done on the same dates at both locations, due to wet soil conditions throughout the spring season, although certainly the applications were applied late in the season at Evansville.

[1]0=no lodging and stiff straw to 9=severe lodging.

Wheat Grain Yield Comparison of Typical and High Management Production Practices - West Lafayette and Evansville IN

Herb Ohm, Purdue University



Posey County Management Test, Mount Vernon, IN, 2008

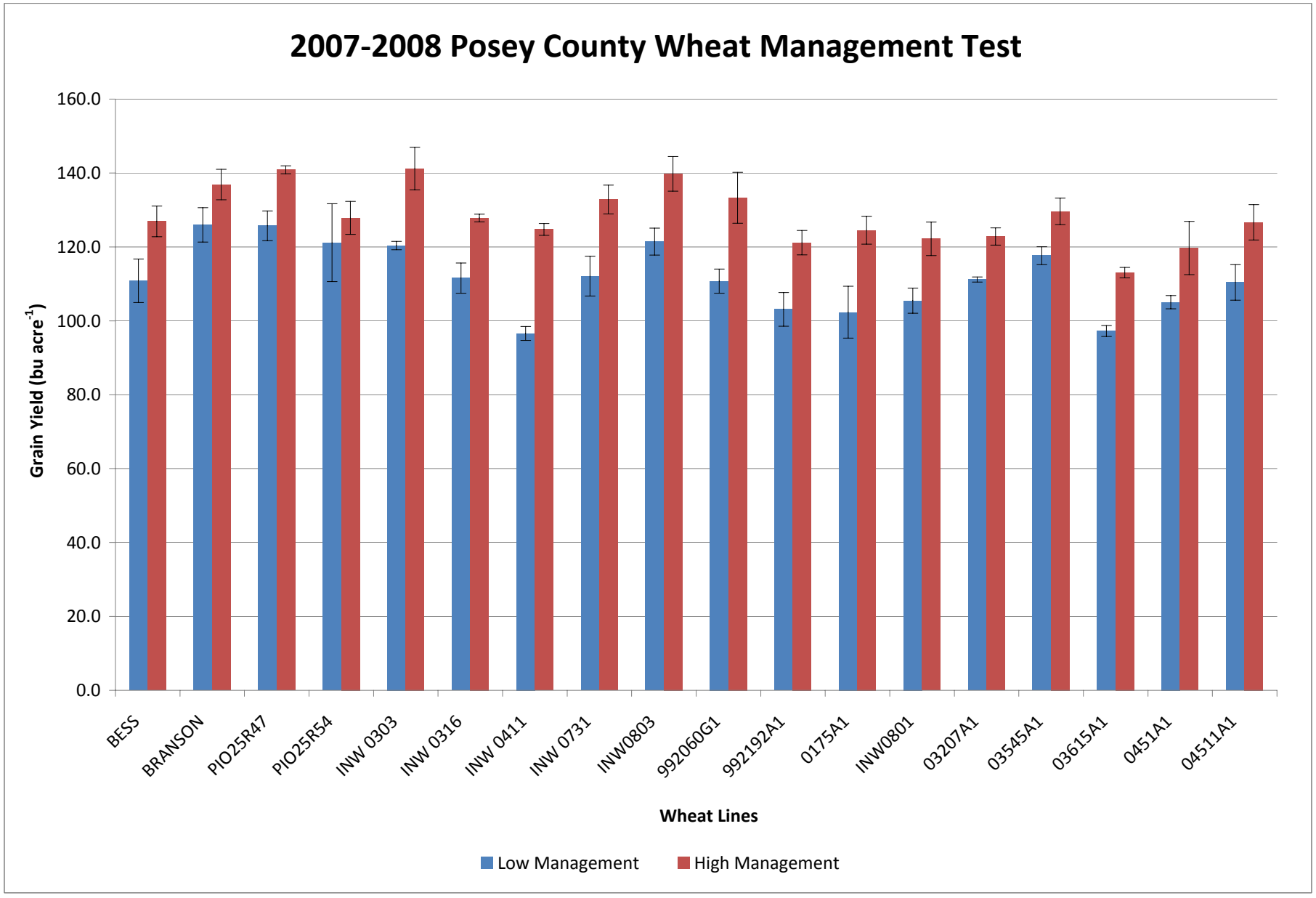
Collaborators: Chuck Mansfield, Jon Neufelder, Herb Ohm

	Low Input Management Test										High Input Management Test										Differences (H-L)		
	Level	----------YLD----------				------TWT------			-----MOIST-----			Level	----------YLD----------				------TWT------			-----MOIST-----					
	Entry	N	Mean	Std	Rnk	N	Mean	Std	N	Mean	Std	Entry	N	Mean	Std	Rnk	N	Mean	Std	N	Mean	Std	YLD	TWT	MOIST
BESS	82	3	110.8	4.2	**10**	3	56.4	0.7	3	12.9	0.1	82	3	126.9	5.9	**10**	3	57.8	0.5	3	12.5	0.2	16.1	1.4	-0.4
BRANSON	83	3	125.9	4.1	**1**	3	56.5	0.6	3	12.6	0.2	83	3	136.9	4.7	**4**	3	57.5	0.5	3	12.5	0.1	10.9	1.1	-0.1
PIO25R47	84	3	125.7	1.0	**2**	3	55.5	0.5	3	13.1	0.3	84	3	140.9	4.0	**2**	3	56.5	1.7	3	15.5	0.6	15.2	1.0	2.3
PIO25R54	85	3	121.1	4.5	**4**	3	56.4	0.4	3	12.2	0.6	85	3	127.8	10.5	**8**	3	57.1	0.4	3	12.1	0.1	6.7	0.7	-0.1
INW 0303	86	3	120.4	5.8	**5**	3	55.2	0.2	3	12.3	0.1	86	3	141.2	1.1	**1**	3	57.0	0.3	3	12.0	0.3	20.8	1.8	-0.3
INW 0316	87	3	111.6	1.0	**8**	3	57.3	0.2	3	12.2	0.0	87	3	127.8	4.1	**8**	3	57.7	0.9	3	12.0	0.2	16.3	0.4	-0.2
INW 0411	88	3	96.6	1.6	**18**	3	55.1	0.6	3	11.8	0.1	88	3	124.7	1.9	**12**	3	56.7	0.5	3	11.5	0.1	28.2	1.6	-0.3
INW 0731	89	3	112.1	3.9	**7**	3	56.5	0.3	3	12.5	0.1	89	3	132.8	5.4	**6**	3	57.2	0.2	3	12.4	0.4	20.8	0.7	-0.1
INW0803	90	3	121.4	4.7	**3**	3	55.4	0.9	3	12.1	0.2	90	3	139.8	3.7	**3**	3	57.1	0.7	3	11.9	0.3	18.3	1.7	-0.2
992060G1	91	3	110.7	6.9	**11**	3	52.8	2.0	3	12.0	0.2	91	3	133.3	3.3	**5**	3	54.9	0.4	3	12.2	0.3	22.6	2.1	0.2
992192A1	92	3	103.1	3.3	**15**	3	54.4	1.9	3	11.8	0.7	92	3	121.2	4.5	**16**	3	56.1	0.8	3	11.7	0.2	18.1	1.7	-0.1
0175A1	93	3	102.3	3.8	**16**	3	55.8	1.1	3	12.2	0.0	93	3	124.5	7.0	**13**	3	56.4	1.5	3	12.0	0.2	22.2	0.7	-0.2
INW0801	94	3	105.4	4.5	**13**	3	54.3	0.6	3	11.8	0.3	94	3	122.2	3.4	**15**	3	54.1	0.5	3	12.0	0.3	16.8	-0.2	0.1
03207A1	95	3	111.2	2.3	**9**	3	56.4	0.4	3	12.1	0.3	95	3	122.8	0.7	**14**	3	57.8	0.9	3	12.1	0.2	11.7	1.4	0.0
03545A1	96	3	117.6	3.6	**6**	3	56.0	0.2	3	12.1	0.1	96	3	129.6	2.4	**7**	3	56.9	0.2	3	13.0	0.3	12.0	0.9	0.9
03615A1	97	3	97.3	1.4	**17**	3	57.5	0.1	3	13.3	0.1	97	3	113.0	1.5	**18**	3	57.7	0.9	3	14.3	0.3	15.8	0.2	1.0
0451A1	98	3	105.0	7.2	**14**	3	58.0	0.8	3	12.5	0.3	98	3	119.7	1.8	**17**	3	58.2	0.4	3	13.5	0.5	14.7	0.2	1.0
04511A1	99	3	110.4	4.8	**12**	3	56.2	0.6	3	12.0	0.3	99	3	126.6	4.8	**11**	3	57.0	0.2	3	12.4	0.2	16.2	0.8	0.5
																							16.8	1.0	0.2

Reps	3	3	3	3	3	3		
Mean	111.6	55.9	12.3	128.4	56.9	12.5		
CV	3.8	1.5	2.4	3.5	1.3	2.5		
LSD	7.0	1.4	0.5	7.5	1.3	0.5		

High management consisted of the following: seed treatment - Cruiser + Storcide II and Dividend Extreme; N/P/K - 35/90/00 at seeding plus topdress split application 90/00/00 (March 29) plus 40/00/00 (April 15); and Harmony Extra, Headline and Warrior/Baythroid per label instructions.
Low management consisted of the following: seed treatment - Storcide II and Dividend Extreme; N/P/K - 35/90/00 at seeding plus topdress application 90/00/00 (March 29); and Harmony Extra (April 15) per label instructions.
Split Block: high, low management. Three replications. Plots: 5' x 30'.

Chuck Mansfield, Email: CMansfield@vinu.edu Jon Neufelder, Email: neufelde@purdue.edu Herb Ohm, Email: hohm@purdue.edu


2007-2008 Posey County Wheat Management Test
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Grain Yield (bu acre-1)
BESS
BRANSON
PIO25R47
PIO25R54
INW 0303
INW 0316
INW 0411
INW 0731
INW0803
992060G1
992192A1
0175A1
INW0801
03207A1
03545A1
03615A1
0451A1
04511A1
Wheat Lines
Low Management
High Management