



UNIVERSITY OF WISCONSIN AGRONOMY, SOYBEAN RESEARCH, UNIVERSITY OF WISCONSIN-EXTENSION

Intensive Winter Wheat Management – 2019

Selected Inputs

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This research trial was conducted at the Arlington Agricultural Research Station to assess 10 management levels with varying inputs on the yield, grain quality, and disease incidence on 2 soft red winter wheat varieties.

Table 1. Materials and methods.

Year:	2018-2019
Expt. No.	19094
Title:	Intensive Wheat Management-Selected Inputs
Personnel:	Shawn Conley, John Gaska, Adam Roth, Spyridon Mourtzinis, Brian Mueller, and Damon Smith
Organization:	University of Wisconsin-Madison, Depts. of Agronomy and Plant Pathology
Supported by:	Wisconsin Crop Improvement Association
Location:	Arlington Agricultural Research Station, Arlington, WI
FIELD INFORMATION	
Field:	248E
Previous Crop:	Soybean
Tillage:	No-tillage
EXPERIMENTAL PROCEDURE	
Exp. Design:	RCB
Replicates:	4
Variables:	10 management treatments 2 varieties
Plot Size:	Planted: 8' x 25' Harvested: 5' x 21'
Row Spacing:	7.5"
Cultivars:	FS624 and PiP735
Planting:	Date: 24-Sep-18 Equipment: No till plot planter Rate: variable with treatment Depth: 1"
Harvesting:	Date: 24-Jul-19 Equipment: 2010 Almaco SPC-40 plot combine

Table 2. Yield, grain quality, and plant disease data among 2 varieties and ten management levels.

Name ¹	Variety	Inputs						Grain yield	Test weight	TKW	Fusarium head scab	
		Seeding rate	N fertilizer	PGR	Fungicide	Fungicide	Foliar nutrients				Incidence	Severity
		million	Nitrogen	Palisade	Trivapro	Miravis Ace	N,S,B,Mn,Fe,Zn					
		seeds/ac	lbs/ac	12 fl oz/a @F6	13.7 fl oz/a @F9	13.7 fl oz/a @F10.5.1	F9 and F10.5.1				%	%
Current base		1.50	55	N	N	N	N	99.2	53.9	36.0	0.9	12.5
Mid base		1.75	85	N	N	Y	N	110.0	55.5	36.6	0.3	1.3
Mid-FHB fung		1.75	85	N	N	N	N	103.5	54.2	33.6	1.0	11.9
Mid-FHB fung+micros		1.75	85	N	N	N	Y	102.9	54.4	35.0	0.8	7.5
Mid+all		1.75	85	Y	Y	Y	Y	113.5	55.5	34.5	0.1	0.1
High base		2.00	110+30 (split)	Y	Y	Y	Y	112.4	55.7	34.8	0.4	0.4
High-FHB fung		2.00	110+30 (split)	Y	Y	N	Y	110.2	54.9	33.4	0.9	4.1
High-rust fung		2.00	110+30 (split)	Y	N	Y	Y	112.2	55.8	34.7	0.3	0.8
High-micros		2.00	110+30 (split)	Y	Y	Y	N	116.2	55.6	34.8	0.1	0.1
High-all		2.00	110+30 (split)	N	N	Y	N	111.9	55.8	35.7	0.3	0.3
	FS624							106.3	55.3	38.4	0.8	6.5
	PIP735							112.1	55.0	31.4	0.2	1.3
Current base	FS624	1.50	55	N	N	N	N	98.6	54.0	38.2	1.0	18.8
Mid base	FS624	1.75	85	N	N	Y	N	106.4	55.5	39.4	0.5	2.5
Mid-FHB fung	FS624	1.75	85	N	N	N	N	97.0	54.1	35.8	1.8	22.5
Mid-FHB fung+micros	FS624	1.75	85	N	N	N	Y	100.5	54.7	39.5	1.4	12.5
Mid+all	FS624	1.75	85	Y	Y	Y	Y	111.2	56.0	37.8	0.3	0.3
High base	FS624	2.00	110+30 (split)	Y	Y	Y	Y	108.0	56.0	38.7	0.8	0.8
High-FHB fung	FS624	2.00	110+30 (split)	Y	Y	N	Y	108.8	55.4	38.0	1.4	6.8
High-rust fung	FS624	2.00	110+30 (split)	Y	N	Y	Y	107.6	55.8	38.3	0.3	0.3
High-micros	FS624	2.00	110+30 (split)	Y	Y	Y	N	116.1	55.9	38.8	0.3	0.3
High-all	FS624	2.00	110+30 (split)	N	N	Y	N	109.1	55.9	39.5	0.5	0.5
Current base	PIP735	1.50	55	N	N	N	N	99.9	53.8	33.9	0.9	6.3
Mid base	PIP735	1.75	85	N	N	Y	N	113.6	55.6	33.8	0.0	0.0
Mid-FHB fung	PIP735	1.75	85	N	N	N	N	110.0	54.4	31.3	0.3	1.3
Mid-FHB fung+micros	PIP735	1.75	85	N	N	N	Y	105.3	54.2	30.5	0.3	2.5
Mid+all	PIP735	1.75	85	Y	Y	Y	Y	115.8	55.1	31.1	0.0	0.0
High base	PIP735	2.00	110+30 (split)	Y	Y	Y	Y	116.8	55.5	30.9	0.0	0.0
High-FHB fung	PIP735	2.00	110+30 (split)	Y	Y	N	Y	111.6	54.4	28.8	0.5	1.5
High-rust fung	PIP735	2.00	110+30 (split)	Y	N	Y	Y	116.7	55.9	31.0	0.3	1.3
High-micros	PIP735	2.00	110+30 (split)	Y	Y	Y	N	116.3	55.4	30.9	0.0	0.0
High-all	PIP735	2.00	110+30 (split)	N	N	Y	N	114.8	55.8	31.9	0.0	0.0
Means								109.2	55.2	34.9	0.5	3.9
Probability (Pr>F)												
Management								<.0001	<.0001	0.1266	0.0005	<.0001
Variety								0.0100	0.1438	0.0010	0.0190	<.0001
Mgt x Variety								0.0645	0.8742	0.3232	0.3754	0.0552

1: (+) indicates addition to base, (-) indicates deletion from base