

Jedd
2008 VARIETAL RECOMMENDATION

Jedd
(exp. # BZ9M03-1044)

WestBred, LLC request that 'Jedd' hard red spring wheat be considered for "Variety Recommendation in the State of Montana".

A motion that Jedd be recommended as a hard red spring wheat for all irrigated and non-sawfly infested dryland areas of districts 1 through 6.

Jedd (exp.# BZ9M03-1044) is a semi-dwarf, hard red spring wheat that contains two patented genes (L1B S653N and L1D S653N) that confer tolerance to the BASF grass herbicide "Beyond" (imazimox). Jedd was developed by WestBred, LLC from the cross, 4* (4*Hank/ SWP 965-001)/Teal 11A. SWP 965-001 is a line that was developed by the Saskatchewan Wheat Pool by backcrossing Grandin to the SF-4 gene (L1D S53N) which confers tolerance to imazimox. Teal 11A is a mutated line out of the variety Teal that contains the L1B S653N gene for tolerance to imazimox. Application for PVP will be submitted.

Jedd is being released as a high quality hard red spring wheat that can be utilized by growers who have hard to control, grassy weed problems. For the 3 year period 2005 - 2007, (29 locations), the average per acre yield of Jedd in the MSU Intrastate Trials is 56.0 bushels, compared to McNeal at 50.4 bushels, Choteau at 53.9 bushels and Hank at 56.1 bushels. The average test weight has been 60.1 lbs, which is 2.3 pounds heavier than McNeal and .8 lbs heavier than Choteau and 3 lbs heavier than Hank. Protein levels have averaged 13.9%, which is .4 percentage points lower than McNeal or Choteau and .3 points lower than Hank. The average plant height of Jedd is 28 inches, which is 5 inches shorter than McNeal and 3 inches shorter than Choteau or Hank. The average heading date of Jedd is similar to Hank, 2 days earlier than Choteau and three days earlier than McNeal. See Table 1 for a summary of combined location/years averages, and Tables 2 through 11 for individual location/years averages.

Jedd continues to show tolerance to the biotypes of Hessian fly found in Washington, but no data is available for those biotypes found in Montana.

Milling and baking quality data from the 2005-2006 crops indicate that Jedd has quality comparable to the check varieties (Tables 14 and 15).

Disease/sawfly ratings for Jedd show it to be moderately susceptible to stripe rust (Table 13.). Jedd is a hollow stemmed variety, and is susceptible to cutting by the wheat stem sawfly (Table 12).

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Table 1 . 2005-2007 Spring Wheat Combined Locations Yield, Test Weight and Protein

29 location years

Cultivar/Line	Yield bu/ac 2005-2007			TW lbs/bu	Protein %	Heading Date	Plant Ht.
	Irrigated	Dryland	All Locations	2005-2007	2005-2007	2005-2007	2005-2007
location-years	11	18	29	29	29	29	29
MCNEAL	59.6	44.9	50.4	57.9	14.3	175	33
REEDER	69.8	47.9	56.2	59.9	14.5	173	33
HANK	70.2	47.5	56.1	57.1	14.2	172	31
CHOTEAU	65.7	46.7	53.9	59.3	14.3	174	31
VOLT	76.0	47.1	58.1	60.6	13.7	176	31
ONEAL (BZ999-592)	67.6	47.7	55.2	58.8	14.2	175	33
JEDD	68.6	48.3	56.0	60.1	13.9	172	28
AVG	66.2	46.2	55.1	59.1	14.2	174	31

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Table 2 . 2005-2007 Bozeman Irrigated Spring Wheat: Yield, Test Weight, Protein, Heading Date and Plt.Ht

3 location years

Cultivar/Line	Yield bu/ac	TW lbs/bu	Protein %	Heading Date	Plant Ht.
	2005-2007	2005-2007	2005-2007	2005-2007	2005-2007
location-years					
MCNEAL	52.3	58.1	15.0	182	35
REEDER	65.6	60.5	15.2	180	35
HANK	69.6	56.7	14.9	179	32
CHOTEAU	65.4	58.8	15.3	180	33
VOLT	76.3	61.3	14.2	183	33
ONEAL (BZ999-592)	64.9	58.6	14.8	182	35
JEDD	69.9	60.8	14.4	179	29
AVG	66.3	59.3	14.8	181	33

Table 3 . 2005-2007 Bozeman Dry Spring Wheat:Yield, Test Weight, Protein, Heading Date and Plt. Ht.

3 location years

Cultivar/Line	Yield bu/ac	TW lbs/bu	Protein %	Heading Date	Plant Ht.
	2005-2007	2005-2007	2005-2007	2005-2007	2005-2007
location-years					
MCNEAL	48.8	57.0	15.0	182	32
REEDER	57.5	60.1	15.3	179	34
HANK	56.3	56.0	15.4	179	30
CHOTEAU	51.9	57.8	15.6	180	31
VOLT	56.2	58.4	15.5	183	31
ONEAL (BZ999-592)	57.1	58.3	15.3	182	32
JEDD	55.3	59.3	14.6	178	27
AVG	54.7	58.1	15.2	180	31

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Table 4 . 2005-2007 Sidney Dry Spring Wheat: Yield, Test Weight, Protein, Heading Date and Plt. Ht.

3 location years

Cultivar/Line	Yield bu/ac	TW lbs/bu	Protein %	Heading Date	Plant Ht.
	2005-2007	2005-2007	2005-2007	2005-2007	2005-2007
MCNEAL	50.7	59.7	12.9	171	30
REEDER	54.0	61.5	13.1	169	30
HANK	52.2	59.7	11.8	168	27
CHOTEAU	50.2	61.4	12.8	170	28
VOLT	51.3	62.1	11.4	172	28
ONEAL (BZ999-592)	51.6	60.3	12.1	171	29
JEDD	53.2	62.1	12.0	167	25
AVG	51.9	61.0	12.3	170	28

Table 5 . 2005-2007 Sidney Irrigated Spring Wheat: Yield, Test Weight, Protein, Heading Date and Plt. Ht.

3 location years

Cultivar/Line	Yield bu/ac	TW lbs/bu	Protein %	Heading Date	Plant Ht.
	2005-2007	2005-2007	2005-2007	2005-2007	2005-2007
MCNEAL	61.1	59.1	13.5	174	33
REEDER	63.5	61.2	14.0	172	32
HANK	61.4	58.7	13.8	171	29
CHOTEAU	54.2	60.1	13.7	172	29
VOLT	61.7	60.3	13.1	176	30
ONEAL (BZ999-592)	62.4	58.9	13.6	174	34
JEDD	59.6	60.5	13.5	171	26
AVG	60.6	59.8	13.6	173	30

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Table 6. 2005-2007 Kalispell Spring Wheat: Yield, Test Weight, Protein, Heading Date and Plt. Ht.

3 location years

Cultivar/Line	Yield bu/ac	TW lbs/bu	Protein %	Heading Date	Plant Ht.
	2005-2007	2005-2007	2005-2007	2005-2007	2005-2007
MCNEAL	49.3	55.5	15.3	177	34
REEDER	76.7	58.9	15.4	174	36
HANK	67.1	55.8	15.0	174	33
CHOTEAU	64.3	59.3	15.4	175	33
VOLT	79.8	61.3	13.6	178	33
ONEAL (BZ999-592)	59.5	57.9	15.2	177	34
JEDD	60.2	59.7	14.5	174	29
AVG	65.3	58.3	14.9	176	33

Table 7 . 2005-2007 Moccasin Spring Wheat: Yield, Test Weight, Protein, Heading Date and Plt. Ht.

3 location years

Cultivar/Line	Yield bu/ac	TW lbs/bu	Protein %	Heading Date	Plant Ht.
	2005-2007	2005-2007	2005-2007	2005-2007	2005-2007
MCNEAL	33.8	56.6	14.9	179	34
REEDER	34.6	58.2	14.7	177	34
HANK	36.2	54.1	14.1	176	32
CHOTEAU	34.6	58.6	13.6	177	33
VOLT	34.7	60.1	13.0	179	32
ONEAL (BZ999-592)	32.9	57.6	14.8	178	34
JEDD	37.4	58.0	14.8	176	29
AVG	34.9	57.6	14.3	177	33

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Table 8. 2005-2007 Huntley Dry Spring Wheat: Yield, Test Weight, Protein, Heading Date and Plt. Ht.

3 location years

Cultivar/Line	Yield bu/ac	TW lbs/bu	Protein %	Heading Date	Plant Ht.
	2005-2007	2005-2007	2005-2007	2005-2007	2005-2007
MCNEAL	50.7	59.2	13.1	164	36
REEDER	52.4	60.5	13.2	162	35
HANK	51.0	58.7	12.5	162	32
CHOTEAU	50.1	59.7	13.2	163	33
VOLT	53.9	60.7	12.7	164	33
ONEAL (BZ999-592)	51.9	59.9	12.4	164	35
JEDD	50.0	60.2	12.6	163	30
AVG	51.4	59.8	12.8	163	33

Table 9. 2005-2007 Huntley Irrigated Spring Wheat : Yield, Test Weight, Protein, Heading Date and Plt. Ht.

3 location years

Cultivar/Line	Yield bu/ac	TW lbs/bu	Protein %	Heading Date	Plant Ht.
	2005-2007	2005-2007	2005-2007	2005-2007	2005-2007
MCNEAL	83.6	62.9	11.8	164	41
REEDER	75.0	63.0	12.4	162	43
HANK	89.0	61.2	12.2	163	37
CHOTEAU	85.4	62.4	12.1	164	38
VOLT	91.2	63.6	12.1	164	36
ONEAL (BZ999-592)	91.4	63.1	11.7	164	41
JEDD	92.7	63.2	12.1	163	34
AVG	86.9	62.8	12.1	163	39

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Table 10. 2005-2007 Conrad Spring Wheat: Yield, Test Weight, Protein, Heading Date and Plt. Ht.

3 location years

Cultivar/Line	Yield bu/ac	TW lbs/bu	Protein %	Heading Date	Plant Ht.
	2005-2007	2005-2007	2005-2007	2005-2007	2005-2007
MCNEAL	47.4	58.3	14.4	180	31
REEDER	50.1	59.4	14.8	179	32
HANK	47.9	56.9	15.1	178	31
CHOTEAU	51.9	59.5	14.7	180	30
VOLT	48.1	61.2	14.6	182	30
ONEAL (BZ999-592)	51.4	58.6	15.1	181	32
JEDD	51.6	60.4	14.1	179	27
AVG	49.8	59.2	14.7	180	30

Table 11. 2005-2007 Havre Spring Wheat: Yield, Test Weight, Protein, Heading Date and Plt. Ht.

3 location years

Cultivar/Line	Yield bu/ac	TW lbs/bu	Protein %	Heading Date	Plant Ht.
	2005-2007	2005-2007	2005-2007	2005-2007	2005-2007
MCNEAL	37.8	54.7	16.5	175	26
REEDER	38.5	56.3	15.8	173	28
HANK	41.1	54.4	16.3	171	26
CHOTEAU	41.3	55.8	15.9	173	26
VOLT	38.5	57.8	15.7	176	26
ONEAL (BZ999-592)	41.0	56.3	16.5	174	25
JEDD	42.1	57.9	15.6	171	23
AVG	40.0	56.2	16.0	173	26

Table 12. 2006, 2007 Bozeman Solid Stem Score and Havre Saw Fly Cutting

Cultivar/Line	Bozeman Solid Stem Score		Havre Saw Fly Cutting%	
	2006	2007	2006	2007
MCNEAL	6.8	7.4	14.5	15.5
REEDER	6.2	7.3	7.6	13.3
HANK	7.3	8.9	9.8	9.4
CHOTEAU	20.9	24.6	0.8	2.6
VOLT	6.9	8.5	17.3	12.9
ONEAL (BZ999-592)	6.5	7.8	5.3	4.7
JEDD	8.1	7.8	5.9	6.4

Table 13. 2006 Stripe rust rating Bozeman and Kalispell

VARIETY	Stripe Rust %	
	Bozeman	Kalispell
MCNEAL	86.7	82.7
Reeder	43.3	13.6
HANK	60.0	72.3
CHOTEAU	43.3	13.2
VOLT	0.0	4.8
ONEAL	43.3	74.2
JEDD	31.7	57.6

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Table 14. 2005 Advanced Spring Wheat Yield Trial Mill & Bake
Location: Means Across Locations (Bozeman, Havre, Sidney dryland, Moccasin)

Whole Grain Analysis			Flour Analysis				Mixograph Analysis			Bake Analysis							
Identity	Pedigree	Class	Wheat Protein, % (12% <i>m.b.</i>)	Single Kernel Hardness	Flour Protein, % (14% <i>m.b.</i>)	Flour Yield, %	Flour Ash, %	Wheat Ash, %	Mixograph Type	Mixing Tolerance	Mixing Time, min	Mixo Water Absorption, %	Bake Mixing Time, min	Bake Water Absorption, %	Loaf Volume	Crumb Grain Score	
PI574642	MCNEAL	HRS	15.0	90.6	65.1	13.7	0.44	1.82			6.0	6.2	64.9	10.0	77.0	1220	3.3
ND 695	Reeder	HRS	14.6	80.1	67.0	13.8	0.39	1.64			3.5	3.3	61.6	4.1	71.7	1119	3.5
BZ992322	HANK	HRS	14.1	71.2	66.7	13.3	0.43	1.80			4.8	6.2	63.3	9.5	74.7	1178	3.5
PI633974	CHOTEAU	HRS	13.7	74.3	67.0	13.0	0.37	1.60			4.5	3.6	63.2	5.6	73.2	1155	3.8
ACS52610	VOLT	HRS	13.2	92.7	66.1	12.0	0.44	1.61			6.3	6.0	62.6	13.6	77.2	1065	3.5
BZ999592	ONEAL	HRS	14.7	91.9	66.8	13.3	0.44	1.74			5.3	6.7	64.2	12.1	78.2	1178	4.0
BZ9M1044	JEDD	HRS	14.4	89.5	67.0	13.4	0.48	1.75			5.0	5.0	64.0	7.8	74.2	1171	3.8
<i>Means Across Locations MIN</i>			12.9	63.8	60.7	11.9	0.36	1.55			2.0	2.2	60.6	2.7	71.0	958	2.5
<i>Means Across Locations MAX</i>			15.0	99.8	70.7	13.9	0.51	1.85			6.5	8.1	66.8	22.3	81.7	1278	4.0
<i>Means Across Locations AVE</i>			14.1	81.2	67.7	13.1	0.42	1.68			4.4	4.6	63.3	8.1	74.2	1138	3.7

Table 15. 2006 Advanced Spring Wheat Yield Trial Mill & Bake
Location: Means Across Locations (Bozeman, Havre, Sidney (3103), Moccasin)

Whole Grain Analysis			Flour Analysis				Mixograph Analysis			Bake Analysis							
Identity	Pedigree	Class	Wheat Protein, % (12% <i>m.b.</i>)	Single Kernel Hardness	Flour Protein, % (14% <i>m.b.</i>)	Flour Yield, %	Flour Ash, %	Wheat Ash, %	Mixograph Type	Mixing Tolerance	Mixing Time, min	Mixo Water Absorption, %	Bake Mixing Time, min	Bake Water Absorption, %	Loaf Volume	Crumb Grain Score	
PI574642	MCNEAL	HRS	15.09	92.38	63.95	13.33	0.49	1.75			5.75	6.08	64.40	9.53	76.35	1208	4.00
ND 695	Reeder	HRS	14.77	80.68	65.33	13.20	0.42	1.59			3.50	3.80	62.95	5.05	73.03	1148	3.50
BZ992322	HANK	HRS	14.79	73.93	66.45	13.65	0.46	1.68			4.25	6.70	64.15	9.68	74.60	1174	3.75
PI633974	CHOTEAU	HRS	15.00	74.78	65.75	13.58	0.42	1.60			3.75	3.80	63.83	5.18	73.15	1191	3.50
ACS52610	VOLT	HRS	13.93	89.98	66.30	12.33	0.48	1.62			5.00	5.88	62.78	10.43	75.73	995	4.00
BZ999592	ONEAL	HRS	14.90	92.03	65.75	13.30	0.46	1.74			5.50	6.40	64.13	12.38	77.33	1170	4.00
BZ9M1044	JEDD	HRS	14.72	90.05	66.28	13.23	0.49	1.67			4.50	4.98	64.13	8.00	74.70	1151	3.75
<i>NURSERY MIN</i>			13.6	71.6	62.6	12.1	0.39	1.49			2.0	2.1	61.2	3.0	71.4	995	2.5
<i>NURSERY MAX</i>			15.7	99.3	69.1	14.0	0.51	1.80			6.0	7.0	67.6	15.6	79.6	1238	4.0
<i>NURSERY AVE</i>			14.7	83.9	66.3	13.1	0.45	1.65			4.3	4.7	63.8	7.7	74.2	1139	3.6