

2006 VARIETAL RECOMMENDATION

WestBred, LLC requests that **'Norris' (MTCL0316)** imidazolinone-tolerant, hard red winter wheat be considered for "Variety Recommendation in the State of Montana".

We move that Norris be recommended as a hard red winter wheat for Districts 2, 3 and 4.

WestBred, LLC requests that **'Bynum' (MTCL0318)** imidazolinone-tolerant, solid-stemmed, hard red winter wheat be considered for "Variety Recommendation in the State of Montana".

We move that 'Bynum' be recommended as a hard red winter wheat for the sawfly areas of District 4 and 5.

PVP will be applied for by Montana State University.

Submitted by Craig Cook, WestBred, LLC

Table 1. Description of nurseries and data sets describing the performance of Norris and Bynum in comparison to elite and Clearfield check cultivars in Montana, 2003-2005.								
Year	Trial	Locations planted	Locations harvested	Locations for quality evaluation	Checks			
					Neeley	Rampart	Above	MT1159CL
Combined data vs. Above								
2003	Prel. CL Screening - 2X	2	2	0			x	
Combined data vs. MT1159CL								
2005	Prel. CL Screening - 2X	4	4	?				x
2005	Off Station	16	16	0				x
Combined data vs. Elite checks								
2003	Prel. CL Screening - 0X	4	4	3	x	x	x	
2004	Advanced	6	6	4	x	x		
2004	CL Qualification-0X	4	3	2 ⁺	x	x	x	x
2005	Intrastate	8	8	4	x	x	x	x
2005	Off Station	16	16	0	x	x		x
2005	CL Qualification-0X	4	4	?	x		x	x
2005	Prel. CL Screening - 0X	1	1	?	x			x
Combined data vs. Clearfield checks								
2004	WestBred	4	4	2		(x)	x	x
2004	CL Qualification-0X	4	3	2 ⁺			x	x
2004	CL Qualification-1X	4	3	2			x	x
2004	CL Qualification-2X	4	3	2			x	x
2005	CL Qualification-0X	4	4	?			x	x
2005	CL Qualification-1X	3	3	?			x	x
2005	CL Qualification-2X	4	4	?			x	x
Total		68	65	19+				
Also:								
2005	Sawfly Test (Bynum only)	6	5	4	x	x		

Table 2. Grain yield of Norris and Bynum and check cultivars in various groupings, 2003-2005.						
		vs. Clearfield checks			vs. Elite checks	
	all trials	vs. both	vs. Above	vs. MT1159CL	vs. both	vs. Neeley
Neeley					57.9	59.3
MTCL0306	64.5	74.8	71.4	66.2	57.4	59.4
Norris	67.7	76.8	73.5	69.5	60.1	62.7
Bynum	61.0	71.2	67.5	63.2	52.5	55.3
Rampart					53.4	
MT1159CL		65.8		59.7		
Above		64.9	63.9			
LSD 5%	3.5	6.1	4.5	3.0	3.3	3.8
CV (%)	15.6	17.2	14.3	12.1	12.6	14.8
# env.	65	31	37	52	37	42

Table 3. Grain yield of Norris and Bynum and check cultivars in 12 Montana trials, 2003-2005.												
	2003		2004				2005 ^{1/}					
	Prelim. CL - NT	Prelim. CL - Tr	CLQual NT	CLQual Tr	Adv	West-Bred	Prelim. CL - NT	Prelim. CL - Tr	CLQual NT	CLQual Tr	Int	Off
Neeley	47.9		106.4		65.0		106.7		60.1		58.0	48.2
MTCL0306	49.8	70.5	98.3	94.4	63.0	61.3	102.6	68.7	67.1	70.7	66.0	46.5
Norris	49.8	62.3	95.9	92.3	60.9	62.8	110.8	79.9	75.0	68.9	69.2	50.2
Bynum	44.0	56.1	87.7	83.6	55.0	54.9	88.6	78.6	73.2	69.1	62.2	42.2
Rampart	42.6		91.1		54.3	55.5					56.2	43.1
MT1159CL			83.3	80.7		52.1	90.5	74.7	66.9	62.4	62.7	42.4
Above	52.6	71.3	79.6	69.3		51.2			65.7	61.7	62.2	
LSD 5%	6.5	ns	14.7	5.9	5.5	5.7	15.6	ns	ns	ns	ns	2.9
CV (%)	9.0	5.3	9.0	6.3	7.7	5.5	6.9	15.7	21.9	18.3	18.1	9.1
# env.	4	2	3	7	6	3	1	4	4	7	8	16

^{1/} yields of Above, MTCL0306, and Neeley severely affected by stripe rust at Kalispell in 2005.

Table 4. Mean grain yield and agronomic characteristics of Norris and Bynum and Clearfield check cultivars in 2003-2005 (31 location-years).						
vs. Clearfield Checks						
	Grain yield	Test weight	Heading date	Plant height	Grain protein	Crop tolerance
	bu/a	lb/bu	Julian	in.	%	2X/0X
MTCL0306	74.8	60.3	159.6	36.9	13.2	0.978
Norris	76.8	61.1	158.7	38.2	12.8	0.949
Bynum	71.2	61.4	159.7	37.6	13.9	0.956
MT1159CL	65.8	59.0	161.9	35.1	13.0	0.920
Above	64.9	59.8	156.5	33.9	13.0	0.862
LSD 5%	6.1	0.9	0.6	0.7	0.3	ns
CV (%)	17.2	2.9	0.6	3.9	4.6	9.0
# env.	31	32	26	28	32	7

Table 5. Mean grain yield and agronomic characteristics of Norris and Bynum and MT1159CL check in 2003-2005 (52 location-years).					
vs. MT1159CL Check					
	Grain yield	Test weight	Heading date	Plant height	Grain protein
	bu/a	lb/bu	Julian	in.	%
MTCL0306	66.2	59.7	160.6	36.4	13.6
Norris	69.5	60.4	159.7	37.5	12.9
Bynum	63.2	60.8	160.8	36.8	14.1
MT1159CL	59.7	58.3	162.8	34.9	13.3
LSD 5%	3.0	0.6	0.4	0.5	0.2
CV (%)	12.1	2.6	0.5	3.7	4.6
# env.	52	53	34	49	53

Table 6. Mean grain yield and agronomic characteristics of Norris and Bynum and elite check cultivars in 2003-2005 (37 location-years).							
vs. Elite Checks							
	Grain yield	Test weight	Winter survival	Heading date	Plant height	Grain protein	Stem solidness
	bu/a	lb/bu	%	Julian	in.	%	5-25 scale
Neeley	57.9	58.6	58.3	165.8	35.0	13.7	6.0
MTCL0306	57.4	59.8	63.3	161.2	34.1	13.8	
Norris	60.1	60.3	61.7	160.3	34.9	13.1	
Bynum	52.5	60.3	52.9	161.6	34.2	14.5	17.8
Rampart	53.4	59.6	53.6	163.6	34.7	14.3	19.8
LSD 5%	3.3	0.7	ns	0.8	0.6	0.3	2.0
CV (%)	12.6	2.7	13.3	0.8	3.7	4.9	11.8
# env.	37	37	5	21	36	37	7

Table 7. Means for end-use quality characteristics of MTCL lines and Clearfield check cultivars in four Montana Trials in 2003-04 (8 location years).

Line	Flour Tield	Flour Protein	Flour ash	Mix tolerance	Bake mix time	Bake abs.	Loaf volume	Crumb grain
	%	%	%		min	%	cc	
Bynum (MTCL0318)	70.70	12.70	0.37	3.90	6.40	71.10	1073	3.60
Norris (MTCL0316)	68.20	11.60	0.35	4.30	6.20	70.20	990	3.00
MT1159CL	70.00	11.80	0.37	4.00	4.30	38.00	972	3.00
Above	66.80	12.10	0.37	3.50	3.20	67.90	926	3.00
LSD 5%	1.4	0.5	ns	ns	1.3	1.7	52	ns
CV %	2	4.4	6.7	30.1	24.9	2.5	5.1	19.6
# envir.	8	8	8	8	8	8	8	8

Table 8. Means for end-use quality characteristics of MTCL lines and elite check cultivars in three Montana trials in 2003-04 (9 location years).

Line	Flour Tield	Flour Protein	Flour ash	Mix tolerance	Bake mix time	Bake abs.	Loaf volume	Crumb grain
	%	%	%		min	%	cc	
Rampart	67.2	13	38	4.1	7.6	72.7	1114	3.5
Bynum (MTCL0318)	69.5	13.2	0.37	3.4	6.7	72.1	1094	3.5
Norris (MTCL0316)	67.6	11.8	0.36	4.9	7.7	71.1	1061	3.3
Neeley	65.9	12.2	0.38	5	7.4	71.1	1055	3.5
LSD 5%	1.5	0.6	0.02	0.9	ns	ns	44	ns
CV %	2.4	5.2	4.7	21	18.2	2.6	4.3	16.7
# envir.	9	9	9	9	9	9	9	9