

2008 SPRING AND DURUM WHEAT VARIETY RECOMMENDATION MOTIONS

(Motions 1-5 submitted by Dr. Luther Talbert, Plant Sciences and Plant Pathology Dept. MSU)

- 1) A motion to remove AgriPro Knudson from the spring wheat variety recommendation list, effective February 2008.**

Mr. Joe Smith of AgriPro has asked us to remove this variety from the recommendation list.

- 2) A motion to remove Fortuna and Scholar from the spring wheat variety recommendation list, effective February 2008.**

Fortuna was released in 1966 and has been a longtime variety primarily grown for resistance to the wheat stem sawfly and although there is almost 5% of the spring wheat acreage seeded to Fortuna we feel there are better varieties available to the producers. Our newer release, Choteau has more solid stems and shows as good as or better resistance to the sawfly than Fortuna with higher yields across locations. Scholar was released in 1998 and is recommended for dryland production in districts 4, 5 and 6. Currently, Scholar is being grown on about 1% of the acreage and there is no certified or registered seed being grown in Montana. Outlook, Choteau and Vida yield better than Scholar in those districts and we feel they would be better choices.

- 3) A motion to remove Ernest from the spring wheat variety recommendation list, effective, February 2009.**

Ernest is also an older variety released in 1995 by NDSU. Again we feel that Choteau would be a better option for producers in sawfly regions in districts 2, 4 and 6 where it is currently recommended. The reason we are delaying the effective date is that there were about 450 acres of registered or certified seed grown in 2007 and this will give those producers notice.

- 4) A motion to remove WestBred Express and WestBred 936 from the spring wheat recommendation list, effective February 2008.**

These varieties were released by WestBred, LLC in 1991 and 1992, respectively and are currently being grown on less than 1 % of acreage. They are recommended for irrigated production in districts 1,2,3,4, and 6. There is some acreage of certified and/or registered seed being produced by Townsend Seed and WestBred,LLC.

- 5) A motion to remove Ben, Maier and Monroe from the durum wheat variety recommendation list, effective February 2008.**

The durum acreage seeded to these varieties was 1% or less and there was no certified or registered seed produced in 2007. The other recommended durums, AC Avonlea, Alzada and Mountrail show better yields and have acceptable durum quality traits.

(Motions 6-7 submitted by Mr. Joe Anderson, AgriPro Wheat)

- 6) A motion to recommend Kelby hard red spring wheat for districts 1, 4 and 5 under dryland conditions and district 2 under irrigated conditions.**
- 7) A motion to recommend Kuntz hard red spring wheat for districts 2 and 3 under irrigation.**

(Motions 8-10 submitted by Mr. Craig Cook, WestBred, LLC, Inc.)

- 8) A motion that Volt be recommended as a hard red spring wheat for all irrigated districts in Montana.**
- 9) A motion that Jedd be recommended as a hard red spring wheat for all irrigated and non-sawfly infested dryland areas of districts 1-6 in Montana.**
- 10) A motion that ONeal be recommended as a hard red spring wheat for dryland in districts 3,4,5,6 in Montana.**

TABLE OF PAIRED T-TEST RESULTS

GRAIN YIELD (BU/AC)

REFERENCE MEAN: MCNEAL 55.9 (N= 49)

ID	NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
CI 13596	FORTUNA	52.6	49	-3.2	-2.4	.020
PI592761	ERNEST	52.9	49	-2.9	-3.2	.002
PI607557	SCHOLAR	58.0	40	-.3	-.2	.854
ND 695	REEDER	59.8	49	3.9	2.8	.007
BZ992588	CONAN	54.9	49	-1.0	-.7	.473
BZ992322	HANK	60.4	49	4.6	4.1	.000
PI632252	OUTLOOK	59.6	49	3.7	4.9	.000
PI633974	CHOTEAU	58.1	49	2.2	1.9	.062
PI642366	VIDA	61.9	49	6.1	5.4	.000
AGRIPRO1	NORPRO	58.2	49	2.3	2.3	.029
AGRIPRO3	FREYR	59.0	39	3.2	1.9	.060
BZ996434	CORBIN	55.7	39	-.5	-.3	.745

GRAIN TEST WEIGHT (LB/BU)

REFERENCE MEAN: MCNEAL 58.3 (N= 49)

ID	NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
CI 13596	FORTUNA	60.0	49	1.7	6.2	.000
PI592761	ERNEST	59.5	49	1.2	5.4	.000
PI607557	SCHOLAR	60.1	40	1.7	5.5	.000
ND 695	REEDER	59.9	49	1.6	6.9	.000
BZ992588	CONAN	59.3	49	1.1	3.9	.000
BZ992322	HANK	57.5	49	-.8	-3.5	.001
PI632252	OUTLOOK	57.8	49	-.5	-3.0	.004
PI633974	CHOTEAU	59.5	49	1.2	5.9	.000
PI642366	VIDA	58.8	49	.5	2.7	.009
AGRIPRO1	NORPRO	58.5	49	.3	1.0	.343
AGRIPRO3	FREYR	60.4	39	1.8	6.9	.000
BZ996434	CORBIN	59.8	39	1.5	5.7	.000

HEADING DATE (JULIAN DAYS; 175= June 24)

REFERENCE MEAN: MCNEAL 175.9 (N= 49)

ID	NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
CI 13596	FORTUNA	174.3	49	-1.6	-9.6	.000
PI592761	ERNEST	174.8	49	-1.1	-6.0	.000
PI607557	SCHOLAR	175.9	40	.1	.5	.615
ND 695	REEDER	174.0	49	-1.9	-11.2	.000
BZ992588	CONAN	173.9	49	-2.0	-13.4	.000
BZ992322	HANK	172.8	49	-3.1	-13.2	.000
PI632252	OUTLOOK	176.7	49	.8	5.3	.000
PI633974	CHOTEAU	174.3	49	-1.6	-9.5	.000
PI642366	VIDA	175.2	49	-.7	-4.1	.000
AGRIPRO1	NORPRO	174.6	49	-1.3	-6.8	.000
AGRIPRO3	FREYR	173.6	39	-1.9	-10.9	.000
BZ996434	CORBIN	172.2	39	-3.1	-15.0	.000

TABLE OF PAIRED T-TEST RESULTS (CONT.)

PLANT HEIGHT (INCHES)

REFERENCE MEAN: MCNEAL 32.9 (N= 49)

ID	NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
CI 13596	FORTUNA	38.1	49	5.1	15.5	.000
PI592761	ERNEST	37.7	49	4.7	18.8	.000
PI607557	SCHOLAR	36.7	40	3.6	10.8	.000
ND 695	REEDER	33.5	49	.5	1.8	.071
BZ992588	CONAN	30.5	49	-2.4	-9.1	.000
BZ992322	HANK	30.6	49	-2.3	-9.3	.000
PI632252	OUTLOOK	32.9	49	-.1	-.3	.751
PI633974	CHOTEAU	31.0	49	-1.9	-8.5	.000
PI642366	VIDA	33.0	49	.1	.3	.746
AGRIPRO1	NORPRO	30.2	49	-2.7	-11.0	.000
AGRIPRO3	FREYR	34.3	39	1.0	4.0	.000
BZ996434	CORBIN	31.9	39	-.8	-2.7	.009

GRAIN PROTEIN (%)

REFERENCE MEAN: MCNEAL 14.7 (N= 49)

ID	NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
CI 13596	FORTUNA	14.6	49	-.1	-.8	.404
PI592761	ERNEST	15.2	49	.5	4.1	.000
PI607557	SCHOLAR	15.4	40	.7	4.3	.000
ND 695	REEDER	14.8	49	.1	1.1	.277
BZ992588	CONAN	14.9	49	.1	1.2	.231
BZ992322	HANK	14.7	49	.0	.1	.891
PI632252	OUTLOOK	14.4	49	-.3	-2.8	.008
PI633974	CHOTEAU	14.8	49	.1	.7	.491
PI642366	VIDA	14.5	49	-.3	-2.5	.015
AGRIPRO1	NORPRO	14.5	49	-.2	-2.0	.055
AGRIPRO3	FREYR	13.9	39	-.4	-2.7	.012
BZ996434	CORBIN	15.2	39	.3	1.3	.189

2003-2007 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED VARIETIES GROWN ACROSS MONTANA IN THE ADVANCED SPRING WHEAT NURSERY

VARIETY	DISTRICT 1 KALISPELL					DISTRICT 2 BOZEMAN DRYLAND					DISTRICT 2 BOZEMAN IRRIGATED					DISTRICT 3 HUNTLEY IRRIGATED											
	2003	2004	2005	2006	2007	YRS	AVE	2003	2004	2005	2006	2007	YRS	AVE	2003	2004	2005	2006	2007	YRS	AVE	2003	2004	2005	2006	2007	YRS
MCNEAL	78.5	86.8	43.6	51.3	52.9	5	62.6	39.8	85.3	56.4	47.3	42.7	5	54.3	65.3	102.9	82.5	33.0	41.3	5	65.0	88.1	114.4	78.1	89.2	4	92.4
FORTUNA	74.4	100.7	74.8	41.4	51.6	5	68.6	41.7	81.4	56.5	53.3	40.5	5	54.7	63.5	100.6	70.0	55.6	37.7	5	65.5	79.4	108.9	62.7	70.3	4	80.3
ERNEST	75.9	89.3	61.8	50.2	45.5	5	64.6	41.9	80.5	52.8	48.7	37.1	5	52.2	74.1	90.5	74.3	48.4	42.2	5	65.9	86.0	114.0	76.1	84.3	4	90.1
SCHOLAR	82.6	99.3	82.2	37.9	0.0	4		41.9	84.1	56.2	59.7	0.0	4		69.2	95.9	72.4	60.9	0.0	4		87.3	116.0	68.7	85.1	4	89.3
REEDER	87.4	92.4	92.4	75.1	62.8	5	82.0	44.5	85.4	60.7	65.4	46.4	5	60.5	74.7	97.2	83.6	56.2	57.0	5	73.7	85.5	110.5	72.4	77.6	4	86.5
CONAN	79.7	99.0	81.4	56.5	46.1	5	72.5	37.8	81.7	57.2	55.2	41.0	5	54.6	68.9	89.9	78.4	63.7	52.2	5	70.6	77.5	113.4	73.7	70.5	4	83.8
HANK	72.6	103.2	71.5	74.0	55.9	5	75.4	41.9	89.0	67.5	56.8	44.7	5	60.0	74.5	115.3	91.9	60.6	56.2	5	79.7	85.6	123.3	85.8	92.2	4	96.7
OUTLOOK	70.5	94.7	61.0	63.0	55.8	5	69.0	42.7	87.4	65.0	54.9	43.0	5	58.6	74.3	104.2	86.4	48.4	54.4	5	73.5	88.9	116.2	89.8	84.0	4	97.2
CHOTEAU	77.9	88.6	71.4	74.2	47.2	5	71.9	37.7	90.0	56.6	59.3	39.8	5	56.7	70.4	103.2	87.4	54.8	54.1	5	74.0	86.6	128.7	83.0	87.9	4	96.5
VIDA	91.6	101.7	72.4	54.5	64.3	5	76.9	48.3	97.5	68.8	64.8	47.7	5	65.4	80.0	107.9	87.2	53.7	58.0	5	77.4	98.6	117.8	86.4	88.2	4	97.7
NORPRO	82.3	94.4	59.0	70.7	48.3	5	71.0	39.3	92.6	60.6	47.2	42.4	5	56.4	77.8	104.4	90.8	39.1	59.2	5	74.2	83.5	118.5	95.7	86.9	4	96.2
FREYR	0.0	101.9	84.3	68.5	54.1	4		0.0	83.0	58.6	61.5	36.8	4		0.0	100.9	84.8	64.4	57.5	4		0.0	115.4	86.3	81.4	3	
CORBIN	76.2	89.6	0.0	44.8	53.0	4		40.2	92.0	0.0	60.8	40.8	4		71.2	96.3	0.0	74.5	49.5	4		77.2	94.4	0.0	88.3	3	
AVERAGE	78.8	95.8	71.3	58.6	53.1	5	71.5	41.6	87.1	59.7	56.5	41.9	5	57.4	72.0	100.3	82.5	54.9	51.6	5	72.2	84.8	114.6	79.9	84.3	4	90.9

VARIETY	DISTRICT 3 HUNTLEY DRYLAND					DISTRICT 4 MOCCASIN DRYLAND					DISTRICT 5 HAVRE					DISTRICT 5 CONRAD DRYLAND												
	2003	2004	2005	2006	2007	YRS	AVE	2003	2004	2005	2006	2007	YRS	AVE	2003	2004	2005	2006	2007	YRS	AVE	2003	2004	2005	2006	2007	YRS	AVE
MCNEAL	36.0	39.1	39.0	57.1	55.9	5	45.4	20.3	36.9	24.3	34.2	43.0	5	31.7	13.9	40.8	51.4	27.4	34.8	5	33.7	49.5	57.5	54.3	51.3	36.6	5	49.8
FORTUNA	37.7	31.7	36.3	41.3	54.7	5	40.4	18.1	37.1	25.7	32.1	34.5	5	29.5	10.8	42.0	48.2	34.0	32.1	5	33.4	49.6	58.0	51.0	43.7	32.9	5	47.0
ERNEST	33.1	35.1	29.3	50.0	60.1	5	41.5	15.9	34.1	20.9	22.8	38.2	5	26.4	11.8	39.8	46.1	26.6	32.7	5	31.4	42.6	56.7	37.7	54.6	39.4	5	46.2
SCHOLAR	36.6	32.7	35.8	50.1	0.0	4		17.8	36.1	22.6	31.2	0.0	4		12.2	44.7	46.9	27.0	0.0	4		46.4	52.8	48.4	60.8	0.0	4	
REEDER	40.6	32.8	43.4	52.5	61.4	5	46.1	18.4	37.9	27.2	34.5	42.0	5	32.0	12.4	40.9	51.2	28.8	35.6	5	33.8	53.9	60.7	53.3	62.0	35.0	5	53.0
CONAN	35.6	28.3	39.6	41.7	55.4	5	40.1	17.8	39.3	25.3	32.8	37.7	5	30.6	13.5	43.3	55.5	31.9	35.8	5	36.0	45.9	58.0	49.7	53.1	36.2	5	48.6
HANK	42.3	29.5	44.4	47.3	61.4	5	45.0	21.4	41.5	29.2	37.2	42.3	5	34.3	10.4	45.0	55.6	33.3	34.5	5	35.8	48.9	60.0	51.0	59.6	33.1	5	50.5
OUTLOOK	42.5	39.3	45.0	56.5	63.4	5	49.3	16.6	39.5	26.0	31.5	44.6	5	31.7	16.2	49.0	58.3	31.8	35.5	5	38.2	48.8	60.2	51.9	63.8	33.6	5	51.7
CHOTEAU	37.2	28.7	34.9	53.5	61.9	5	43.2	15.0	35.6	26.8	33.9	43.0	5	30.9	13.1	42.5	55.7	32.1	36.1	5	35.9	59.5	63.8	50.5	67.3	37.8	5	55.8
VIDA	42.3	34.3	38.2	54.0	67.2	5	47.2	17.0	39.1	25.8	35.5	44.3	5	32.3	14.3	51.7	58.3	34.3	42.3	5	40.2	55.2	63.6	55.0	64.7	37.6	5	55.2
NORPRO	36.5	33.5	32.9	54.8	65.3	5	44.6	12.6	32.2	22.1	31.7	41.3	5	28.0	9.4	39.1	49.4	30.9	35.4	5	32.9	50.2	59.9	49.0	58.0	34.8	5	50.4
FREYR	0.0	33.3	44.9	49.8	55.0	4		0.0	39.8	24.0	33.7	39.0	4		0.0	40.4	49.5	30.7	33.7	4		0.0	62.0	54.7	55.6	33.5	4	
CORBIN	37.8	17.9	0.0	51.2	62.7	4		16.3	35.3	0.0	33.5	41.7	4		9.2	48.7	0.0	29.4	42.8	4		48.7	62.4	0.0	56.2	37.0	4	
AVERAGE	38.3	31.2	38.7	50.8	60.4	5	43.9	17.2	37.3	25.0	32.7	41.0	5	30.6	12.1	43.6	52.2	30.6	35.9	5	34.9	50.3	59.8	50.6	57.7	35.6	5	50.8

2003-2007 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED VARIETIES GROWN ACROSS MONTANA IN THE ADVANCED SPRING WHEAT NURSERY

VARIETY	DISTRICT 6 SIDNEY DRY					DISTRICT 6 SIDNEY IRRIGATED					OVERALL MEAN YEARS RANK				
	2003	2004	2005	2006	2007	YRS	AVE	2003	2004	2005		2006	2007	YRS	AVE
	60.7	68.3	45.7	52.7	53.8	5	56.3	107.5	83.4	67.3		69.5	46.4	5	74.8
MCNEAL	57.4	61.2	44.1	48.9	46.7	5	51.6	77.5	66.4	60.3	60.3	40.3	5	61.0	
FORTUNA	59.4	67.6	44.3	51.5	0.0	4	51.1	92.8	76.4	63.2	69.8	35.0	5	67.5	
ERNEST	67.6	68.0	50.2	59.7	52.1	5	59.5	102.5	88.8	62.6	83.7	44.1	5	76.3	
SCHOLAR	55.7	59.1	44.6	46.0	48.8	5	50.8	88.3	76.1	59.6	72.1	37.5	5	66.7	
REEDER	63.3	66.6	48.0	55.0	53.6	5	57.3	113.5	87.6	74.7	69.1	40.3	5	77.0	
CONAN	69.0	67.5	46.4	57.4	55.7	5	59.2	104.1	84.2	75.9	69.4	42.6	5	75.2	
HANK	61.2	61.9	46.1	52.3	52.1	5	54.7	107.3	76.0	55.8	71.3	35.5	5	69.2	
OUTLOOK	73.0	71.1	51.0	60.6	56.2	5	62.4	105.9	90.5	49.9	77.4	35.7	5	71.9	
CHOTEAU	65.8	70.7	52.7	57.2	53.6	5	60.0	115.8	80.0	80.1	74.3	29.5	5	75.9	
VIDA	0.0	64.6	47.9	55.0	51.4	4		0.0	82.3	72.8	76.6	31.9	4		
NORPRO	60.1	62.3	0.0	54.4	55.7	4		94.6	70.6	0.0	67.4	29.1	4		
FREYR															
CORBIN															
AVERAGE	62.1	65.3	46.9	53.8	52.4	5	56.1	100.5	80.0	65.2	71.5	37.3	5	70.9	

2003-2007 OVERALL SUMMARY									
VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (174 = JUNE 23)		PLANT HEIGHT (INCHES)		PROTEIN (%)		AVERAGE
	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	
MCNEAL	58.3	49	174.3	49	32.9	49	14.7	49	
FORTUNA	60.0	49	176	49	38.1	49	14.6	49	
ERNEST	59.5	49	175	49	37.7	49	15.2	49	
SCHOLAR	60.0	40	176	40	36.5	40	15.4	40	
REEDER	59.9	49	174	49	33.5	49	14.9	49	
CONAN	59.4	49	174	49	30.5	49	14.9	49	
HANK	57.5	49	173	49	30.6	49	14.8	49	
OUTLOOK	57.8	49	177	49	32.9	49	14.4	49	
CHOTEAU	59.5	49	174	49	31.0	49	14.8	49	
VIDA	58.8	49	175	49	33.0	49	14.5	49	
NORPRO	58.5	49	175	49	30.2	49	14.5	49	
FREYR	60.1	39	174	39	33.9	39	14.4	39	
CORBIN	59.8	39	173	39	32.1	39	15.0	39	
AVERAGE	59.1	49	174.5	49	33.2	49	14.8	49	

2003-2007 STEM SOLID RATINGS (5=HOLLOW,25=VERY SOLID) FOR SELECTED SPRING WHEATS GROWN IN THE
ADVANCED SPRING WHEAT NURSERY GROWN AT BOZEMAN

VARIETY	2003		2004		2005		2006		2007	
	DRY	IRR	DRY	IRR	DRY	IRR	DRY	IRR	DRY	IRR
FORTUNA	19.8	18.3	19.7	18.6	18.5	13.3	18.7	16.3	17.8	16.4
MCNEAL	6.5	6.4	6.8	5.7	7.3	6.1	6.7	6.8	8.3	7.4
ERNEST	16.3	17.2	18.3	12.2	18.8	11.4	14.3	17.2	13.8	12.5
SCHOLAR	14.9	13.6	12.8	13.0	16.4	9.4	14.1	10.5	-	-
CONAN	13.5	9.5	10.6	8.6	9.0	7.5	10.4	9.3	11.7	10.9
REEDER	6.6	6.9	6.8	5.1	6.9	5.3	6.5	6.2	7.8	7.3
OUTLOOK	8.3	7.3	7.0	5.7	7.3	6.6	7.8	6.6	8.8	7.4
CHOTEAU	23.9	21.7	20.8	21.9	18.5	19.7	21.7	20.9	24.2	24.6
HANK	9.0	7.5	8.2	6.9	8.4	7.5	8.1	7.3	11.2	8.9
VIDA	13.0	12.1	11.1	8.1	16.1	9.4	13.9	8.1	13.0	9.6
CORBIN	12.0	10.9	9.6	8.4	-	-	10.0	9.5	10.5	9.9
NORPRO	7.3	6.8	7.6	6.1	8.1	7.0	6.9	6.5	7.3	7.6
FREYR	-	-	7.3	6.9	7.1	6.9	8.1	6.3	9.8	8.0

2004-2007 SAWFLY DAMAGE RATINGS FOR SELECTED SPRING WHEATS FROM SOME OFFSTATION SPRING WHEAT NURSERIES
GROWN IN NORTH-CENTRAL MONTANA (ratings done by Ms. Peggy Lamb, NARC)

VARIETY	2004		2004		2005		2005		2005		2006		2006		2007		2007	
	TURNER	LORING	TURNER	LORING	TURNER	LORING	TURNER	LORING	TURNER	LORING	TURNER	LORING	TURNER	LORING	TURNER	LORING	TURNER	LORING
FORTUNA	11.7	20.0	11.7	20.0	30.0	30.0	21.7	21.7	23.3	8.3	16.7	3.7	16.7	16.7	3.7	8.3	16.0	16.0
MCNEAL	43.3	63.3	43.3	63.3	88.3	88.3	71.7	71.7	73.3	71.7	56.7	16.7	56.7	56.7	16.7	12.0	55.2	55.2
ERNEST	20.0	45.0	20.0	45.0	40.0	40.0	28.3	28.3	21.7	15.0	23.3	11.7	23.3	23.3	11.7	10.0	23.9	23.9
SCHOLAR	36.7	78.3	36.7	78.3	40.0	40.0	61.7	61.7	60.0	63.3	-	-	-	-	-	-	56.7	56.7
CONAN	15.0	16.7	15.0	16.7	35.0	35.0	26.7	26.7	26.7	13.3	11.7	1.0	11.7	11.7	1.0	5.0	16.7	16.7
REEDER	28.3	68.3	28.3	68.3	33.3	33.3	65.0	65.0	81.7	55.0	35.0	10.0	35.0	35.0	10.0	8.3	42.8	42.8
OUTLOOK	31.7	66.7	31.7	66.7	38.3	38.3	63.3	63.3	81.7	68.3	41.7	10.0	41.7	41.7	10.0	8.3	45.6	45.6
CHOTEAU	15.0	28.3	15.0	28.3	26.7	26.7	8.3	8.3	21.7	5.0	6.7	2.3	6.7	6.7	2.3	2.3	12.9	12.9
HANK	36.7	86.7	36.7	86.7	31.7	31.7	60.0	60.0	78.3	63.3	38.3	20.0	38.3	38.3	20.0	15.0	47.8	47.8
VIDA	18.3	20	18.3	20	33.3	33.3	28.3	28.3	53.3	23.3	38.3	3.7	38.3	38.3	3.7	1.0	24.4	24.4
CORBIN									-	-	5.0	2.3	5.0	5.0	2.3	1.0	4.2	4.2
NORPRO									71.7	48.3	21.7	6.7	21.7	21.7	6.7	10.0	31.7	31.7
FREYR									90.0	68.3	41.7	13.3	41.7	41.7	13.3	15.0	45.7	45.7

TABLE OF PAIRED T-TEST RESULTS

GRAIN YIELD (BU/AC)

REFERENCE MEAN: MOUNTRAIL 51.4 (N= 70)

ID	NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
CANKYLE	KYLE	46.2	62	-5.1	-4.7	.000
CI 17789	VIC	44.5	54	-6.6	-7.7	.000
PI478289	MONROE	44.9	54	-6.2	-4.8	.000
NDMUNICH	Munich	49.2	54	-2.0	-2.8	.007
D87130	BEN	47.0	54	-4.2	-5.3	.000
D89135	MAIER	50.1	62	-1.3	-2.1	.037
D91080	PLAZA	49.3	62	-2.0	-3.0	.004
D901442	LEBSOCK	48.5	54	-2.6	-3.8	.000
ACAVONLE	AC AVONLEA	49.2	46	-1.0	-1.3	.215
YU894-75	ALZADA	49.2	54	-1.3	-1.0	.306
STRONGFI	STRONGFIELD	49.4	16	-2.7	-1.6	.138

GRAIN TEST WEIGHT (LB/BU)

REFERENCE MEAN: MOUNTRAIL 59.5 (N= 70)

ID	NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
CANKYLE	KYLE	59.9	62	.4	3.2	.002
CI 17789	VIC	60.6	54	1.0	6.2	.000
PI478289	MONROE	59.7	54	.0	.3	.760
NDMUNICH	Munich	59.5	54	-.1	-1.1	.272
D87130	BEN	60.8	54	1.1	8.6	.000
D89135	MAIER	60.3	62	.8	6.5	.000
D91080	PLAZA	59.5	62	-.1	-.5	.605
D901442	LEBSOCK	60.9	54	1.2	10.0	.000
ACAVONLE	AC AVONLEA	60.2	46	.7	5.0	.000
YU894-75	ALZADA	59.6	54	.1	.7	.466
STRONGFI	STRONGFIELD	59.1	16	.2	.6	.543

HEADING DATE (JULIAN DAYS; 178= JUNE 27)

REFERENCE MEAN: MOUNTRAIL 178.2 (N= 68)

ID	NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
CANKYLE	KYLE	179.8	62	1.5	8.3	.000
CI 17789	VIC	177.9	54	-1.1	-8.0	.000
PI478289	MONROE	175.1	54	-3.9	-16.5	.000
NDMUNICH	Munich	177.5	54	-1.5	-10.6	.000
D87130	BEN	178.0	54	-1.0	-7.5	.000
D89135	MAIER	177.6	62	-.7	-7.0	.000
D91080	PLAZA	178.5	62	.2	1.4	.172
D901442	LEBSOCK	177.7	54	-1.3	-10.0	.000
ACAVONLE	AC AVONLEA	177.1	47	-1.5	-9.7	.000
YU894-75	ALZADA	175.0	53	-3.4	-17.3	.000
STRONGFI	STRONGFIELD	175.7	14	.4	1.1	.276

TABLE OF PAIRED T-TEST RESULTS (CONT.)

PLANT HEIGHT (INCHES)

REFERENCE MEAN: MOUNTRAIL 32.3 (N= 71)

ID	NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
CANKYLE	KYLE	37.1	63	4.9	15.0	.000
CI 17789	VIC	34.8	55	2.7	10.6	.000
PI478289	MONROE	33.6	55	1.5	4.9	.000
NDMUNICH	Munich	30.4	55	-1.7	-6.7	.000
D87130	BEN	33.7	55	1.6	7.9	.000
D89135	MAIER	31.3	63	-.9	-3.7	.000
D91080	PLAZA	27.3	63	-4.9	-12.9	.000
D901442	LEBSOCK	31.5	55	-.6	-2.0	.047
ACAVONLE	AC AVONLEA	33.0	47	1.2	4.8	.000
YU894-75	ALZADA	27.4	55	-4.5	-12.1	.000
STRONGFI	STRONGFIELD	33.1	16	.3	.9	.370

GRAIN PROTEIN (%)

REFERENCE MEAN: MOUNTRAIL 14.9 (N= 54)

ID	NAME	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
CANKYLE	KYLE	15.1	46	.1	.8	.427
CI 17789	VIC	15.4	40	.3	2.0	.058
PI478289	MONROE	15.5	40	.4	2.5	.016
NDMUNICH	Munich	15.4	40	.3	1.8	.080
D87130	BEN	15.5	40	.4	2.7	.009
D89135	MAIER	15.5	46	.4	3.5	.001
D91080	PLAZA	14.8	46	-.2	-1.7	.093
D901442	LEBSOCK	15.1	40	-.0	-.2	.851
ACAVONLE	AC AVONLEA	15.5	35	.5	2.5	.017
YU894-75	ALZADA	14.5	43	-.4	-2.0	.057
STRONGFI	STRONGFIELD	15.1	14	.6	3.8	.002

1999-2007 GRAIN YIELD FOR SELECTED DURUM WHEATS GROWN ACROSS MONTANA

VARIETY	DISTRICT 2 - BOZEMAN DRY									DISTRICT 3 - HUNTLEY DRY									DISTRICT 4 - MOCCASIN DRY									Comparable Ave.		
	1999	2000	2001	2002	2003	2004	2005	2006	2007	YRS	1999	2000	2001	2002	2003	2004	2005	2006	2007	YRS	1999	2000	2001	2002	2003	2005	2006		2007	YRS
MOUNTRAIL	51.6	64.7	83.8	60.4	41.9	61.8	48.5	57.1	44.5	9	30.0	43.0	33.6	6.6	30.3	32.7	38.3	39.0	73.7	9	36.0	32.2	32.3	18.8	23.0	31.5	29.8	7	29.1	
KYLE	47.0	56.0	74.4	47.9	39.6	54.5	46.0	55.8	0.0	8	26.0	52.2	34.5	4.9	34.7	32.3	32.9	30.8	0.0	8	31.6	30.2	30.7	15.1	22.7	34.4	0.0	6	27.6	
VIC	48.3	60.9	76.3	52.2	42.5	52.1	48.7	0.0	0.0	7	25.9	41.4	31.9	8.5	28.9	27.7	41.7	0.0	0.0	7	34.9	31.2	30.6	29.5	12.5	20.9	0.0	5	25.5	
MONROE	56.6	58.0	71.9	52.6	42.5	58.2	48.4	0.0	0.0	7	31.2	47.4	31.1	14.7	31.8	26.9	42.6	0.0	0.0	7	38.3	30.9	27.9	29.2	15.0	20.9	0.0	5	25.3	
MUNICH	48.9	64.8	79.3	60.1	41.8	58.1	48.5	0.0	0.0	7	32.5	55.9	34.3	10.5	32.6	29.9	39.4	0.0	0.0	7	39.9	33.7	27.0	30.5	12.3	21.7	0.0	5	25.6	
BEN	48.1	61.0	79.9	56.2	41.8	59.2	49.1	0.0	0.0	7	28.2	44.3	29.4	11.0	28.7	31.1	42.5	0.0	0.0	7	36.5	31.8	27.3	28.7	13.9	22.3	0.0	5	25.3	
MAIER	56.9	64.5	81.2	62.7	41.5	61.1	50.6	57.0	0.0	8	29.3	54.0	29.9	11.2	30.2	32.7	38.0	33.2	0.0	8	37.1	35.9	31.4	29.8	12.8	23.7	32.7	0.0	27.9	
PLAZA	51.2	61.0	73.6	58.9	34.1	63.7	49.3	50.7	0.0	8	24.8	44.7	32.2	8.2	30.4	31.0	40.6	34.5	0.0	8	35.3	35.6	28.0	29.5	11.6	24.2	35.5	0.0	27.5	
LEB SOCK	55.1	59.9	76.6	61.7	41.2	62.5	49.5	0.0	0.0	7	29.3	44.7	29.0	9.3	35.0	29.8	43.3	0.0	0.0	7	37.3	39.3	27.6	29.6	12.1	25.4	0.0	5	27.4	
AC AVONLEA	0.0	0.0	76.4	59.7	40.6	62.5	48.6	56.1	0.0	6	0.0	0.0	34.8	10.6	32.2	28.8	44.2	38.3	0.0	6	38.0	0.0	0.0	33.9	14.8	24.0	33.0	0.0	29.1	
ALZADA	0.0	0.0	76.4	59.1	42.2	74.0	56.5	54.4	46.9	7	58.8	0.0	0.0	33.5	15.1	34.3	29.3	46.2	31.2	68.7	7	36.9	0.0	0.0	35.5	13.8	30.3	31.8	35.4	31.5
STRONGFIELD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.9	42.8	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.8	69.4	2	0.0	0.0	0.0	0.0	0.0	0.0	38.7	29.7	2	
AVERAGE	51.9	61.4	77.2	57.1	40.9	60.7	49.4	55.3	44.7	9	28.1	47.7	32.0	9.9	31.7	30.2	40.9	34.1	70.6	9	36.1	33.9	28.7	30.7	13.9	23.6	33.9	31.6	7	

VARIETY	DISTRICT 5 - HAVRE									DISTRICT 5 - CONRAD DRY									Comparable Ave.		
	1999	2000	2001	2002	2003	2004	2005	2006	2007	YRS	1999	2000	2001	2002	2003	2004	2005	2006		2007	YRS
MOUNTRAIL	41.4	34.6	18.9	39.5	11.6	44.3	46.7	25.8	36.5	9	59.0	36.3	15.0	49.5	39.2	61.8	47.9	63.2	35.3	9	45.3
KYLE	39.6	31.4	20.5	36.7	12.5	49.9	46.0	30.2	0.0	8	58.6	36.1	14.4	51.0	33.1	57.1	50.1	61.1	0.0	8	44.0
VIC	36.4	33.2	19.1	35.3	10.9	35.7	44.6	0.0	0.0	7	52.3	33.8	12.8	37.7	30.6	52.5	50.6	0.0	0.0	7	39.6
MONROE	40.0	35.0	16.9	33.7	7.1	43.4	47.8	0.0	0.0	7	58.6	32.5	12.3	37.6	34.5	53.8	49.3	0.0	0.0	7	40.8
MUNICH	42.6	36.0	17.0	38.7	10.6	40.4	44.9	0.0	0.0	7	64.4	35.9	11.5	44.4	38.3	59.4	49.1	0.0	0.0	7	44.4
BEN	38.9	33.8	15.8	35.9	8.4	41.3	41.2	0.0	0.0	7	50.7	34.4	12.1	40.6	35.6	54.5	45.7	0.0	0.0	7	40.1
MAIER	45.2	34.3	15.7	39.0	10.0	43.5	48.5	29.9	0.0	8	67.9	39.8	12.7	43.6	46.0	57.8	54.5	60.1	0.0	8	46.5
PLAZA	44.6	33.8	19.1	38.0	12.4	41.8	50.3	29.6	0.0	8	67.0	35.3	13.8	43.4	39.1	60.7	50.2	58.3	0.0	8	44.7
LEB SOCK	43.0	35.1	16.3	35.2	10.5	46.7	46.6	0.0	0.0	7	58.1	39.0	13.1	42.6	33.6	57.4	50.5	0.0	0.0	7	43.1
AC AVONLEA	0.0	0.0	21.4	40.3	8.1	44.7	49.9	31.2	0.0	6	0.0	0.0	16.1	47.8	42.5	62.3	55.4	65.9	0.0	6	47.4
ALZADA	0.0	0.0	18.9	39.2	9.1	47.7	46.2	30.6	44.7	7	0.0	0.0	15.6	44.6	42.2	64.6	59.8	64.2	43.5	7	48.5
STRONGFIELD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.2	37.8	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	64.8	39.4	2	
AVERAGE	41.2	33.7	18.0	36.9	10.1	43.6	46.6	29.8	39.7	9	59.0	35.7	13.4	43.7	37.7	58.3	51.2	62.5	39.4	9	44.6

VARIETY	DISTRICT 6 - SIDNEY DRY									DISTRICT 6 - SIDNEY IRR									Comparable Ave.		
	1999	2000	2001	2002	2003	2004	2005	2006	2007	YRS	1999	2000	2001	2002	2003	2004	2005	2006		2007	YRS
MOUNTRAIL	61.2	15.6	58.2	36.9	53.9	54.2	52.2	34.4	51.9	9	98.7	110.5	56.3	70.5	125.3	62.4	61.2	88.3	55.7	9	81.0
KYLE	54.7	12.4	53.8	37.8	51.0	54.8	50.9	29.5	0.0	8	73.6	88.4	29.0	65.7	89.3	61.5	64.6	73.5	0.0	8	65.6
VIC	48.5	14.4	41.8	35.5	50.4	48.8	46.8	0.0	0.0	7	77.7	97.1	49.8	66.6	109.3	53.3	49.1	0.0	0.0	7	69.6
MONROE	48.2	14.9	35.8	34.6	49.3	52.7	50.4	0.0	0.0	7	76.0	95.7	54.8	66.0	100.0	53.4	62.4	0.0	0.0	7	70.4
MUNICH	50.4	14.1	49.1	34.7	49.8	58.9	47.8	0.0	0.0	7	86.9	90.0	54.0	67.8	123.0	64.1	66.6	0.0	0.0	7	76.5
BEN	54.6	13.4	48.0	35.4	52.3	53.7	52.2	0.0	0.0	7	83.7	98.9	58.4	66.2	112.3	74.7	65.0	0.0	0.0	7	77.4
MAIER	57.2	14.4	45.6	37.3	55.2	59.4	50.8	32.2	0.0	8	90.6	107.9	56.3	72.1	117.6	56.9	51.1	78.5	0.0	8	75.9
PLAZA	55.4	13.5	50.8	36.8	51.4	56.3	48.6	28.8	0.0	8	94.2	105.6	57.7	64.4	118.4	56.1	58.8	67.6	0.0	8	74.9
LEB SOCK	51.4	13.8	50.5	38.2	53.3	50.9	54.3	0.0	0.0	7	85.1	100.7	53.2	62.1	112.5	60.1	71.2	0.0	0.0	7	75.4
AC AVONLEA	0.0	0.0	50.4	34.5	53.8	61.9	47.1	33.8	0.0	6	0.0	0.0	48.2	60.8	106.0	66.7	48.2	81.5	0.0	6	71.8
ALZADA	0.0	0.0	31.5	42.2	54.7	54.3	45.7	33.3	41.6	7	0.0	0.0	46.4	64.9	100.6	64.6	65.7	63.1	25.7	7	67.2
STRONGFIELD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.6	42.3	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	69.3	43.2	2	
AVERAGE	53.7	14.0	47.2	36.4	52.3	55.1	49.7	31.9	45.3	9	85.0	98.8	50.0	66.0	110.4	61.2	60.4	74.5	41.5	9	72.0

1999-2007 GRAIN YIELD FOR SELECTED DURUM WHEATS GROWN ACROSS MONTANA

1999-2007 OVERALL AGRONOMIC TRAITS FOR SELECTED DURUM VARIETIES GRQWN ACROSS MONTANA

VARIETY	GRAIN YIELD (BU/AC)		TEST WEIGHT (LB/BU)		HEADING DATE (178 = JUNE 27)		PLANT HT. (INCHES)		PROTEIN (%)	
	AVE	YEARS	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
MOUNTRAIL	51.4	70	70	59.49	68	178	71	32.3	54	15
KYLE	46.3	62	62	59.89	62	180	63	37.2	46	15.1
VIC	44.7	54	54	60.46	54	177	55	35.0	40	15.3
MONROE	45.1	54	54	59.54	54	174	55	33.8	40	15.3
MUNICH	49.4	54	54	59.34	54	177	55	30.6	40	15.2
BEN	47.2	54	54	60.57	54	177	55	33.9	40	15.3
MAIER	50.1	62	62	60.29	62	177	63	31.4	46	15.4
PLAZA	49.4	62	62	59.43	62	178	63	27.3	46	14.7
LEBSOCK	48.7	54	54	60.72	54	177	55	31.7	40	14.9
AC AVONLEA	50.4	46	46	60.16	47	177	47	33.5	35	15.4
ALZADA	50.1	54	54	59.63	53	175	55	27.7	43	14.6
STRONGFIELD	48.8	16	16	59.7	14	179	16	32.6	14	15.6
AVERAGE	48.5	70	70	59.86	68	177	71	32.0	54	15