

**A MOTION TO RELEASE MT 9874 HARD RED SPRING WHEAT,
EFFECTIVE 2003**

MT 9874 is to be released as a public variety.

MT 9874 is an F₄ derived line first entered in the 1997 single row yield trial at Bozeman, and first designated as “MT 9874” when entered in the preliminary spring wheat yield nursery grown at four dryland locations in 1998. In 1999, 2000 and 2001 it has been tested for 29 station years in the advanced spring wheat nursery grown across Montana. It was also entered in the 2001 Uniform regional hard red spring wheat nursery grown at Bozeman and Sidney.

MT 9874 is derived from the cross of PI372129/Amidon//Amidon/3/MT 9312 made in 1994. PI372129 was a winter wheat selected from a landrace of Ashkabad with resistance to the Russian grain Aphid. MT 9312 was a cross of MT7810/MT7926. Since 1997, when MT 9874 was tested in the single row yield nursery it has shown good resistance to the Russian grain aphid. Additionally, MT 9874 showed resistance to the Russian grain aphid in greenhouse experiments conducted by Dr. S. Haley at Colorado State University in Fort Collins.

Across 29 location years, MT 9874 yielded 72 bu/ac approximately 2 bushels more than McNeal, the most popular variety in the state. MT 9874, Reeder and McNeal yielded 49.3, 50.9 and 48.2 bu/ac, respectively at six dryland sites. Under irrigation, McNeal and Reeder yielded 103 bu/ac and MT 9874 yielded 106 bu/ac. Overall test weights were 61.1, 59.8 and 59.4 bu/ac for Reeder, McNeal and MT 9874 respectively. Across locations MT 9874 heads about .5 days later than McNeal and 2-3 days later than Reeder. Plant height for MT 9874, Reeder and McNeal averages 32 inches across all locations. MT 9874's grain protein averaged 14.8%, as compared to 15.0 % for McNeal and 15.3% for Reeder. In 2001, MT 9874 performed well in off-station nurseries around the state, yielding over 1 bushel more than McNeal across nineteen dryland sites and about 3 bushels more on five irrigated sites.

MT 9874 has exhibited good straw strength with resistance to lodging and good threshability. MT 9874 is susceptible to the wheat stem sawfly. In a 1997 observation nursery at Bozeman, MT 9874 showed moderate susceptibility to stem rust, but has shown only traces in subsequent years. In 1997, MT 9874 showed moderate resistance to leaf rust. In the 2001 Advanced spring wheat nursery grown at Sidney, MT 9874 showed good resistance to Septoria.

MT 9874 has acceptable milling and baking quality traits.

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TABLES OF PAIRED T-TEST RESULTS
(1999-2001 all locations)

GRAIN YIELD (BU/AC)

REFERENCE MEAN: MCNEAL 70.7 (N= 29)

ID	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
THATCHER	58.3	29	-12.4	-7.0	.000
FORTUNA	59.2	29	-11.5	-5.6	.000
LEW	60.2	29	-10.5	-5.6	.000
NEWANA	69.5	29	-1.2	-1.1	.270
HI-LINE	66.3	29	-4.4	-4.3	.000
AMIDON	68.3	29	-2.4	-2.0	.053
ERNEST	66.3	29	-4.4	-3.5	.002
SCHOLAR	68.1	29	-2.6	-1.6	.113
WESTBRED926	67.4	29	-3.3	-2.2	.034
Conan	62.7	29	-8.0	-5.2	.000
Reeder	72.6	29	1.9	1.5	.145
MT 9806	71.6	29	.9	.6	.565
MT 9874	72.8	29	2.1	1.8	.084

TEST WEIGHT (LB/BU)

REFERENCE MEAN: MCNEAL 59.8 (N= 29)

ID	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
THATCHER	58.5	29	-1.3	-5.1	.000
FORTUNA	60.5	29	.7	2.2	.037
LEW	60.7	29	.9	3.9	.000
NEWANA	59.8	29	-.1	-.2	.805
HI-LINE	59.9	29	.1	.4	.682
AMIDON	60.2	29	.4	1.7	.096
ERNEST	61.1	29	1.3	7.6	.000
SCHOLAR	61.1	29	1.2	5.2	.000
WESTBRED 926	59.6	29	-.3	-1.3	.216
Conan	60.5	29	.7	3.0	.006
Reeder	61.1	29	1.2	5.5	.000
MT 9806	60.3	29	.5	2.0	.060
MT 9874	59.4	29	-.5	-3.3	.003

HEADING DATE (JULIAN DAYS; 175= JUNE 24)

REFERENCE MEAN: MCNEAL 174.7 (N= 29)

ID	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
THATCHER	176.0	29	1.2	5.3	.000
FORTUNA	173.1	29	-1.6	-8.5	.000
LEW	175.8	29	1.1	5.3	.000
NEWANA	175.7	29	.9	4.9	.000
HI-LINE	171.5	29	-3.2	-15.3	.000
AMIDON	173.5	29	-1.2	-5.8	.000
ERNEST	173.3	29	-1.5	-6.3	.000
SCHOLAR	174.5	29	-.2	-1.0	.344
WESTBRED 926	170.0	29	-4.8	-13.8	.000
Conan	172.2	29	-2.5	-10.2	.000
Reeder	172.2	29	-2.6	-9.6	.000
MT 9806	173.2	29	-1.5	-6.6	.000
MT 9874	175.4	29	.6	3.2	.003

TABLES OF PAIRED T-TEST RESULTS
(1999-2001 all locations)

PLANT HEIGHT (INCHES)

REFERENCE MEAN: MCNEAL 31.8 (N= 29)

ID	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
THATCHER	39.0	29	7.2	17.8	.000
FORTUNA	36.3	29	4.5	9.9	.000
LEW	36.6	29	4.8	11.7	.000
NEWANA	29.9	29	-1.9	-6.7	.000
HI-LINE	29.7	29	-2.1	-7.1	.000
AMIDON	36.1	29	4.3	10.5	.000
ERNEST	35.6	29	3.8	11.2	.000
SCHOLAR	34.4	29	2.6	7.3	.000
WESTBRED 926	29.5	29	-2.3	-8.6	.000
Conan	29.8	29	-2.1	-7.2	.000
Reeder	32.3	29	.5	1.7	.096
MT 9806	31.3	29	-.5	-1.8	.083
MT 9874	32.3	29	.5	2.2	.037

GRAIN PROTEIN (%)

REFERENCE MEAN: MCNEAL 15.0 (N= 28)

ID	ACTUAL MEAN	NO. OBS	MEAN DIFF	T-PAIRED VALUE	P-VALUE
THATCHER	15.4	28	.4	2.7	.011
FORTUNA	15.1	28	.0	.2	.831
LEW	15.0	28	-.0	-.2	.876
NEWANA	14.4	27	-.7	-5.3	.000
HI-LINE	15.3	28	.3	1.6	.118
AMIDON	15.1	28	.1	.4	.719
ERNEST	15.9	28	.9	7.1	.000
SCHOLAR	15.5	28	.5	3.5	.001
WESTBRED 926	15.4	28	.3	3.0	.006
Conan	15.2	28	.2	1.2	.255
Reeder	15.3	28	.3	1.9	.063
MT 9806	15.8	28	.8	4.5	.000
MT 9874	14.8	28	-.2	-1.7	.100

**1999-2001 GRAIN YIELD (BU/AC) SUMMARY FOR MT 9874 COMPARED TO OTHER VARIETIES GROWN ACROSS MONTANA
(C.V.'S AND LSD's are derived from a combined analyses of years at each location separately)**

ID	DISTRICT 1 - KALISPELL				DISTRICT 2 - BOZEMAN IRRIGATED				DISTRICT 2 - BOZEMAN DRYLAND			
	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	119.8	123.3	121.5	121.5	103.8	87.4	92.0	94.4	63.0	66.6	78.2	69.3
THATCHER	103.5	110.7	115.6	109.9	83.6	63.9	64.4	70.6	54.0	54.4	60.9	56.4
FORTUNA	96.6	111.9	106.8	105.1	91.7	52.7	73.5	72.6	64.8	65.1	69.0	66.3
LEW	99.0	121.1	116.4	112.2	95.8	65.8	73.2	78.2	60.8	63.3	69.1	64.4
NEWANA	122.3	126.3	130.0	126.2	108.4	92.0	87.6	96.0	64.0	64.5	72.9	67.1
HI-LINE	113.7	120.9	116.6	117.0	100.4	87.3	85.6	91.1	66.0	67.7	82.3	72.0
AMIDON	110.7	121.7	125.5	119.3	95.7	84.9	76.1	85.6	65.1	66.8	75.1	69.0
ERNEST	108.2	118.7	120.4	115.8	90.8	75.2	78.5	81.5	63.9	65.8	77.3	69.0
SCHOLAR	117.1	122.2	138.6	126.0	95.5	84.6	81.1	87.0	65.8	70.0	74.9	70.2
WESTBRED 926	106.3	128.3	142.1	125.6	104.4	65.4	80.2	83.3	69.8	69.7	72.9	70.8
Conan	99.6	114.8	104.3	106.2	91.8	71.0	80.1	81.0	62.5	65.3	73.6	67.1
Reeder	111.1	118.1	138.0	122.4	94.0	72.8	90.5	85.8	72.7	72.3	80.1	75.0
MT 9806	122.9	123.2	149.7	131.9	91.0	85.6	88.3	88.3	67.5	71.2	76.2	71.6
MT 9874	113.3	124.6	142.5	126.8	106.0	83.9	92.7	94.2	69.4	77.1	80.2	75.6
AVERAGE	110.3	120.4	126.3	119.0	96.6	76.6	81.7	85.0	65.0	67.1	74.5	68.9
C.V. (%)				5.76				7.68				3.29
LSD (.05)				11.52				10.95				3.79
ID	DISTRICT 3 - HUNTLEY DRYLAND				DISTRICT 3 - HUNTLEY IRRIGATED							
	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE				
MCNEAL	40.8	53.4	35.6	43.2	130.1	90.5	110.6	110.4				
THATCHER	31.1	48.9	35.4	38.4	98.3	81.7	106.8	95.6				
FORTUNA	38.5	41.9	25.4	34.8	92.7	93.2	99.2	95.0				
LEW	33.1	48.0	33.9	37.9	91.1	86.7	99.3	92.4				
NEWANA	36.4	46.2	35.0	39.2	122.7	96.1	112.4	110.4				
HI-LINE	37.5	57.2	29.0	41.5	117.1	89.7	107.2	104.6				
AMIDON	34.6	49.6	34.5	39.5	132.3	92.2	123.9	116.1				
ERNEST	34.1	42.8	30.9	36.0	118.7	103.3	114.8	112.3				
SCHOLAR	36.4	47.5	32.4	39.1	112.5	101.8	121.1	111.8				
WESTBRED 926	39.9	54.1	22.9	38.9	119.7	89.7	103.6	104.3				
Conan	38.7	41.7	26.3	35.6	95.5	91.0	101.5	96.0				
Reeder	45.5	48.6	32.7	42.3	123.9	96.5	116.0	112.1				
MT 9806	38.4	55.3	30.8	41.5	121.0	102.5	121.5	115.0				
MT 9874	40.0	58.8	29.3	42.7	125.1	99.7	117.0	113.9				
AVERAGE	37.5	49.6	31.0	39.4	114.3	93.9	111.1	106.4				
C.V. (%)				11.30				6.58				
LSD (.05)				7.47				11.74				

1999-2001 GRAIN YIELD (BU/AC) SUMMARY FOR MT 9874 COMPARED TO OTHER VARIETIES GROWN ACROSS MONTANA
(C.V.'S AND LSD's are derived from a combined analyses of years at each location separately)

ID	DISTRICT 4 - MOCCASIN			DISTRICT 5 - HAVRE DRYLAND				DISTRICT 5 - CONRAD DRYLAND			
	1999	2001	AVERAGE	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	48.9	47.5	48.2	49.2	40.2	18.9	36.1	61.7	38.8	13.4	37.95
THATCHER	38.9	35.0	36.9	32.5	30.4	18.4	27.1	53.4	33.4	14.4	33.75
FORTUNA	42.8	40.4	41.6	35.9	35.9	16.7	29.5	57.7	39.2	14.1	37.01
LEW	41.6	36.8	39.2	37.2	35.5	17.9	30.2	45.9	38.7	16.1	33.58
NEWANA	42.4	38.7	40.5	45.9	35.6	21.5	34.4	64.4	46.3	15.1	41.92
HI-LINE	46.5	38.0	42.2	45.3	37.6	19.7	34.2	59.3	39.1	12.7	37.03
AMIDON	44.1	43.4	43.8	40.4	35.9	22.2	32.8	50.9	35.6	16.1	34.2
ERNEST	41.8	34.3	38.0	39.9	37.3	19.6	32.3	55.3	37.5	16.6	36.49
SCHOLAR	46.2	39.9	43.1	42.2	38.5	21.0	33.9	51.5	44.8	16.5	37.58
WESTBRED 926	44.5	38.1	41.3	41.9	38.0	18.7	32.9	59.8	46.5	13.0	39.76
Conan	37.4	40.3	38.9	47.8	36.0	20.4	34.8	55.2	42.6	15.1	37.63
Reeder	48.7	43.6	46.2	49.1	43.3	22.5	38.3	61.5	47.6	17.1	42.05
MT 9806	44.6	42.0	43.3	46.3	35.7	20.0	34.0	53.9	42.2	13.5	36.5
MT 9874	46.0	42.3	44.1	44.1	41.0	22.9	36.0	54.8	44.4	15.2	38.14
AVERAGE	43.9	40.0	42.0	42.7	37.2	20.0	33.3	56.1	41.2	14.9	37.4
C.V. (%)			5.00				7.79				9.55
LSD (.05)			4.53				4.36				5.99

ID	DISTRICT 6- SIDNEY DRYLAND				DISTRICT 6 - SIDNEY IRRIGATED			
	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	54.4	60.3	48.2	54.3	87.9	101.6	62.6	84.0
THATCHER	46.2	51.4	51.0	49.5	54.8	76.2	41.4	57.5
FORTUNA	49.1	54.4	40.1	47.9	62.4	78.3	28.2	56.3
LEW	46.1	55.3	44.0	48.5	54.2	77.7	42.2	58.1
NEWANA	55.7	61.9	53.0	56.9	79.0	89.6	48.6	72.4
HI-LINE	48.6	54.1	39.0	47.3	71.4	87.6	46.5	68.5
AMIDON	61.0	60.6	50.8	57.5	85.9	99.5	45.0	76.8
ERNEST	54.4	56.1	51.1	53.9	90.4	99.7	45.2	78.5
SCHOLAR	59.5	56.1	51.6	55.7	71.1	90.8	45.1	69.0
WESTBRED 926	54.1	58.4	46.3	52.9	81.4	91.2	52.4	75.0
Conan	51.7	51.0	44.4	49.0	81.0	80.3	56.7	72.7
Reeder	65.3	67.4	54.3	62.3	95.5	111.1	66.8	91.2
MT 9806	59.7	58.1	57.5	58.5	83.4	101.8	71.2	85.5
MT 9874	59.8	63.4	54.8	59.3	85.4	109.9	66.9	87.4
AVERAGE	54.7	57.7	49.0	53.8	77.4	92.5	51.4	73.8
C.V. (%)				5.54				8.18
LSD (.05)				5.00				10.12



1999-2001 TEST WEIGHT (LB/BU) SUMMARY FOR MT 9874 COMPARED TO OTHER VARIETIES GROWN ACROSS MONTANA
(C.V.'S AND LSD's are derived from a combined analyses of years at each location separately)

ID	DISTRICT 1 - KALISPELL				DISTRICT 2 - BOZEMAN IRRIGATED				DISTRICT 2 - BOZEMAN DRYLAND			
	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	62.0	62.3	62.5	62.3	62.2	61.8	61.7	61.9	60.4	60.0	59.3	59.8
THATCHER	61.7	60.9	62.0	61.5	62.2	59.3	61.0	60.8	55.6	58.0	58.2	57.3
FORTUNA	62.7	63.0	64.3	63.3	63.5	62.0	63.6	63.0	61.9	61.9	61.7	61.9
LEW	62.9	63.9	64.0	63.6	64.3	62.6	62.3	63.1	60.8	61.3	61.8	61.2
NEWANA	61.8	62.9	61.8	62.2	62.1	60.4	59.7	60.7	58.5	59.2	57.8	57.9
HI-LINE	62.3	62.9	63.4	62.9	63.2	62.6	62.3	62.7	59.6	59.8	61.1	60.4
AMIDON	62.2	62.2	62.9	62.5	62.4	61.3	61.7	61.8	58.7	60.4	60.0	59.7
ERNEST	63.5	63.4	64.2	63.7	63.5	62.2	62.6	62.8	59.5	61.7	61.1	60.6
SCHOLAR	63.1	62.7	61.6	62.5	63.4	61.8	62.1	62.4	60.6	60.7	60.6	60.6
WESTBRED 926	61.4	62.8	62.6	62.3	62.6	61.3	59.0	61.0	58.1	59.7	58.9	58.4
Conan	61.3	62.3	62.5	62.0	62.1	61.4	61.3	61.6	60.2	61.0	60.3	60.4
Reeder	63.0	62.7	61.7	62.5	62.9	61.9	62.7	62.5	61.0	61.7	60.7	61.1
MT 9806	62.6	63.1	62.4	62.7	62.7	62.0	62.3	62.3	60.8	60.5	59.7	60.2
MT 9874	61.5	61.7	61.9	61.7	61.4	61.0	60.6	61.0	58.7	59.3	59.2	58.9
AVERAGE	62.3	62.6	62.7	62.5	62.8	61.5	61.6	62	59.6	60.4	60	59.9
C.V. (%)				0.89				1.27				1.07
LSD (.05)				0.94				1.32				1.08
ID	DISTRICT 3 - HUNTLEY DRYLAND				DISTRICT 3 - HUNTLEY IRRIGATED							
	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE				
MCNEAL	53.9	57.1	59.6	56.9	63.9	59.2	61.9	61.7				
THATCHER	51.4	57.1	60.0	56.2	61.9	57.0	62.5	60.4				
FORTUNA	57.6	59.0	58.9	58.5	64.0	61.3	61.9	62.4				
LEW	53.0	59.7	61.2	58.0	63.2	61.8	63.3	62.8				
NEWANA	53.9	58.3	60.9	57.7	63.6	59.7	62.2	61.8				
HI-LINE	51.7	57.8	59.9	56.5	64.0	61.1	61.8	62.3				
AMIDON	56.8	58.7	60.1	58.5	61.4	61.3	62.5	61.7				
ERNEST	56.1	59.7	60.5	58.8	63.5	60.5	63.1	62.4				
SCHOLAR	57.8	60.2	60.9	59.6	63.3	61.4	63.2	62.6				
WESTBRED 926	53.8	58.6	59.8	57.4	63.4	59.2	62.0	61.5				
Conan	55.0	58.6	60.4	58.0	62.3	59.9	62.3	61.5				
Reeder	56.7	59.4	60.9	59.0	63.3	61.2	63.5	62.7				
MT 9806	52.8	59.3	60.7	57.6	59.2	60.6	63.0	60.9				
MT 9874	53.3	57.8	60.3	57.1	62.4	60.4	61.9	61.6				
AVERAGE	54.6	58.7	60.3	57.8	62.8	60.3	62.5	61.9				
C.V. (%)				2.08				1.73				
LSD (.05)				2.02				1.79				

1999--2001 TEST WEIGHT (LB/BU) SUMMARY FOR MT 9874 COMPARED TO OTHER VARIETIES GROWN ACROSS MONTANA

ID	DISTRICT 4 - MOCCASIN			DISTRICT 5 - HAVRE DRYLAND				DISTRICT 5 - CONRAD DRYLAND			
	1999	2001	AVERAGE	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	55.1	58.3	56.7	56.6	57.4	57.7	57.2	61.1	58.1	60.2	59.8
THATCHER	55.3	59.6	57.4	53.8	55.9	55.5	55.1	59.6	56.3	58.7	58.2
FORTUNA	57.9	58.6	58.2	57.9	59.2	57.2	58.1	61.6	59.8	60.6	60.7
LEW	58.8	58.7	58.8	57.0	58.5	58.1	57.9	58.6	59.1	60.9	59.5
NEWANA	57.5	55.0	56.2	55.0	57.7	59.6	57.4	62.2	59.9	62.7	61.6
HI-LINE	56.1	58.1	57.1	57.1	56.0	56.4	56.5	60.2	58.7	60.9	59.9
AMIDON	58.0	58.7	58.3	57.0	59.1	57.7	57.9	59.3	58.7	61.3	59.8
ERNEST	58.8	58.6	58.7	57.4	59.7	58.0	58.4	62.1	59.8	62.3	61.4
SCHOLAR	59.9	58.4	59.1	58.1	60.7	59.4	59.4	61.5	60.0	62.3	61.3
WESTBRED 926	56.6	58.1	57.4	56.6	56.5	58.3	57.1	60.4	58.3	62.3	60.3
Conan	59.0	58.6	58.8	58.2	59.4	59.5	59.0	61.7	59.7	62.5	61.3
Reeder	59.9	57.7	58.8	58.6	60.1	58.2	59.0	61.9	60.5	62.5	61.6
MT 9806	58.2	57.7	57.9	57.5	57.8	57.4	57.6	61.3	58.9	61.8	60.7
MT 9874	54.9	56.6	55.8	56.6	56.9	56.9	56.8	61.3	57.1	60.8	59.7
AVERAGE	57.6	58.0	57.8	57.0	58.2	57.8	57.7	60.9	58.9	61.4	60.4
C.V. (%)			2.32				1.52				1.18
LSD (.05)			2.97				1.47				1.20

ID	DISTRICT 6 - SIDNEY DRYLAND				DISTRICT 6 - SIDNEY IRRIGATED			
	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	60.8	61.4	60.0	60.7	61.2	61.1	58.1	60.1
THATCHER	59.7	61.4	59.0	60.0	57.3	59.9	57.2	58.1
FORTUNA	62.0	61.4	58.5	60.6	59.6	61.4	52.4	57.8
LEW	62.2	63.1	60.7	62.0	60.3	60.8	58.6	59.9
NEWANA	61.2	62.2	60.3	61.2	60.1	59.6	57.2	59.0
HI-LINE	61.8	62.4	60.4	61.5	59.9	60.2	55.6	58.5
AMIDON	61.5	61.7	60.0	61.1	61.8	60.7	57.8	60.1
ERNEST	62.7	63.1	60.6	62.1	62.5	62.3	59.0	61.3
SCHOLAR	61.8	63.0	61.3	62.0	61.3	60.9	59.3	60.5
WESTBRED 926	61.7	61.2	58.4	60.4	60.2	59.1	56.6	58.7
Conan	62.3	62.0	60.7	61.7	60.9	59.1	59.9	60.0
Reeder	62.3	62.0	60.9	61.7	62.9	60.6	59.4	61.0
MT 9806	61.7	62.5	61.0	61.7	61.4	60.2	60.1	60.6
MT 9874	60.8	61.0	59.8	60.6	60.5	59.1	57.8	59.1
AVERAGE	61.6	62.0	60.1	61.2	60.7	60.4	57.8	59.6
C.V. (%)				0.87				2.16
LSD (.05)				0.89				2.16

1999-2001 PLANT HEIGHT (INCHES SUMMARY FOR MT9874 COMPARED TO OTHER VARIETIES GROWN ACROSS MONTANA
(C.V.'S AND LSD's are derived from a combined analyses of years at each location separately)

ID	DISTRICT 1 - KALISPELL				DISTRICT 2 - BOZEMAN IRRIGATED				DISTRICT 2 - BOZEMAN DRYLAND			
	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	38.7	32.4	33.4	34.8	38.7	39.1	34.5	37.4	33.6	35.3	33.2	34.0
THATCHER	45.9	42.6	39.4	42.6	46.7	47.5	43.8	46.0	41.9	44.7	41.3	42.6
FORTUNA	39.4	41.0	38.5	39.6	43.9	45.6	38.3	42.6	41.8	42.4	37.5	40.6
LEW	40.6	40.0	41.1	40.6	43.7	44.1	41.3	43.1	40.2	42.2	38.5	40.3
NEWANA	35.4	30.7	30.6	32.3	35.7	36.0	32.8	34.9	30.9	33.3	31.0	31.7
HI-LINE	36.1	30.4	31.6	32.7	36.2	35.3	29.9	33.8	33.5	33.4	28.9	31.9
AMIDON	42.9	38.2	39.4	40.2	41.4	43.1	40.2	41.6	38.5	42.2	37.6	39.4
ERNEST	41.9	36.9	38.2	39.0	42.4	42.7	41.2	42.1	38.2	42.0	36.9	39.0
SCHOLAR	40.0	35.5	35.6	37.1	40.8	41.9	38.1	40.2	37.5	38.6	36.4	37.5
WESTBRED 926	35.1	30.2	32.0	32.4	36.3	35.5	30.6	34.1	32.5	32.3	30.0	31.6
Conan	35.6	29.9	31.8	32.4	34.7	36.0	31.9	34.2	31.6	33.7	30.3	31.8
Reeder	39.7	32.2	35.5	35.8	38.9	39.4	34.7	37.7	36.6	37.7	31.6	35.3
MT 9806	36.3	31.4	32.8	33.5	37.1	37.5	33.8	36.1	33.1	34.7	31.7	33.2
MT 9874	37.7	33.2	33.7	34.9	37.7	40.2	35.9	37.9	32.0	36.2	32.2	33.5
AVERAGE	38.9	34.6	35.3	36.3	39.6	40.3	36.2	38.7	35.9	37.8	34.1	35.9
C.V. (%)				3.78				5.72				2.86
LSD (.05)				2.30				3.71				1.72

ID	DISTRICT 3 - HUNTLEY DRYLAND				DISTRICT 3 - HUNTLEY IRRIGATED			
	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	30.9	31.2	22.9	28.3	37.3	34.1	34.4	35.3
THATCHER	39.7	38.3	31.1	36.3	45.9	43.1	41.6	43.5
FORTUNA	39.0	35.8	25.8	33.5	39.8	39.7	41.9	40.5
LEW	33.3	35.9	28.1	32.4	42.5	37.8	40.2	40.2
NEWANA	26.2	26.5	24.5	25.7	34.6	32.5	33.6	33.6
HI-LINE	30.0	28.2	21.1	26.5	33.4	30.9	32.4	32.2
AMIDON	36.6	34.6	24.1	31.8	43.6	37.2	40.8	40.6
ERNEST	34.5	35.8	26.1	32.1	39.8	39.8	40.8	40.1
SCHOLAR	34.4	33.7	24.6	30.9	40.9	36.3	38.6	38.6
WESTBRED 926	31.2	29.5	19.1	26.6	34.3	29.6	32.2	32.0
Conan	28.4	27.6	19.7	25.2	33.8	32.2	31.5	32.5
Reeder	32.5	31.0	20.8	28.1	36.6	33.7	35.6	35.3
MT 9806	31.7	29.2	24.4	28.4	36.1	33.9	30.8	33.6
MT 9874	31.0	31.8	25.8	29.5	39.3	35.0	36.1	36.8
AVERAGE	32.8	32.1	24.2	29.7	38.4	35.4	36.5	36.8
C.V. (%)				5.97				3.53
LSD (.05)				2.97				2.18

1999-2001 PLANT HEIGHT (INCHES) SUMMARY FOR MT9874 COMPARED TO OTHER VARIETIES GROWN ACROSS MONTANA
(C.V.'S AND LSD's are derived from a combined analyses of years at each location separately)

ID	DISTRICT 4 - MOCCASIN			DISTRICT 5 - HAVRE DRYLAND				DISTRICT 5 - CONRAD DRYLAND			
	1999	2001	AVERAGE	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	32.9	31.3	32.1	29.5	30.7	18.2	26.1	33.0	29.0	21.0	27.7
THATCHER	40.0	35.5	37.8	39.2	32.4	20.0	30.5	40.0	37.0	26.0	34.3
FORTUNA	35.8	34.0	34.9	37.1	32.8	19.4	29.8	38.0	36.0	23.0	32.3
LEW	37.1	36.4	36.7	39.0	33.4	20.3	30.9	37.0	34.0	21.0	30.7
NEWANA	28.8	29.9	29.4	30.3	27.2	19.5	25.6	31.0	28.0	19.0	26.0
HI-LINE	31.3	30.3	30.8	31.8	27.3	18.1	25.7	34.0	27.0	19.0	26.7
AMIDON	36.7	34.6	35.7	36.4	32.1	19.1	29.2	38.0	33.0	22.0	31.0
ERNEST	35.1	33.2	34.2	36.4	32.1	20.1	29.5	38.0	34.0	22.0	31.3
SCHOLAR	33.4	31.9	32.7	36.1	31.7	19.1	29.0	39.0	32.0	21.0	30.7
WESTBRED 926	30.6	28.0	29.3	29.0	28.3	18.2	25.2	32.0	28.0	20.0	26.7
Conan	30.2	33.4	31.8	30.5	27.8	17.5	25.3	33.0	29.0	20.0	27.3
Reeder	33.3	30.8	32.1	34.7	30.2	19.1	28.0	35.0	29.0	20.0	28.0
MT 9806	32.6	30.4	31.5	32.5	29.7	19.6	27.2	34.0	30.0	21.0	28.3
MT 9874	32.2	30.6	31.4	32.9	28.5	19.3	26.9	33.0	30.0	22.0	28.3
AVERAGE	33.6	32.2	32.9	34.0	30.3	19.1	27.8	35.4	31.1	21.2	29.2
C.V. (%)			3.84				5.83				4.40
LSD (.05)			2.73				2.72				2.16

ID	DISTRICT 6 - SIDNEY DRYLAND				DISTRICT 6 - SIDNEY IRRIGATED			
	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	29.6	28.9	27.9	28.8	37.9	36.5	26.5	33.6
THATCHER	40.0	36.1	35.8	37.3	42.7	42.0	32.0	38.9
FORTUNA	36.2	33.2	30.5	33.3	38.2	37.7	31.9	35.9
LEW	37.6	35.3	32.5	35.1	38.3	39.7	31.8	36.6
NEWANA	28.3	28.1	26.8	27.7	35.9	34.3	25.7	32.0
HI-LINE	28.1	27.3	25.5	27.0	33.5	32.2	24.5	30.1
AMIDON	38.8	32.4	31.5	34.2	40.4	37.1	34.3	37.2
ERNEST	33.5	32.0	31.3	32.3	38.1	37.6	32.0	35.9
SCHOLAR	35.9	31.9	31.5	33.1	36.8	35.2	30.0	34.0
WESTBRED 926	28.6	26.8	22.8	26.1	34.1	31.8	26.0	30.6
Conan	28.8	26.4	23.9	26.4	35.3	32.5	26.0	31.3
Reeder	31.1	28.2	26.7	28.7	38.3	35.9	28.5	34.2
MT 9806	31.1	29.1	26.9	29.0	35.7	34.2	27.4	32.5
MT 9874	31.4	30.1	28.0	29.8	37.7	36.6	27.5	34.0
AVERAGE	32.8	30.4	28.7	30.6	37.4	36.0	28.9	34.1
C.V. (%)				3.47				3.55
LSD (.05)				1.78				2.03

1999-2001 HEADING DATE (JULIAN DAYS; 175=JUNE 24) SUMMARY FOR MT 9874 COMPARED TO OTHER VARIETIES GROWN ACROSS MONTANA
(C.V.'S AND LSD's are derived from a combined analyses of years at each location separately)

DISTRICT 1 - KALISPELL					DISTRICT 2 - BOZEMAN IRRIGATED				DISTRICT 2 - BOZEMAN DRYLAND			
ID	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	176	172	177	175	183	179	178	180	183	180	176	180
THATCHER	179	176	176	177	183	180	179	181	185	180	178	181
FORTUNA	175	173	175	175	182	178	176	179	182	177	174	178
LEW	179	175	177	177	183	181	179	181	186	180	176	181
NEWANA	178	175	176	176	185	180	179	181	186	180	178	181
HI-LINE	172	171	174	172	179	176	175	177	180	175	172	176
AMIDON	177	173	176	176	181	177	175	178	182	177	175	178
ERNEST	176	172	175	175	180	177	175	177	182	178	175	178
SCHOLAR	177	173	176	176	182	178	177	179	184	179	175	179
WESTBRED 926	171	165	173	169	179	174	173	175	181	174	172	176
Conan	173	170	175	172	180	177	175	177	182	176	173	177
Reeder	174	172	174	173	181	175	175	177	182	177	174	178
MT 9806	175	172	176	174	181	177	177	178	182	177	173	177
MT 9874	179	174	179	177	182	181	180	181	183	181	177	180
AVERAGE	176	172	176	175	182	178	177	179	183	178	175	179
C.V. (%)				0.68				0.78				0.43
LSD (.05)				1.99				2.33				1.29

DISTRICT 3 - HUNTLEY DRYLAND					DISTRICT 3 - HUNTLEY IRRIGATED			
ID	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	171	166	162	166	169	163	169	167
THATCHER	171	165	163	167	171	162	168	167
FORTUNA	169	164	160	165	167	160	168	165
LEW	172	166	163	167	171	162	170	168
NEWANA	171	168	163	167	169	162	170	167
HI-LINE	167	162	158	162	166	158	165	163
AMIDON	170	164	160	165	169	161	167	166
ERNEST	171	165	161	166	169	160	167	165
SCHOLAR	171	164	161	165	171	159	167	166
WESTBRED 926	165	159	157	160	165	155	162	161
Conan	167	162	159	163	167	158	165	163
Reeder	167	161	159	162	167	159	163	163
MT 9806	170	163	160	164	170	159	167	165
MT 9874	171	166	162	166	171	163	168	167
AVERAGE	169	164	161	165	169	160	167	165
C.V. (%)				0.36				0.64
LSD (.05)				0.99				1.76

1999-2001 HEADING DATE (JULIAN DAYS; 175=JUNE 24) SUMMARY FOR MT 9874 COMPARED TO OTHER VARIETIES GROWN ACROSS MONTANA
(C.V.'S AND LSD's are derived from a combined analyses of years at each location separately)

	DISTRICT 4 - MOCCASIN			DISTRICT 5 - HAVRE DRYLAND				DISTRICT 5 - CONRAD DRYLAND			
ID	1999	2001	AVERAGE	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	186	179	183	174	177	175	175	183	179	176	179
THATCHER	188	181	184	175	179	177	177	185	181	178	181
FORTUNA	184	175	180	174	174	173	174	182	179	174	178
LEW	188	180	184	175	179	175	176	184	181	175	180
NEWANA	187	180	184	175	178	175	176	183	179	176	179
HI-LINE	182	177	180	174	173	173	173	181	177	173	177
AMIDON	185	177	181	174	175	175	175	183	178	175	179
ERNEST	184	177	180	176	173	174	174	182	179	175	179
SCHOLAR	186	179	183	175	175	176	175	185	180	176	180
WESTBRED 926	181	176	179	174	172	172	173	181	174	173	176
Conan	183	178	180	175	173	175	174	181	178	174	178
Reeder	184	176	180	175	173	173	174	182	178	174	178
MT 9806	185	178	181	175	174	174	174	182	179	175	179
MT 9874	187	180	183	175	176	174	175	183	179	176	179
AVERAGE	185	178	182	175	175	174	175	183	179	175	179
C.V. (%)			0.43				0.70				0.40
LSD (.05)			1.67				2.05				1.21

	DISTRICT 6 - SIDNEY DRYLAND				DISTRICT 6 - SIDNEY IRRIGATED			
ID	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	172	168	175	172	172	165	182	173
THATCHER	173	169	176	173	174	167	184	175
FORTUNA	170	165	173	169	172	162	181	171
LEW	174	169	176	173	173	166	184	174
NEWANA	173	169	176	173	174	165	184	174
HI-LINE	168	164	172	168	169	160	180	170
AMIDON	171	166	175	171	172	163	181	172
ERNEST	170	165	173	170	170	162	180	171
SCHOLAR	173	168	175	172	172	163	183	173
WESTBRED 926	166	161	170	166	167	160	178	168
Conan	169	164	173	169	171	162	181	171
Reeder	169	164	174	169	169	161	180	170
MT 9806	170	164	174	170	172	162	180	172
MT 9874	173	169	175	172	174	165	182	174
AVERAGE	171	166	174	170	172	163	181	172
C.V. (%)				0.34				0.36
LSD (.05)				0.97				1.04

1999-2001 GRAIN PROTEIN (%) SUMMARY FOR MT 9874 COMPARED TO OTHER VARIETIES GROWN ACROSS MONTANA
(C.V.'S AND LSD's are derived from a combined analyses of years at each location separately)

ID	DISTRICT 1 - KALISPELL			DISTRICT 2 - BOZEMAN IRRIGATED				DISTRICT 2 - BOZEMAN DRYLAND			
	1999	2000	AVERAGE	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	13.5	15.4	14.5	14.0	14.9	15.6	14.8	16.2	15.7	14.7	15.5
THATCHER	13.6	14.9	14.3	13.2	15.7	15.3	14.7	17.7	16.7	15.7	16.7
FORTUNA	13.0	15.3	14.2	14.2	15.3	14.7	14.7	15.8	15.9	14.3	15.3
LEW	13.4	14.4	13.9	13.3	14.4	15.0	14.2	16.3	15.0	14.8	15.4
NEWANA	12.1	14.1	13.1	12.1	13.5	14.1	13.2	16.3	15.0	14.6	15.3
HI-LINE	12.7	15.5	14.1	13.9	14.5	14.3	14.2	15.8	15.7	14.7	15.4
AMIDON	13.7	15.1	14.4	14.5	15.3	14.8	14.9	16.4	15.9	14.6	15.6
ERNEST	13.7	15.9	14.8	15.4	16.7	15.7	15.9	17.1	16.4	15.2	16.2
SCHOLAR	14.0	15.6	14.8	13.9	15.4	15.4	14.9	17.0	16.5	15.4	16.3
WESTBRED 926	13.4	15.2	14.3	13.3	15.0	15.3	14.5	16.4	16.1	14.6	15.7
Conan	13.2	15.3	14.3	14.2	15.5	14.6	14.8	16.2	16.3	14.8	15.8
Reeder	13.8	15.8	14.8	13.8	15.3	16.0	15.0	16.5	16.3	15.3	16.0
MT 9806	13.5	15.1	14.3	15.5	15.6	15.6	15.6	16.9	16.2	16.0	16.4
MT 9874	12.9	14.6	13.8	13.8	14.1	15.1	14.3	15.8	14.5	14.6	15.0
AVERAGE	13.3	15.2	14.2	13.9	15.1	15.1	14.7	16.5	15.9	15.0	15.8
C.V. (%)			2.27				4.10				2.07
LSD (.05)			0.70				1.01				0.55

ID	DISTRICT 3 - HUNTLEY DRYLAND				DISTRICT 3 - HUNTLEY IRRIGATED			
	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	18.1	18.0	14.9	17.0	15.1	14.8	13.5	14.5
THATCHER	18.9	17.8	14.9	17.2	15.2	16.8	14.9	15.6
FORTUNA	16.7	17.9	15.1	16.6	14.9	15.3	14.8	15.0
LEW	18.4	17.8	13.6	16.6	14.9	13.7	13.9	14.2
NEWANA	17.2	17.7	15.4	16.8	13.2	14.9	12.8	13.6
HI-LINE	17.8	17.7	17.0	17.5	14.1	13.8	14.9	14.3
AMIDON	17.9	17.2	15.7	16.9	14.8	13.9	14.4	14.4
ERNEST	18.6	18.0	16.0	17.5	15.3	16.8	13.8	15.3
SCHOLAR	19.1	17.6	15.7	17.5	14.9	15.5	14.0	14.8
WESTBRED 926	18.2	17.6	15.9	17.2	14.6	15.1	14.8	14.8
Conan	17.9	16.4	17.0	17.1	14.0	15.4	14.9	14.8
Reeder	17.2	17.1	17.2	17.2	14.8	15.4	13.8	14.7
MT 9806	18.4	17.8	15.9	17.4	14.5	15.1	13.4	14.3
MT 9874	17.8	16.5	13.7	16.0	14.5	14.2	13.8	14.2
AVERAGE	18.0	17.5	15.6	17.0	14.6	15.1	14.1	14.6
C.V. (%)				4.85				4.61
LSD (.05)				1.39				1.13

- 1999-2001 GRAIN PROTEIN (%) SUMMARY FOR MT 9874 COMPARED TO OTHER VARIETIES GROWN ACROSS MONTANA
(C.V.'S AND LSD's are derived from a combined analyses of years at each location separately)

ID	DISTRICT 4 - MOCCASIN			DISTRICT 5 - HAVRE DRYLAND				DISTRICT 5 - CONRAD DRYLAND			
	1999	2001	AVERAGE	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	16.1	16.2	16.2	15.9	15.7	17.0	16.2	12.4	14.5	14.8	13.9
THATCHER	16.8	17.2	17.0	16.6	17.6	17.8	17.3	11.9	15.4	13.9	13.7
FORTUNA	15.4	16.4	15.9	14.5	15.6	16.6	15.6	13.2	15.0	15.3	14.5
LEW	15.4	18.3	16.9	16.0	16.2	17.3	16.5	12.9	14.7	14.6	14.1
NEWANA	15.8	16.2	16.0	15.1	15.7	16.3	15.7	12.0	14.3	14.7	13.7
HI-LINE	16.3	18.4	17.4	16.0	17.9	17.8	17.2	12.5	15.3	16.5	14.8
AMIDON	15.2	17.7	16.5	14.0	15.4	16.6	15.3	13.0	14.8	15.2	14.3
ERNEST	16.1	18.0	17.1	16.3	16.8	18.5	17.2	12.7	16.0	15.2	14.6
SCHOLAR	15.5	19.3	17.4	15.5	15.6	17.8	16.3	12.9	14.8	15.1	14.3
WESTBRED 926	16.4	18.1	17.3	15.8	16.4	17.1	16.4	13.3	15.6	15.4	14.8
Conan	16.3	16.8	16.6	14.8	16.1	17.1	16.0	12.9	14.6	15.3	14.3
Reeder	15.2	17.0	16.1	16.5	15.5	17.0	16.3	12.9	14.1	14.3	13.8
MT 9806	16.2	18.6	17.4	16.1	17.5	19.0	17.5	14.6	15.1	17.1	15.6
MT 9874	15.4	16.9	16.2	14.9	16.5	16.7	16.0	12.7	14.5	14.8	14.0
AVERAGE	15.9	17.5	16.7	15.6	16.3	17.3	16.4	12.9	14.9	15.2	14.3
C.V. (%)			4.56				3.04				3.64
LSD (.05)			1.64				0.84				0.87

ID	DISTRICT 6 - SIDNEY DRYLAND				DISTRICT 6 - SIDNEY IRRIGATED			
	1999	2000	2001	AVERAGE	1999	2000	2001	AVERAGE
MCNEAL	12.2	13.4	14.7	13.4	13.5	14.1	16.1	14.6
THATCHER	12.4	13.1	14.2	13.2	13.4	13.9	17.0	14.8
FORTUNA	12.6	13.1	15.1	13.6	14.7	14.3	16.8	15.3
LEW	12.1	13.3	14.4	13.3	14.8	14.8	16.7	15.4
NEWANA	11.9	12.7	14.0	12.9	12.4	13.8	14.8	13.7
HI-LINE	13.0	13.6	14.8	13.8	13.8	14.9	15.9	14.9
AMIDON	13.5	14.0	14.3	13.9	13.9	15.1	15.6	14.9
ERNEST	14.3	14.5	15.8	14.9	14.3	15.4	16.4	15.4
SCHOLAR	12.8	14.9	15.1	14.3	13.6	14.9	16.4	15.0
WESTBRED 926	12.2	14.4	14.8	13.8	14.2	14.6	16.6	15.1
Conan	12.7	14.2	15.2	14.0	14.0	14.7	15.4	14.7
Reeder	12.0	14.1	15.6	13.9	13.8	15.4	16.4	15.2
MT 9806	13.4	15.3	14.9	14.5	14.4	15.2	15.5	15.0
MT 9874	12.9	14.3	15.2	14.1	13.6	15.1	15.5	14.7
AVERAGE	12.7	13.9	14.9	13.9	13.9	14.7	16.1	14.9
C.V. (%)				3.60				3.28
LSD (.05)				1.04				0.82

**1999- 2000 (9 LOCATIONS) MILLING AND BAKING QUALITY SUMMARY FOR MT 9874 COMPARED TO OTHER VARIETIES GROWN
ACROSS MONTANA**

VARIETY	FLOUR PROTEIN %	FLOUR YIELD %	FLOUR ASH %	MIXOGRAPH ABSORPTION %	MIXOGRAPH TIME (MIN.)	BAKE ABSORPTION %	BAKE MIX TIME (MIN.)	LOAF VOLUME (CC.)
FORTUNA	12.3	69.4	0.43	61.3	2.9	71.4	4.3	1023
HI-LINE	12.3	63.5	0.42	61.7	4.3	73.0	7.7	1122
MCNEAL	11.9	66.2	0.41	61.9	4.9	73.8	9.0	1060
AMIDON	12.5	69.2	0.43	62.3	3.0	71.8	4.4	1060
ERNEST	13.0	68.5	0.40	63.0	3.4	73.0	7.2	1101
WESTBRED 926	12.3	66.9	0.44	61.5	3.8	71.6	5.7	1075
SCHOLAR	12.5	69.5	0.44	62.2	2.7	71.9	3.8	1030
REEDER	12.7	67.2	0.37	61.7	2.9	71.8	4.2	1051
MT9874	12.2	68.3	0.42	61.8	3.2	72.3	4.7	1053
NURSERY AVG.	12.1	66.7	0.42	61.2	3.7	71.8	5.6	1061