

**MISSISSIPPI VALLEY UNIFORM REGIONAL
BARLEY NURSERY**

2002

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
NORTHERN PLAINS AREA
AND
COOPERATING STATE AGRICULTURAL EXPERIMENT STATIONS

MISSISSIPPI VALLEY UNIFORM REGIONAL BARLEY NURSERY 2002

Compiled by Michael C. Edwards

This is a joint progress report of cooperative investigations underway in the State Agricultural Experiment Stations and the Agricultural Research Service of the United States Department of Agriculture containing preliminary data which have not been sufficiently confirmed to justify general release; interpretations may be modified with additional experimentation. Confirmed results will be published through established channels. The report is primarily a tool for use of cooperators and their official staffs and to those persons having direct and special interest in the development of agricultural research programs.

This report includes data furnished by the State Agricultural Experiment Stations, the provinces of Manitoba and Saskatchewan, Agriculture and Agri-Food Canada, and the Agricultural Research Service, and was compiled in the USDA-ARS Cereal Crops Research Unit at North Dakota State University. The report is not intended for publication and should not be referred to in literature citations nor quoted in publicity or advertising. Use of the data may be granted for certain purposes upon written request to the agency or agencies involved.

ACKNOWLEDGEMENT: The computer program used to evaluate and compile the data for most of this report was developed by Dr. James Hammond [Department of Plant Sciences, North Dakota State University].

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List of Stations and Cooperators

2002 Mississippi Valley Uniform Regional Barley Nursery

Stations

Cooperators

Aberdeen, Idaho	D. Burrup, USDA, Agricultural Research Service
Hamiota, Manitoba	M. C. Therrien, Agriculture Canada
Winnipeg, Manitoba	J. Gilbert, A. Tekauz, Agriculture Canada
Caro, Michigan	R. D. Freed, Michigan State University
Crookston, Minnesota	Kevin Smith, University of Minnesota
Morris, Minnesota	Kevin Smith, University of Minnesota
Bottineau, North Dakota	D.B. Cooper, S. Askelson, M. Emrick, Busch Agricultural Resources
Sidney, Montana	D.B. Cooper, S. Askelson, M. Emrick, Busch Agricultural Resources
Carrington, North Dakota	R. D. Horsley, J. D. Franckowiak, North Dakota State University
Fargo, North Dakota	R. D. Horsley, J. D. Franckowiak, North Dakota State University
Osnabrock, North Dakota	R. D. Horsley, J. D. Franckowiak, B. Steffenson, North Dakota State University and University of Minnesota
Saskatoon, Saskatchewan	B. L. Harvey, University of Saskatchewan
Madison, Wisconsin	H. Kaeppler, R. D. Duerst, University of Wisconsin

2002 Mississippi Valley Barley Nursery

Summary

Ten locations contributed useable data for this year's report. The Busch Agricultural Resources nursery grown in Minot last year was moved to Sidney, MT this year. Difficulties with the Crookston nursery resulted in no data being submitted from that nursery. The substitution of Osnabrock for Langdon continues (about 12 miles east). The reader is referred to the "Nursery Conditions" section immediately following this summary for other comments concerning specific locations.

Average planting date was 4 days later than the 30-year average, while average heading date was about nine days later. The average planting date of April 30th was only four days earlier than last year. Heading date (July 3rd) was only one day later than last year.

Average yield (3832 kg/ha or 71bu/a) was lower than the 30-year average and quite a bit lower than last year (4402 kg/ha). Entries with the best yields were M112, 6B95-2482, M113, M111, and ND17643.

Four stations reported test weight; the average of 64 kg/hl was very close to that of last year (65.4). As expected, two-row selections comprised three of the five best entries for test weight. The greatest test weights were recorded for M109, M112, 2ND18365, Robust, and M113.

Lodging data were reported from three locations, including Morris, Carrington, and Sidney. The five entries with the least lodging were ND17655, ND17643, ND17687, 6B98-9339, and BT389. The reader should remember that 0% lodging was entered for all entries in 1996 due to a lack of data. Thus, the 10-year averages will be somewhat skewed by the 1996 data. Average plant height was 77.8 cm. Shortest entries were M110, M111, M109, M112, and ND16301.

Kernel plumpness data were reported from Bottineau, Sidney, Hamiota, and Kernen. Please refer to Table 18 for further information.

Detailed disease data were obtained from the Winnipeg nursery. Estimations of *Fusarium* head blight severity and stem rust reaction also appear in the report. These notes appear in Tables 19-22.

NURSERY CONDITIONS

MANITOBA:

HAMIOTA:	Previous crop:	Faba beans
	Soil type:	black chernozem Newdale medium textured clay loam.
	Fertilizer	
	available:	40 lbs/a N; lbs/a P; >300 lbs/a K.
	added:	30 N - 40 P - 0 K lbs/ac.
	Remarks:	Moderate drought conditions; timely rains. Cold and dry spring. Disease and insect (grasshopper) pressure moderate. No lodging. Short statured crop. Applied 2,4-D/MCPA, Lontrel and Tilt at recommended rates.

MICHIGAN:

CARO:	Previous crop:	soybean.
	Soil type:	capac loam.
	Fertilizer	
	available:	.
	added:	200 lbs of 19-19-19.
	Remarks:	average growing season.

MINNESOTA:

CROOKSTON:	Previous crop:	
	Soil type:	Wheatville, silt-loam.
	Fertilizer	
	available:	lbs/a N; lbs/a P; lbs/a K.
	added:	lbs/a N.
	Remarks:	nursery lost.

MORRIS:	Previous crop:	soybeans.
	Soil type:	Nutley clay - Flom loam.
	Fertilizer	
	available:	lbs/a N; lbs/a P; lbs/a K.
	added:	50 lbs/a N; lbs/a P; lbs/a K.
	Remarks:	No precipitation between May 12 and June 17 resulting in low soil moisture and plant stress. Strong winds just prior to harvest resulted in some lodging. Yields were below average and variability(CV) was much higher than in previous years.

NORTH DAKOTA:

CARRINGTON:	Previous crop:	soybeans.
	Soil type:	Heimdahl loam, medium

	Fertilizer available: added: Remarks:	33 lbs/a N; 48 lbs/a P; 394 lbs/a K 90 lbs/a N Sowing was delayed about one week from normal due to wet soil conditions. Levels of Fusarium head blight were lower than in previous years. Harvest was about one week later than average.
FARGO:	Previous crop: Soil type: Fertilizer available: added: Remarks:	soybeans Fargo, silty clay loam 47 lbs/a N; 8 lbs/a P; 397 lbs/a K lbs/a N; lbs/a P. Sowing was about 10 days later than average. Precipitation from heading through maturity was below average and severely limited yield.
OSNABROCK:	Previous crop: Soil type: Fertilizer available: added: Remarks:	canola. . lbs/a N; lbs/a P; lbs/a K. lbs/a N. Sowing was about one week earlier than average. Precipitation from heading through maturity was below average. This reduced yield potential but also reduced the levels of Fusarium head blight as compared to previous years. The predominant foliar disease was septoria speckled leaf blotch.
BOTTINEAU:	Previous crop: Soil type: Fertilizer available: added: Remarks:	canola. . . . This location had a severe oat and thistle problem early. It was sprayed a total of three times to gain control. Rain prior to harvest weathered the grain somewhat.
SIDNEY (MT):	Previous crop: Soil type: Fertilizer available: added: Remarks:	Sugarbeets. . . . Hot winds in July lowered test weight and plump scores. Due to mechanical problems with the combines and weather, harvest was delayed a week. The seed was visually more weathered because of this.

WISCONSIN:

MADISON:	Previous crop:	soybeans
	Soil type:	St. Charles, loam
	Fertilizer	
	available:	.
	added:	none
	Remarks:	Planting was made in mid April into an excellent seedbed. Considerable rainfall and cool temperatures during the early growing season led to good germination, even stand, and much tillering. At about heading stage, it turned dry with almost no additional rainfall recorded through harvest. Even so, yields and test weights were quite good. No lodging was observed and little or no foliar disease was present. A small amount of smut was observed scattered throughout the nursery.

SASKATCHEWAN:

KERNEN:	Previous crop:	.
	Soil type:	.
	Fertilizer	
	available:	.
	added:	50 lbs/a of 12-51-0.
	Remarks:	Buctril M applied at .405 L/acre June 26.

TABLE 1. AVERAGE OVER ALL STATIONS FOR THE INDICATED VARIABLES.

Variety/ Selection	Yield ¹ (Kg/ha)	Test Wt ² (kg/hl)	Height ³ (cm)	Lodging ⁴ (%)	Heading ⁵ (5/31=0)	Ripe ⁶ (5/31=0)
BARBLESS	3185.1	64.3	89.8	46.0	33.1	78.0
LARKER	3453.2	64.4	81.4	40.0	31.0	76.0
MOREX	3398.3	62.5	84.7	48.8	31.2	76.0
ROBUST	3666.3	65.0	81.9	38.8	32.2	81.0
STANDER (M	3868.7	63.4	77.0	26.1	32.2	82.0
LEGACY (6B	3863.8	62.7	77.6	26.7	33.4	78.0
MNBRITE (M	3601.2	63.2	82.5	33.8	32.5	81.0
DRUMMOND (3638.3	63.8	77.6	21.1	31.9	79.0
LACEY (M98	3918.7	65.0	75.5	26.0	31.6	76.0
ND16301	3780.9	62.9	74.3	30.0	31.8	81.0
6B95-2482	4114.6	64.9	74.6	30.0	31.9	80.0
6B95-2089	3772.9	64.5	76.2	27.7	32.0	76.0
M109	4033.4	65.5	72.7	30.0	31.7	81.0
M110	4044.1	64.7	69.5	30.4	31.8	81.0
ND16922	3894.5	63.5	75.3	25.6	31.7	79.0
2ND18365	3976.3	65.1	77.9	29.3	30.6	78.0
6B98-9105	3905.3	62.9	79.7	32.7	31.4	77.0
6B98-9170	4055.4	64.0	76.3	28.3	31.9	79.0
6B98-9339	3875.7	63.5	75.7	20.6	33.6	80.0
BT389	3875.1	62.8	77.8	21.0	36.0	84.0
BT478	3605.5	63.1	86.1	29.9	34.1	79.0
BT483	3637.8	62.6	80.9	29.4	33.7	82.0
M111	4087.2	64.9	72.2	30.6	32.0	82.0
M112	4261.6	65.4	74.0	27.1	31.7	81.0
M113	4112.5	65.0	74.6	29.4	32.2	79.0
ND17643	4076.4	65.0	77.2	18.3	33.3	82.0
ND17655	3880.0	63.8	80.0	17.7	34.8	81.0
ND17687	3733.0	63.7	75.2	20.6	33.7	78.0
ND17711	3804.6	63.5	77.9	24.4	32.8	78.0
HIGH MEAN	4261.6	65.5	89.8	48.8	36.0	84.0
LOW MEAN	3185.1	62.5	69.5	17.7	30.6	76.0
EXP MEAN	3831.7	64.0	77.8	29.0	32.5	79.5
C. V. %	9.2	1.4	4.1	26.8	3.0	
LSD 5%	308.4	1.3	3.6	12.7	1.0	
LSD 1%	405.3	1.7	4.7	16.9	1.2	
# of Loc	10	4	6	3	8	1

¹Morris, Fargo, Carrington, Osnabrock, Bottineau, Sidney, Hamiota, Kernan, Madison, Caro

²Hamiota, Kernan, Madison, Caro

³Morris, Fargo, Carrington, Osnabrock, Hamiota, Madison

⁴Morris, Carrington, Sidney

⁵Morris, Fargo, Carrington, Osnabrock, Hamiota, Kernan, Madison, Caro

⁶Hamiota

TABLE 2. AVERAGE OVER STATIONS AT MANITOBA, MINNESOTA, AND NORTH DAKOTA.

Variety/ Selection	Yield ¹ (Kg/ha)	Test Wt ² (kg/hl)	Height ³ (cm)	Lodging ⁴ (%)	Heading ⁵ (5/31=0)	Ripe ⁶ (5/31=0)
BARBLESS	3004.1	65.5	88.6	29.0	35.1	78.0
LARKER	3110.9	66.7	79.9	35.0	32.4	76.0
MOREX	3033.7	64.6	83.3	38.2	32.1	76.0
ROBUST	3567.5	67.3	80.1	30.7	32.9	81.0
STANDER (M	3892.2	65.0	74.8	19.2	33.6	82.0
LEGACY (6B	3686.8	64.2	76.4	25.0	34.9	78.0
MNBRITE (M	3476.9	64.8	80.6	35.7	34.0	81.0
DRUMMOND (3602.4	66.2	75.9	16.7	33.1	79.0
LACEY (M98	3818.6	66.7	73.8	24.0	32.9	76.0
ND16301	3762.1	64.5	72.1	20.0	32.5	81.0
6B95-2482	4151.4	67.1	73.4	25.0	32.9	80.0
6B95-2089	3619.5	65.9	74.4	21.5	33.0	76.0
M109	3905.6	67.7	71.3	25.0	32.9	81.0
M110	4025.8	67.3	67.5	25.7	32.8	81.0
ND16922	3998.9	64.9	74.1	18.4	32.9	79.0
2ND18365	3901.1	65.5	77.3	29.0	32.0	78.0
6B98-9105	3877.8	63.6	77.6	29.0	32.7	77.0
6B98-9170	4059.9	64.8	74.1	22.5	32.8	79.0
6B98-9339	3898.5	65.0	75.4	15.9	34.9	80.0
BT389	3937.0	65.3	77.1	16.5	38.2	84.0
BT478	3317.2	64.4	83.7	24.9	35.8	79.0
BT483	3593.5	63.6	80.5	24.2	35.0	82.0
M111	4031.2	66.4	70.4	25.9	33.3	82.0
M112	4377.5	66.6	72.0	20.7	33.0	81.0
M113	4221.4	67.1	72.9	21.7	33.1	79.0
ND17643	4093.1	67.2	76.1	12.5	34.6	82.0
ND17655	3868.9	66.9	79.7	11.5	35.8	81.0
ND17687	3746.9	66.3	74.3	15.9	35.0	78.0
ND17711	3778.3	65.0	77.2	21.7	33.4	78.0
HIGH MEAN	4377.5	67.7	88.6	38.2	38.2	84.0
LOW MEAN	3004.1	63.6	67.5	11.5	32.0	76.0
EXP MEAN	3771.0	65.7	76.4	23.5	33.7	79.5
C. V. %	8.8		4.1	30.5	2.3	
LSD 5%	374.1		3.9	NS	1.0	
LSD 1%	491.7		5.2	NS	1.3	
# of Loc	6	1	5	2	5	1

¹Morris, Fargo, Carrington, Osnabrock, Bottineau, Hamiota

²Hamiota

³Morris, Fargo, Carrington, Osnabrock, Hamiota

⁴Morris, Carrington

⁵Morris, Fargo, Carrington, Osnabrock, Hamiota

⁶Hamiota

TABLE 3. 1973-2002 SEASONAL MEASUREMENTS - MISSISSIPPI VALLEY BARLEY NURSERY.

YIELD		TEST WEIGHT		DATE SOWN		DATE HEADED		PLANT HEIGHT		LODGING	
KG/HA	YEAR	KG/HL	YEAR	DATE	YEAR	DATE	YEAR	CM.	YEAR	%	YEAR
5385	1992	66.5	1998	4-12	1976	6-13	1985	67.0	1988	2.7	1987
4911	1985	66.1	1999	15	1988	13	1977	73.2	1987	7.5	1988
4799	1986	65.5	1979	16	1981	14	1976	74.6	1979	13.2	2000
4502	1994	65.4	2001	19	1985	15	1988	76.3	1974	14.2	1992
4402	2001	64.0	2002	19	1987	16	1980	76.4	1995	15.6	1983
4337	1993	63.1	1997	20	1992	16	1987	76.6	1978	16.2	1980
4274	1990	63.0	1977	21	1980	20	1998	76.7	1991	17.1	1984
4255	1995	62.7	1984	23	1989	21	1982	77.4	1997	17.8	1981
4251	1984	62.4	1985	23	1973	21	1994	77.5	1977	18.4	1975
4105	2000	62.0	1976	23	1977	22	1973	77.8	2002	19.0	1994
4056	1989	61.7	1996	24	1998	22	1991	78.5	1976	21.1	1989
4046	1997	61.6	1995	25	1990	23	1992	79.0	1994	21.3	1979
4021	1999	61.2	1986	25	1991	23	1978	79.5	1996	21.8	1976
4017	1998	61.0	1988	26	2000	24	1989	80.7	1989	21.8	1978
3986	1981	60.6	1980	26	1982	24	1990	81.9	1999	23.9	1986
3884	1982	60.2	1989	27	1994	24	1981	81.6	2001	24.2	1985
3882	1987	60.1	1981	29	1993	25	2000	83.9	1980	25.4	2001
3832	2002	59.9	1994	30	1978	25	1975	84.1	1973	26.6	1973
3806	1980	59.7	1974	30	1983	25	1984	85.3	1975	27.1	1977
3728	1977	59.7	1978	30	1986	26	1986	86.8	1990	27.2	1974
3566	1996	59.4	1983	30	2002	27	1974	87.7	1984	27.7	1995
3519	1973	59.2	1992	5-1	1984	28	1999	88.6	1993	28.1	1997
3492	1979	59.2	1973	2	1974	29	1993	89.1	1986	29.0	2002
3432	1976	59.2	1982	2	1975	30	1979	89.3	1998	29.2	1990
3370	1978	59.2	1987	4	2001	7-1	1983	89.4	1992	29.3	1991
3136	1988	58.9	1975	4	1995	7-2	1997	90.5	1981	31.0	1999
3113	1983	57.5	1993	7	1996	7-2	2001	90.6	2000	38.6	1998
3094	1975	57.5	1990	5-7	1999	7-3	2002	91.5	1982	42.6	1993
3064	1991	54.3	2000	7	1979	7-4	1995	92.3	1983	48.2	1982
2792	1974	54.3	1991	11	1997	7-4	1996	93.0	1985	0.0	1996
3902 AVE.		60.8 AVE.		4-26 AVE.		6-24 AVE.		82.6 AVE.		22.9 AVE.	

CONVERSION FACTORS: KG/HA TO BU/A x .018587

KG/HL TO LB/BU x .776815

TABLE 4. AVE. STA. YIELD (KG/HA). 2002 MISSISSIPPI VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	AVERAGE RANK 10 STA.	MORRIS MINN	FARGO ND	CARRNGTN ND	OSNABRCK ND	BOTTNEAU ND	SIDNEY MT	HAMIOTA MANITOBA
1	BARBLESS	29 3185.1	2169.0	1964.5	3912.8	2992.5	3638.3	4241.1	3347.7
2	LARKER	27 3453.2	2174.4	2572.7	3875.1	3363.8	4004.3	5775.0	2674.9
3	MOREX	28 3398.3	1905.3	2465.0	3595.3	3487.6	3584.5	4897.7	3164.7
4	ROBUST	22 3666.3	2540.4	2787.9	4052.7	4020.5	4241.1	5145.3	3762.1
5	STANDER (M64)	16 3868.7	3336.9	2561.9	4047.4	4876.2	4327.2	5188.4	4203.4
6	LEGACY (6B93-2978)	17 3863.8	2669.5	2357.4	3751.3	4682.5	4542.5	5715.8	4117.3
7	MNBRITE (MNS85)	26 3601.2	2793.3	2427.3	3692.1	3708.3	4230.4	5199.1	4009.7
8	DRUMMOND (ND15477)	23 3638.3	2470.4	2298.2	4192.7	4504.8	4246.5	5339.1	3902.0
9	LACEY (M98)	10 3918.7	2782.6	2696.4	4122.7	4790.1	4607.1	5457.5	3912.8
10	ND16301	19 3780.9	2610.3	2712.6	4138.9	4714.7	4074.3	5360.6	4321.9
11	6B95-2482	2 4114.6	3821.3	2346.6	4784.7	4736.3	4881.6	6146.4	4338.0
12	6B95-2089	20 3772.9	2631.9	2169.0	4284.2	4440.3	4338.0	5505.9	3853.6
13	M109	8 4033.4	3519.9	2895.6	4058.1	4655.5	4251.9	5850.4	4052.7
14	M110	7 4044.1	3272.3	2750.3	4171.2	4445.6	4682.5	5371.4	4833.2
15	ND16922	12 3894.5	3493.0	3003.2	4101.2	4704.0	4305.7	4913.9	4386.4
16	2ND18365	9 3976.3	3003.2	2809.5	4149.6	4558.7	4930.0	5387.5	3955.9
17	6B98-9105	11 3905.3	3207.8	2879.4	4660.9	4526.4	4542.5	5721.2	3449.9
18	6B98-9170	6 4055.4	3439.2	2572.7	4111.9	4677.1	4747.0	5392.9	4811.6
19	6B98-9339	14 3875.7	2195.9	2895.6	4483.3	4784.7	5032.3	5559.7	3998.9
20	BT389	15 3875.1	2142.1	2771.8	4192.7	5349.8	4655.5	5694.3	4510.2
21	BT478	25 3605.5	2497.3	2352.0	3342.3	3665.2	4133.5	5209.9	3912.8
22	BT483	24 3637.8	2599.6	2352.0	4068.9	4219.6	4564.0	5570.5	3756.7
23	M111	4 4087.2	3369.2	3030.1	4327.2	4897.7	4477.9	5409.0	4085.0
24	M112	1 4261.6	3014.0	3283.1	5150.7	5166.8	4946.2	5678.1	4704.0
25	M113	3 4112.5	4009.7	2809.5	4251.9	5145.3	4375.7	5392.9	4736.3
26	ND17643	5 4076.4	2475.8	2712.6	4682.5	5118.4	5161.5	5705.1	4408.0
27	ND17655	13 3880.0	2674.9	2524.2	4752.4	4477.9	4806.2	5812.7	3977.4
28	ND17687	21 3733.0	2384.3	2454.3	4601.7	4784.7	4294.9	5355.2	3961.2
29	ND17711	18 3804.6	2879.4	2949.4	4531.8	4316.5	3891.3	5344.5	4101.2
AVERAGE		3831.7	2830.4	2634.6	4209.9	4476.3	4431.5	5425.6	4043.1

TABLE 4. AVE. STA. YIELD (KG/HA). 2002 MISSISSIPPI VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	AVERAGE RANK 10 STA.	KERNEN SASK	MADISON WISC	CARO MICHIGAN
1	BARBLESS	29 3185.1	1873.0	4063.5	3649.1
2	LARKER	27 3453.2	1577.0	4106.6	4408.0
3	MOREX	28 3398.3	2470.4	3864.4	4547.9
4	ROBUST	22 3666.3	1964.5	4521.0	3627.6
5	STANDER (M64)	16 3868.7	2104.4	4467.2	3573.7
6	LEGACY (6B93-2978)	17 3863.8	2061.4	4617.9	4122.7
7	MNBRITE (MNS85)	26 3601.2	1959.1	4639.4	3353.1
8	DRUMMOND (ND15477)	23 3638.3	1706.1	4359.5	3363.8
9	LACEY (M98)	10 3918.7	1873.0	4677.1	4268.0
10	ND16301	19 3780.9	1980.6	4278.8	3616.8
11	6B95-2482	2 4114.6	1663.1	4381.1	4047.4
12	6B95-2089	20 3772.9	1873.0	4510.2	4122.7
13	M109	8 4033.4	2066.7	4908.5	4074.3
14	M110	7 4044.1	1749.2	5037.7	4128.1
15	ND16922	12 3894.5	1948.3	4537.1	3552.2
16	2ND18365	9 3976.3	1840.7	4451.0	4677.1
17	6B98-9105	11 3905.3	1980.6	4171.2	3912.8
18	6B98-9170	6 4055.4	2061.4	4779.3	3961.2
19	6B98-9339	14 3875.7	1668.5	4364.9	3772.9
20	BT389	15 3875.1	2346.6	3444.6	3643.7
21	BT478	25 3605.5	2276.6	5032.3	3632.9
22	BT483	24 3637.8	2147.5	3412.3	3686.8
23	M111	4 4087.2	1819.2	4795.5	4660.9
24	M112	1 4261.6	1829.9	4806.2	4036.6
25	M113	3 4112.5	1948.3	4440.3	4015.1
26	ND17643	5 4076.4	2093.6	4601.7	3805.2
27	ND17655	13 3880.0	1846.1	4268.0	3659.8
28	ND17687	21 3733.0	1695.4	4015.1	3783.6
29	ND17711	18 3804.6	1630.8	4682.5	3719.1
AVERAGE		3831.7	1932.9	4421.9	3911.1

TABLE 5. INFORMATION ON PLOT TYPE.

LOCATION	# REPS	DATE SOWN	LSD 5%		METERS HARVESTED	CM. BET. ROWS	DATE HARVESTED
			KG/HA	BU/A			
HAMMOTA	3	5/21	355.1	6.6	5.2	23.5	9/6
CARO	2	4/11	720.9	13.4			7/15
BOTTINEAU	3	5/11	289.4	5.38	3.35	20	8/18
CARRINGTON	3	4/30	387.4	7.2	3	30.5	8/7
FARGO	3	5/2	199.1	3.7	3	30.5	8/9
SIDNEY	3	4/25	364.2	6.77	3.35	20	8/11
OSNABROCK	3	4/23	516.5	9.6	3	30.5	8/20
CROOKSTON	3		NO DATA				
MADISON	3	4/18	476.7	8.9	4.9	30.5	7/20
MORRIS	3		1129.8	21.0	1.4	18	
KERNEN	3	5/10	313.5	5.18	4.5 M ²	20	9/9

TABLE 6 . PERIOD OF YEARS SUMMARY - YIELD (AVERAGE KILOGRAMS PER HECTARE).

ENT NO.	VARIETY/ SELECTION	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	YR	YRS	STA MEAN	ADJ. RANK
1	BARBLESS	3818	3823	3596	3072	3455	3328	3217	3341	3787	3185	10	87	3466.5	29
2	LARKER	3654	3829	3710	3073	3638	3561	3375	3617	3998	3453	10	87	3598.1	28
3	MOREX	3702	4070	3747	3319	3778	3400	3881	3562	3884	3398	10	87	3670.2	27
BASE AVERAGES		3725	3907	3684	3155	3624	3429	3491	3507	3890	3346				
4	ROBUST	4328	4573	4161	3437	3940	3793	3846	4092	4269	3666	10	87	4012.1	22
5	STANDER (M64)	4395	4800	4465	3592	3999	4220	4008	4196	4546	3869	10	87	4207.3	11
6	LEGACY (6B93-2978)				3752	4166	3986	4129	4279	4201	3864	7	61	4149.2	16
7	MNBRITE (MNS85)					3913	3823	3658	3968	4141	3601	6	53	3885.8	25
8	DRUMMOND (ND15477)					3870	4206	4048	3966	4616	3638	6	53	4075.9	20
9	LACEY (M98)						4175	4369	4418	4584	3919	5	43	4338.9	6
10	ND16301							3924	4416	4397	3781	4	35	4157.3	14
11	6B95-2482							4011	4294	4532	4115	4	35	4273.9	9
12	6B95-2089								4257	4375	3773	3	28	4128.9	19
13	M109									4672	4033	2	19	4305.6	8
14	M110									4834	4044	2	19	4387.5	3
15	ND16922									4548	3895	2	19	4174.8	13
16	2ND18365										3976	1	10	4252.9	10
17	6B98-9105										3905	1	10	4177.0	12
18	6B98-9170										4055	1	10	4337.6	7
19	6B98-9339										3876	1	10	4145.3	17
20	BT389										3875	1	10	4144.7	18
21	BT478										3605	1	10	3856.3	26
22	BT483										3638	1	10	3890.9	24
23	M111										4087	1	10	4371.5	4
24	M112										4262	1	10	4558.0	1
25	M113										4112	1	10	4398.6	2
26	ND17643										4076	1	10	4360.0	5
27	ND17655										3880	1	10	4149.9	15
28	ND17687										3733	1	10	3992.7	23
29	ND17711										3805	1	10	4069.3	21
NO. OF STATIONS		9	8	9	8	10	8	7	9	9	10				

ADJ. MEAN = VARIETY TOTAL FOR YEARS GROWN X 3578.3 /BASE AVERAGE FOR SAME YEARS

TABLE 7. AVE. STA. TEST WEIGHT (KG/HL). 2002 MISS. VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	AVERAGE RANK	4 STA.	HAMI OTA MANI TOBA	KERNEN SASK	MADI SON WISC	CARO MICHIGAN
1	BARBLESS	13	64.3	65.5	64.0	64.4	63.5
2	LARKER	12	64.4	66.7	65.3	63.7	62.0
3	MOREX	29	62.5	64.6	63.5	61.3	60.6
4	ROBUST	4	65.0	67.3	65.7	64.6	62.6
5	STANDER (M64)	21	63.4	65.0	65.0	63.2	60.5
6	LEGACY (6B93-2978)	27	62.7	64.2	63.7	62.6	60.1
7	MNBRITE (MNS85)	22	63.2	64.8	63.5	64.8	60.0
8	DRUMMOND (ND15477)	16	63.8	66.2	65.5	63.2	60.1
9	LACEY (M98)	7	65.0	66.7	66.7	64.1	62.6
10	ND16301	25	62.9	64.5	65.1	61.9	60.0
11	6B95-2482	9	64.9	67.1	66.7	63.9	62.2
12	6B95-2089	11	64.5	65.9	66.6	64.1	61.5
13	M109	1	65.5	67.7	67.5	65.4	61.4
14	M110	10	64.7	67.3	64.9	64.8	61.9
15	ND16922	19	63.5	64.9	65.0	64.0	60.0
16	2ND18365	3	65.1	65.5	66.4	64.6	63.9
17	6B98-9105	24	62.9	63.6	63.1	63.5	61.4
18	6B98-9170	14	64.0	64.8	65.1	64.8	61.3
19	6B98-9339	20	63.5	65.0	66.3	61.8	60.8
20	BT389	26	62.8	65.3	65.1	59.6	61.3
21	BT478	23	63.1	64.4	63.9	63.2	61.1
22	BT483	28	62.6	63.6	65.0	61.8	60.0
23	M111	8	64.9	66.4	66.7	64.1	62.6
24	M112	2	65.4	66.6	67.1	65.5	62.3
25	M113	5	65.0	67.1	66.7	63.5	62.9
26	ND17643	7	65.0	67.2	65.8	64.8	62.3
27	ND17655	15	63.8	66.9	65.9	61.8	60.5
28	ND17687	17	63.7	66.3	64.5	62.2	61.7
29	ND17711	19	63.5	65.0	64.4	63.2	61.3
AVERAGE			64.0	65.7	65.3	63.5	61.5

TABLE 8 . PERIOD OF YEARS SUMMARY - TEST WEIGHT (KILOGRAMS PER HECTOLITER).

ENT NO.	VARIETY/ SELECTION	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	YR	YRS	STA MEAN	ADJ. RANK
1	BARBLESS	56.7	59.6	60.0	62.0	62.4	61.8	65.2	54.7	64.0	64.3	10	43	61.1	23
2	LARKER	57.7	60.5	61.0	61.8	62.8	66.3	66.0	55.4	64.0	64.4	10	43	62.2	14
3	MOREX	55.5	58.8	60.7	62.1	61.8	63.8	64.3	54.5	62.6	62.5	10	43	60.9	25
BASE AVERAGES		56.6	59.6	60.5	61.9	62.3	63.9	65.1	54.8	63.5	63.7				
4	ROBUST	57.7	60.7	61.9	61.8	64.2	66.5	66.8	56.6	64.5	65.0	10	43	62.8	4
5	STANDER (M64)	58.2	59.1	61.8	60.6	62.8	66.1	65.6	55.2	64.5	63.4	10	43	62.0	15
6	LEGACY (6B93-2978)				61.7	62.1	65.5	66.3	48.2	63.1	62.7	7	29	61.0	24
7	MNBRITE (MNS85)					63.9	65.2	67.0	56.4	66.2	63.2	6	25	62.7	6
8	DRUMMOND (ND15477)					62.4	66.3	66.1	55.7	65.3	63.8	6	25	62.4	12
9	LACEY (M98)						67.0	67.9	56.9	65.4	65.0	5	20	63.7	1
10	ND16301							65.5	55.2	65.1	62.9	4	14	61.6	18
11	6B95-2482							65.8	55.2	66.0	64.9	4	14	62.4	13
12	6B95-2089								56.0	65.3	64.5	3	9	62.5	11
13	M109									65.9	65.5	2	6	63.3	2
14	M110									65.5	64.7	2	6	62.7	7
15	ND16922									65.0	63.5	2	6	61.7	16
16	2ND18365										65.1	1	4	62.7	5
17	6B98-9105										62.9	1	4	60.6	27
18	6B98-9170										64.0	1	4	61.6	17
19	6B98-9339										63.5	1	4	61.1	22
20	BT389										62.8	1	4	60.5	28
21	BT478										63.1	1	4	60.8	26
22	BT483										62.6	1	4	60.3	29
23	M111										64.9	1	4	62.6	10
24	M112										65.4	1	4	63.0	3
25	M113										65.0	1	4	62.6	8
26	ND17643										65.0	1	4	62.6	9
27	ND17655										63.8	1	4	61.4	19
28	ND17687										63.7	1	4	61.3	20
29	ND17711										63.5	1	4	61.1	21
NO. OF STATIONS		5	4	5	4	5	6	5	3	2	4				

ADJ. MEAN = VARIETY TOTAL FOR YEARS GROWN X 61.4 /BASE AVERAGE FOR SAME YEARS

TABLE 9. AVE. STA. HEIGHT (CM). 2002 MISSISSIPPI VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	AVERAGE RANK	6 STA. AVERAGE	MORRIS MINN	FARGO ND	CARRNGTN ND	OSNABRCK ND	HAMIOTA MANITOBA	MADISON WISC
1	BARBLESS	29	89.8	71.0	78.6	91.8	106.4	95.0	96.0
2	LARKER	24	81.4	64.7	65.5	83.8	95.3	90.0	89.0
3	MOREX	27	84.7	70.0	65.5	86.1	94.8	100.0	92.0
4	ROBUST	25	81.9	67.3	69.0	81.5	92.8	90.0	91.0
5	STANDER (M64)	14	77.0	59.3	62.1	77.1	85.3	90.0	88.0
6	LEGACY (6B93-2978)	17	77.6	61.3	66.6	78.8	90.1	85.0	84.0
7	MNBRITE (MNS85)	26	82.5	63.3	69.1	82.5	93.0	95.0	92.0
8	DRUMMOND (ND15477)	16	77.6	65.3	60.6	81.8	87.0	85.0	86.0
9	LACEY (M98)	10	75.5	55.7	62.5	78.6	87.1	85.0	84.0
10	ND16301	5	74.3	59.0	61.0	80.5	85.1	75.0	85.0
11	6B95-2482	7	74.6	57.0	61.4	80.5	87.9	80.0	81.0
12	6B95-2089	12	76.2	61.3	60.9	77.9	87.1	85.0	85.0
13	M109	3	72.7	58.7	60.9	72.3	79.4	85.0	80.0
14	M110	1	69.4	57.3	58.9	73.6	77.9	70.0	79.0
15	ND16922	9	75.3	63.3	63.3	79.6	84.3	80.0	81.0
16	2ND18365	20	77.9	66.0	69.4	80.6	90.3	80.0	81.0
17	6B98-9105	21	79.6	66.3	63.6	83.6	91.4	83.0	90.0
18	6B98-9170	13	76.3	61.0	63.9	79.9	85.9	80.0	87.0
19	6B98-9339	11	75.7	60.7	62.1	81.8	87.4	85.0	77.0
20	BT389	18	77.8	59.7	66.6	81.9	92.5	85.0	81.0
21	BT478	28	86.1	65.0	70.4	86.1	102.1	95.0	98.0
22	BT483	23	80.9	64.3	67.4	83.9	92.0	95.0	83.0
23	M111	2	72.1	59.7	59.5	72.8	79.9	80.0	81.0
24	M112	4	74.0	60.0	62.9	79.0	83.1	75.0	84.0
25	M113	6	74.6	58.3	62.0	75.8	83.5	85.0	83.0
26	ND17643	15	77.2	61.7	62.9	84.3	91.5	80.0	83.0
27	ND17655	22	80.0	60.0	66.4	82.9	94.4	95.0	81.0
28	ND17687	8	75.2	57.3	59.6	80.5	89.0	85.0	80.0
29	ND17711	19	77.9	66.7	63.9	81.6	88.9	85.0	81.0
AVERAGE			77.8	62.1	64.4	80.7	89.2	85.4	84.9

TABLE 10 . PERIOD OF YEARS SUMMARY - HEIGHT (CENTIMETERS).

ENT NO.	VARIETY/ SELECTION	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	YR	YRS	STA MEAN	ADJ. RANK
1	BARBLESS	96.8	83.7	85.2	90.1	88.1	96.2	90.3	100.8	88.3	89.8	10	71	90.8	29
2	LARKER	90.3	82.5	81.1	82.4	80.6	91.3	83.5	93.9	84.6	81.4	10	71	85.2	25
3	MOREX	94.3	84.5	81.6	85.4	81.8	93.9	88.5	96.0	87.1	84.7	10	71	87.7	27
BASE AVERAGES		93.8	83.5	82.6	85.9	83.5	93.8	87.4	96.9	86.6	85.3				
4	ROBUST	91.6	82.5	81.0	82.1	79.8	93.8	86.4	94.3	86.0	81.9	10	71	85.9	26
5	STANDER (M64)	85.8	73.4	73.8	76.0	74.2	86.7	77.7	88.3	80.3	77.0	10	71	79.3	10
6	LEGACY (6B93-2978)				80.0	77.5	90.3	81.8	92.2	83.1	77.6	7	48	82.7	22
7	MNBRITE (MNS85)					79.7	92.4	84.5	93.1	84.3	82.5	6	42	85.0	24
8	DRUMMOND (ND15477)					75.2	89.3	81.8	92.5	82.6	77.6	6	42	82.3	20
9	LACEY (M98)						86.2	80.1	88.9	79.7	75.5	5	35	80.2	16
10	ND16301							79.1	88.8	80.1	74.3	4	29	79.7	13
11	6B95-2482							78.5	86.8	78.2	74.6	4	29	78.6	8
12	6B95-2089								90.5	80.2	76.2	3	22	80.9	18
13	M109									76.9	72.7	2	14	76.7	4
14	M110									74.7	69.4	2	14	74.0	1
15	ND16922									80.1	75.3	2	14	79.7	12
16	2ND18365										77.9	1	6	80.3	17
17	6B98-9105										79.7	1	6	82.1	19
18	6B98-9170										76.3	1	6	78.6	9
19	6B98-9339										75.7	1	6	78.0	7
20	BT389										77.8	1	6	80.2	14
21	BT478										86.1	1	6	88.7	28
22	BT483										80.9	1	6	83.4	23
23	M111										72.2	1	6	74.4	2
24	M112										74.0	1	6	76.3	3
25	M113										74.6	1	6	76.9	5
26	ND17643										77.2	1	6	79.6	11
27	ND17655										80.0	1	6	82.4	21
28	ND17687										75.2	1	6	77.5	6
29	ND17711										77.8	1	6	80.2	15
NO. OF STATIONS		7	8	8	6	7	6	7	8	8	6				

ADJ. MEAN = VARIETY TOTAL FOR YEARS GROWN X 87.9 /BASE AVERAGE FOR SAME YEARS

TABLE 11. AVE. STA. LODGING (IN %). 2002 MISSISSIPPI VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	AVERAGE RANK	3 STA. AVERAGE	MORRIS MINN	CARRNGTN ND	SIDNEY MT
1	BARBLESS	28	46.0	30.0	28.0	80.0
2	LARKER	27	40.0	30.0	40.0	50.0
3	MOREX	29	48.8	43.3	33.0	70.0
4	ROBUST	26	38.8	23.3	38.0	55.0
5	STANDER (M64)	10	26.1	23.3	15.0	40.0
6	LEGACY (6B93-2978)	11	26.7	30.0	20.0	30.0
7	MNBRITE (MNS85)	25	33.8	43.3	28.0	30.0
8	DRUMMOND (ND15477)	6	21.1	23.3	10.0	30.0
9	LACEY (M98)	9	26.0	30.0	18.0	30.0
10	ND16301	21	30.0	30.0	10.0	50.0
11	6B95-2482	21	30.0	30.0	20.0	40.0
12	6B95-2089	13	27.7	30.0	13.0	40.0
13	M109	21	30.0	30.0	20.0	40.0
14	M110	22	30.4	23.3	28.0	40.0
15	ND16922	8	25.6	16.7	20.0	40.0
16	2ND18365	15	29.3	30.0	28.0	30.0
17	6B98-9105	24	32.7	30.0	28.0	40.0
18	6B98-9170	14	28.3	30.0	15.0	40.0
19	6B98-9339	4	20.6	16.7	15.0	30.0
20	BT389	5	21.0	10.0	23.0	30.0
21	BT478	18	29.9	16.7	33.0	40.0
22	BT483	17	29.4	23.3	25.0	40.0
23	M111	23	30.6	36.7	15.0	40.0
24	M112	12	27.1	23.3	18.0	40.0
25	M113	17	29.4	23.3	20.0	45.0
26	ND17643	2	18.3	10.0	15.0	30.0
27	ND17655	1	17.7	10.0	13.0	30.0
28	ND17687	4	20.6	16.7	15.0	30.0
29	ND17711	7	24.4	23.3	20.0	30.0
AVERAGE			29.0	25.4	21.5	40.0

TABLE 12 . PERIOD OF YEARS SUMMARY - LODGING (PERCENT).

ENT NO.	VARIETY/ SELECTION	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	YR	YRS	STA MEAN	ADJ. RANK
1	BARBLESS	62.1	48.4	40.0	0.0	64.8	52.7	46.9	31.5	37.2	46.0	10	30	48.8	29
2	LARKER	63.5	51.4	45.0	0.0	58.8	54.3	43.0	24.0	46.7	40.0	10	30	48.2	28
3	MOREX	60.6	41.3	37.5	0.0	44.0	54.0	46.9	25.5	33.3	48.8	10	30	44.4	27
BASE AVERAGES		62.0	47.0	40.8	.000	55.8	53.6	45.6	27.0	39.0	44.9				
4	ROBUST	44.2	25.1	32.5	0.0	24.0	35.3	37.9	16.0	22.4	38.8	10	30	31.1	23
5	STANDER (M64)	44.5	14.0	17.5	0.0	16.0	32.0	30.7	9.0	12.5	26.1	10	30	23.9	7
6	LEGACY (6B93-2978)				0.0	32.0	39.7	31.5	14.5	18.5	26.7	7	19	29.3	15
7	MNBRITE (MNS85)					22.8	38.3	34.6	15.5	31.0	33.8	6	18	30.5	19
8	DRUMMOND (ND15477)					13.3	23.7	17.8	5.5	11.1	21.1	6	18	16.5	1
9	LACEY (M98)						34.3	29.2	11.5	21.9	26.0	5	14	28.1	13
10	ND16301							22.5	12.0	13.0	30.0	4	11	24.1	8
11	6B95-2482							21.9	7.5	21.1	30.0	4	11	24.6	9
12	6B95-2089								8.5	28.6	27.7	3	7	27.8	12
13	M109									16.0	30.0	2	5	27.0	11
14	M110									21.4	30.4	2	5	29.7	17
15	ND16922									28.4	25.6	2	5	29.6	16
16	2ND18365										29.3	1	3	30.8	20
17	6B98-9105										32.7	1	3	34.3	26
18	6B98-9170										28.3	1	3	29.7	18
19	6B98-9339										20.6	1	3	21.6	5
20	BT389										21.0	1	3	22.0	6
21	BT478										29.9	1	3	31.4	24
22	BT483										29.4	1	3	30.9	22
23	M111										30.6	1	3	32.1	25
24	M112										27.1	1	3	28.4	14
25	M113										29.4	1	3	30.9	22
26	ND17643										18.3	1	3	19.2	3
27	ND17655										17.7	1	3	18.5	2
28	ND17687										20.6	1	3	21.6	5
29	ND17711										24.4	1	3	25.6	10
NO. OF STATIONS		5	4	2	1	4	3	4	2	2	3				

ADJ. MEAN = VARIETY TOTAL FOR YEARS GROWN X 47.1 /BASE AVERAGE FOR SAME YEARS

TABLE 13. AVE. STA. HEADING (FROM MAY 31). 2002 MISS. VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	AVERAGE RANK	8 STA. STA.	MORRIS MINN	FARGO ND	CARRNGTN ND	OSNABRCK ND	HAMIOTA MANITOBA	KERNEN SASK	MADISON WISC
1	BARBLESS	21	33.1	26.0	36.0	29.5	39.3	44.7	60.0	17.3
2	LARKER	2	31.0	24.0	31.5	27.8	36.3	42.3	59.1	17.3
3	MOREX	3	31.1	24.0	31.5	27.3	36.0	41.7	60.7	17.0
4	ROBUST	16	32.2	24.7	32.3	27.8	36.8	43.0	60.1	18.7
5	STANDER (M64)	18	32.2	24.7	33.0	28.8	38.0	43.7	58.9	18.7
6	LEGACY (6B93-2978)	23	33.4	25.3	36.0	29.5	38.5	45.3	59.7	19.0
7	MNBRITE (MNS85)	19	32.5	26.0	32.8	28.5	38.5	44.0	60.0	18.3
8	DRUMMOND (ND15477)	11	31.9	24.7	32.5	27.8	37.3	43.0	59.5	18.0
9	LACEY (M98)	5	31.6	24.0	32.8	27.3	36.8	43.7	59.1	18.0
10	ND16301	10	31.8	24.0	31.8	27.0	36.5	43.3	59.7	18.3
11	6B95-2482	13	31.9	24.0	32.5	28.3	37.5	42.3	59.6	18.0
12	6B95-2089	15	32.0	24.7	32.3	27.8	37.3	43.0	59.5	18.7
13	M109	7	31.6	24.0	32.0	27.3	37.5	43.7	59.7	18.0
14	M110	9	31.8	24.0	32.0	27.0	36.8	44.3	60.4	18.0
15	ND16922	7	31.6	24.7	31.5	27.5	37.3	43.7	58.8	18.7
16	2ND18365	1	30.6	26.0	30.3	26.3	35.5	41.7	58.2	16.0
17	6B98-9105	4	31.4	25.3	31.5	27.3	36.3	43.0	58.5	17.3
18	6B98-9170	12	31.9	24.7	31.8	27.0	37.3	43.0	59.3	18.0
19	6B98-9339	24	33.6	28.0	33.5	30.5	38.5	44.0	60.7	20.3
20	BT389	29	36.0	30.3	37.8	34.5	40.5	48.0	62.7	23.0
21	BT478	27	34.1	28.3	35.3	32.0	38.3	45.3	62.9	20.0
22	BT483	26	33.7	27.0	34.8	30.5	37.8	44.7	60.1	21.0
23	M111	14	32.0	24.7	33.3	27.3	37.5	43.7	60.4	17.3
24	M112	8	31.7	24.7	32.0	27.0	37.8	43.3	59.4	17.7
25	M113	18	32.2	24.7	32.8	27.5	37.5	43.0	61.0	18.3
26	ND17643	22	33.3	27.3	33.3	30.5	37.8	44.3	59.1	20.0
27	ND17655	28	34.8	29.0	33.8	31.0	39.0	46.3	61.4	20.7
28	ND17687	25	33.7	28.7	32.5	30.0	39.3	44.7	60.3	20.0
29	ND17711	20	32.8	26.0	31.8	28.3	37.8	43.0	59.8	19.3
AVERAGE			32.5	25.6	32.9	28.6	37.6	43.8	60.0	18.7

TABLE 13. AVE. STA. HEADING (FROM MAY 31). 2002 MISS. VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	AVERAGE RANK	8 STA.	CARO MICHIGAN
1	BARBLESS	21	33.1	12.0
2	LARKER	2	31.0	10.0
3	MOREX	3	31.1	11.0
4	ROBUST	16	32.2	14.0
5	STANDER (M64)	18	32.2	12.0
6	LEGACY (6B93-2978)	23	33.4	14.0
7	MNBRITE (MNS85)	19	32.5	12.0
8	DRUMMOND (ND15477)	11	31.9	12.0
9	LACEY (M98)	5	31.6	11.0
10	ND16301	10	31.8	14.0
11	6B95-2482	13	31.9	13.0
12	6B95-2089	15	32.0	13.0
13	M109	7	31.6	11.0
14	M110	9	31.8	12.0
15	ND16922	7	31.6	11.0
16	2ND18365	1	30.6	11.0
17	6B98-9105	4	31.4	12.0
18	6B98-9170	12	31.9	14.0
19	6B98-9339	24	33.6	13.0
20	BT389	29	36.0	11.0
21	BT478	27	34.1	11.0
22	BT483	26	33.7	14.0
23	M111	14	32.0	12.0
24	M112	8	31.7	12.0
25	M113	18	32.2	13.0
26	ND17643	22	33.3	14.0
27	ND17655	28	34.8	17.0
28	ND17687	25	33.7	14.0
29	ND17711	20	32.8	16.0
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AVERAGE			32.5	12.6

TABLE 14 . PERIOD OF YEARS SUMMARY - DATE HEADED (FROM MAY 31).

ENT NO.	VARIETY/ SELECTION	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	YR	YRS	STA MEAN	ADJ. RANK
1	BARBLESS	29.6	21.6	34.8	35.8	33.8	21.3	28.9	26.1	32.2	33.1	10	67	30.1	21
2	LARKER	28.6	20.9	32.9	33.0	30.3	19.1	27.2	24.1	30.7	31.0	10	67	28.2	3
3	MOREX	28.9	19.5	32.8	32.5	30.3	18.9	26.5	23.8	30.8	31.1	10	67	28.0	2
BASE AVERAGES		29.0	20.6	33.5	33.7	31.4	19.7	27.5	24.6	31.2	31.7				
4	ROBUST	29.5	21.7	34.4	34.1	31.7	19.9	28.5	25.0	32.0	32.2	10	67	29.3	17
5	STANDER (M64)	30.1	21.8	34.7	34.2	32.6	20.1	28.7	25.9	32.3	32.2	10	67	29.7	19
6	LEGACY (6B93-2978)				33.9	33.4	21.1	29.4	26.6	33.2	33.4	7	46	30.3	23
7	MNBRITE (MNS85)					32.8	20.7	29.1	25.7	32.2	32.5	6	40	29.8	20
8	DRUMMOND (ND15477)					31.3	19.8	27.6	24.3	30.8	31.9	6	40	28.6	5
9	LACEY (M98)						19.7	27.6	24.5	31.8	31.6	5	33	28.8	8
10	ND16301							27.8	24.4	31.5	31.8	4	28	28.8	9
11	6B95-2482							27.5	24.5	31.4	31.9	4	28	28.8	7
12	6B95-2089								25.0	31.9	32.0	3	22	29.2	16
13	M109									31.6	31.6	2	16	28.8	11
14	M110									32.0	31.8	2	16	29.1	14
15	ND16922									31.8	31.6	2	16	28.9	12
16	2ND18365										30.6	1	8	27.7	1
17	6B98-9105										31.4	1	8	28.4	4
18	6B98-9170										31.9	1	8	28.8	10
19	6B98-9339										33.6	1	8	30.4	24
20	BT389										36.0	1	8	32.5	29
21	BT478										34.1	1	8	30.9	27
22	BT483										33.7	1	8	30.5	26
23	M111										32.0	1	8	29.0	13
24	M112										31.7	1	8	28.7	6
25	M113										32.2	1	8	29.2	15
26	ND17643										33.3	1	8	30.1	22
27	ND17655										34.8	1	8	31.5	28
28	ND17687										33.7	1	8	30.5	25
29	ND17711										32.8	1	8	29.6	18
NO. OF STATIONS		9	6	6	6	7	5	6	6	8	8				

ADJ. MEAN = VARIETY TOTAL FOR YEARS GROWN X 28.7 /BASE AVERAGE FOR SAME YEARS

TABLE 15. AVE. STA. RIPE (FROM MAY 31). 2002 MISSISSIPPI VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	AVERAGE RANK	1 STA.	HAMIOTA MANITOBA
1	BARBLESS	10	78.0	78.0
2	LARKER	4	76.0	76.0
3	MOREX	4	76.0	76.0
4	ROBUST	24	81.0	81.0
5	STANDER (M64)	28	82.0	82.0
6	LEGACY (6B93-2978)	10	78.0	78.0
7	MNBRITE (MNS85)	24	81.0	81.0
8	DRUMMOND (ND15477)	15	79.0	79.0
9	LACEY (M98)	4	76.0	76.0
10	ND16301	24	81.0	81.0
11	6B95-2482	17	80.0	80.0
12	6B95-2089	4	76.0	76.0
13	M109	24	81.0	81.0
14	M110	24	81.0	81.0
15	ND16922	15	79.0	79.0
16	2ND18365	10	78.0	78.0
17	6B98-9105	5	77.0	77.0
18	6B98-9170	15	79.0	79.0
19	6B98-9339	17	80.0	80.0
20	BT389	29	84.0	84.0
21	BT478	15	79.0	79.0
22	BT483	28	82.0	82.0
23	M111	28	82.0	82.0
24	M112	24	81.0	81.0
25	M113	15	79.0	79.0
26	ND17643	28	82.0	82.0
27	ND17655	24	81.0	81.0
28	ND17687	10	78.0	78.0
29	ND17711	10	78.0	78.0
AVERAGE			79.5	79.5

TABLE 16. AVE. STA. YIELD - MANITOBA, MINNESOTA, NORTH DAKOTA, SOUTH DAKOTA

ENT. NO.	VARIETY OR SELECTION	AVERAGE RANK 6 STA.	MORRIS MINN	FARGO ND	CARRNGTN ND	OSNABRCK ND	BOTTNEAU ND	HAMIOTA MANITOBA
1	BARBLESS	29 3004.1	2169.0	1964.5	3912.8	2992.5	3638.3	3347.7
2	LARKER	27 3110.9	2174.4	2572.7	3875.1	3363.8	4004.3	2674.9
3	MOREX	28 3033.7	1905.3	2465.0	3595.3	3487.6	3584.5	3164.7
4	ROBUST	24 3567.5	2540.4	2787.9	4052.7	4020.5	4241.1	3762.1
5	STANDER (M64)	13 3892.2	3336.9	2561.9	4047.4	4876.2	4327.2	4203.4
6	LEGACY (6B93-2978)	20 3686.8	2669.5	2357.4	3751.3	4682.5	4542.5	4117.3
7	MNBRITE (MNS85)	25 3476.9	2793.3	2427.3	3692.1	3708.3	4230.4	4009.7
8	DRUMMOND (ND15477)	22 3602.4	2470.4	2298.2	4192.7	4504.8	4246.5	3902.0
9	LACEY (M98)	16 3818.6	2782.6	2696.4	4122.7	4790.1	4607.1	3912.8
10	ND16301	18 3762.1	2610.3	2712.6	4138.9	4714.7	4074.3	4321.9
11	6B95-2482	3 4151.4	3821.3	2346.6	4784.7	4736.3	4881.6	4338.0
12	6B95-2089	21 3619.5	2631.9	2169.0	4284.2	4440.3	4338.0	3853.6
13	M109	10 3905.6	3519.9	2895.6	4058.1	4655.5	4251.9	4052.7
14	M110	7 4025.8	3272.3	2750.3	4171.2	4445.6	4682.5	4833.2
15	ND16922	8 3998.9	3493.0	3003.2	4101.2	4704.0	4305.7	4386.4
16	2ND18365	11 3901.1	3003.2	2809.5	4149.6	4558.7	4930.0	3955.9
17	6B98-9105	14 3877.8	3207.8	2879.4	4660.9	4526.4	4542.5	3449.9
18	6B98-9170	5 4059.9	3439.2	2572.7	4111.9	4677.1	4747.0	4811.6
19	6B98-9339	12 3898.5	2195.9	2895.6	4483.3	4784.7	5032.3	3998.9
20	BT389	9 3937.0	2142.1	2771.8	4192.7	5349.8	4655.5	4510.2
21	BT478	26 3317.2	2497.3	2352.0	3342.3	3665.2	4133.5	3912.8
22	BT483	23 3593.5	2599.6	2352.0	4068.9	4219.6	4564.0	3756.7
23	M111	6 4031.2	3369.2	3030.1	4327.2	4897.7	4477.9	4085.0
24	M112	1 4377.5	3014.0	3283.1	5150.7	5166.8	4946.2	4704.0
25	M113	2 4221.4	4009.7	2809.5	4251.9	5145.3	4375.7	4736.3
26	ND17643	4 4093.1	2475.8	2712.6	4682.5	5118.4	5161.5	4408.0
27	ND17655	15 3868.9	2674.9	2524.2	4752.4	4477.9	4806.2	3977.4
28	ND17687	19 3746.9	2384.3	2454.3	4601.7	4784.7	4294.9	3961.2
29	ND17711	17 3778.3	2879.4	2949.4	4531.8	4316.5	3891.3	4101.2
AVERAGE		3771.0	2830.4	2634.6	4209.9	4476.3	4431.5	4043.1

TABLE 17 . PERIOD OF YEARS SUMMARY - AVE. YIELD (KG/HA) - MANITOBA, MINN, ND, AND SD.

ENT NO.	VARIETY/ SELECTION	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	YR	YRS	STA MEAN	ADJ. RANK
1	BARBLESS	4111	4034	3472	3209	3505	3497	3269	3329	3885	3004	10	66	3529.3	29
2	LARKER	3989	4168	3434	3365	3559	3705	3616	3632	4137	3111	10	66	3674.5	28
3	MOREX	3949	4335	3629	3475	3646	3552	4109	3538	3818	3034	10	66	3700.8	27
BASE AVERAGES		4016	4179	3512	3349	3570	3585	3665	3500	3947	3050				
4	ROBUST	4721	4796	4021	3745	3929	3984	4134	4094	4343	3567	10	66	4127.0	24
5	STANDER (M64)	4954	5261	4316	3990	3949	4500	4395	4345	4543	3892	10	66	4401.4	18
6	LEGACY (6B93-2978)				4003	4097	4230	4412	4413	4316	3687	7	48	4295.8	20
7	MNBRITE (MNS85)					3794	4032	3949	4057	4182	3477	6	42	4006.6	25
8	DRUMMOND (ND15477)					3848	4416	4306	3972	4567	3602	6	42	4201.8	23
9	LACEY (M98)						4431	4523	4379	4592	3819	5	34	4453.0	17
10	ND16301							4227	4482	4481	3762	4	27	4364.3	19
11	6B95-2482							4348	4388	4529	4151	4	27	4464.6	14
12	6B95-2089								4321	4347	3619	3	21	4264.0	22
13	M109									4699	3906	2	13	4458.0	15
14	M110									4767	4026	2	13	4553.0	11
15	ND16922									4614	3999	2	13	4455.5	16
16	2ND18365										3901	1	6	4649.9	7
17	6B98-9105										3878	1	6	4622.1	9
18	6B98-9170										4060	1	6	4839.1	4
19	6B98-9339										3898	1	6	4646.7	8
20	BT389										3937	1	6	4692.6	6
21	BT478										3317	1	6	3953.8	26
22	BT483										3593	1	6	4283.2	21
23	M111										4031	1	6	4804.9	5
24	M112										4377	1	6	5217.6	1
25	M113										4221	1	6	5031.6	2
26	ND17643										4093	1	6	4878.7	3
27	ND17655										3869	1	6	4611.4	10
28	ND17687										3747	1	6	4466.0	13
29	ND17711										3778	1	6	4503.4	12
NO. OF STATIONS		6	6	6	6	8	7	6	8	7	6				

ADJ. MEAN = VARIETY TOTAL FOR YEARS GROWN X 3634.9 /BASE AVERAGE FOR SAME YEARS

TABLE 18. Percent plump (over 6/64) for entries grown in Bottineau, Sidney, Hamiota, and Kernen.

Entry	Bottineau	Sidney	Hamiota	Kernen
Barbless	93.9	85.0	85.6	94.0
Larker	92.0	93.1	93.5	97.0
Morex	94.6	86.5	94.5	94.0
Robust	94.9	90.4	95.3	95.0
Stander (M64)	95.8	93.0	96.2	98.0
Legacy(6B93-2978)	98.2	82.8	95.1	97.0
MNBrite (MNS85)	92.4	93.9	96.9	93.0
Drummond (ND15477)	92.8	94.9	97.0	97.0
Lacey (M98)	95.8	95.1	95.9	97.0
ND16301	97.8	94.6	95.1	98.0
6B95-2482	96.4	93.0	97.4	96.0
6B95-2089	98.5	92.4	95.0	96.0
M109	96.7	92.8	94.4	98.0
M110	98.0	90.2	96.5	95.0
ND16922	97.7	91.7	97.0	96.0
2ND18365	96.2	95.4	94.1	98.0
6B98-9105	98.4	96.3	95.5	99.0
6B98-9170	97.8	91.2	97.5	97.0
6B98-9339	96.2	94.0	95.0	98.0
BT389	96.3	90.2	95.6	97.0
BT478	89.5	88.6	96.1	93.0
BT483	97.7	92.3	95.2	97.0
M111	96.7	94.0	96.3	95.0
M112	98.4	96.9	97.6	97.0
M113	96.5	92.5	97.0	98.0
ND17643	97.6	95.8	95.3	97.0
ND17655	98.2	96.4	96.1	97.0
ND17687	94.7	95.1	96.9	98.0
ND17711	96.5	92.7	95.6	98.0

TABLE 19. Foliar disease reactions to isolates of *Pyrenophora teres* net- and spot-forms, *Rhynchosporium secalis*, *Septoria passerinii*, and *Cochliobolus sativus* (see footnotes). Data from Winnipeg (A. Tekauz).

Entry	102a	858a	857b	1493c	692d	1903e
BARBLESS	10f	8	5	Sg	Sh	3i
LARKER	10	9	7	S	S	5
MOREX	10	8	5	S	S	4
ROBUST	9	7	5	S	S	4
STANDER	9	7	5	S	S	3
LEGACY	9	7	3	S	S	3
MNBRITE	9	8	3	S	S	3
DRUMMOND	8	7	3	S	S	2
LACEY	9	8	3	S	S	3
ND16301	9	7	5	S	S	3
6B95-2482	9	8	5	S	S	3
6B95-2089	8	8	5	S	S	2
M109	9	8	5	S	S	3
M110	9	8	5	S	S	4
ND16922	9	8	5	S	S	3
2ND18365	3\9	9	7	S	S	4
6B98-9105	9	6	7	S	S	3
6B98-9170	9	6	7	S	S	3
6B98-9339	9	6	7	S	S	5
BT389	8	4	7	S	S	7
BT478	9	7	7	S	S	2
BT483	9	8	5	S	S	2
M111	9	7	5	S	S	2
M112	9	7	5	S	S	4
M113	9	8	5	S	S	4
ND17643	8	3	3	S	S	5
ND17655	8	3	3	S	S	5
ND17687	8	5	5	S	S	4
ND17711	9	9	3	S	S	2

a *Pyrenophora teres* net-form isolates

b *Pyrenophora teres* spot-form isolate

c *Rhynchosporium secalis* isolate

d *Septoria passerinii* isolate

e *Cochliobolus sativus* isolate

f Reaction categories: 10=VS, 9=S, 7=MS, 5=MR-MS, 3=MR, 1=R

g Reaction categories: R, MR, MS, S

h Reaction categories: R, (MR), (MS), S; () rarely-used categories

i Reaction categories: 0-9 scale: 0=no visible lesions; 4= small; 9= very large, coalescing

x\y = segregating; x(y)= one plant segregating or seed mix; "-" = no reading (poor or no growth); B= blotchy symptoms; ? = equivocal, based on one plant only or plants small

TABLE 20. FHB and DON reactions. Data from Brandon, Manitoba (see below for further explanation).

Entry	FHB Rating	DON (ppm)
Barbless	2.7	7.9
Larker	2.8	4.3
Morex	3.0	5.5
Robust	3.2	12.6
Stander	3.2	22.3
Legacy	3.3	12.9
MNBrite	1.8	8.9
Drummond	3.5	14.3
Lacey	3.7	11.6
ND16301	3.0	9.4
6B95-2482	3.8	15.3
6B95-2089	3.7	11.4
M109	4.0	15.2
M110	3.5	13.5
ND16922	3.0	11.4
2ND18365	3.2	6.1
6B98-9105	3.7	7.7
6B98-9170	3.3	7.9
6B98-9339	3.0	9.4
BT389	3.7	15.6
BT478	3.2	11.7
BT483	2.7	11.5
M111	3.7	12.1
M112	3.0	9.6
M113	3.8	18.9
ND17643	2.7	9.5
ND17655	2.0	10.6
ND17687	3.7	7.9
ND17711	3.3	7.1

Rating Description: Ratings represent a mean of three replications with DON testing conducted on a composite sample.

The rating scale used was a 0 - 5 scale, with 0=resistant and 5=susceptible.

The FHB nursery was planted May 31 and sprayed with a general Tilt application on June 28 and on July 9.

FHB infected corn was applied July 10 and then every week thereafter for a total of 4 applications.

Checks (n=5)	FHB Rating			DON (ppm)		
	Mean	SE	n	Mean	SE	n
AC Metcalfe	2.5	0.26	6	9.1	1.29	6
CI4196	2.3	0.57	6	10.3	1.88	6
Stander	3.4	0.15	6	15.5	1.72	6
CDC Sisler	2.8	0.34	5	7.2	1.37	5
Chevron	2.3	0.34	5	4.1	0.92	5
Robust	3.4	0.48	5	9.4	1.88	5

TABLE 21. Foliar disease ratings from the Brandon nursery.

Entry	Net 1	Spot 1	Spot 2
Barbless	5.0	3.5	4.5
Larker	6.5	2.5	4.0
Morex	8.0	2.0	2.5
Robust	5.0	2.5	2.5
Stander	4.5	3.0	3.5
Legacy	5.0	1.5	2.5
MNBrite	4.0	2.0	2.5
Drummond	4.5	1.5	2.5
Lacey	5.5	2.0	2.0
ND16301	5.5	2.5	3.0
6B95-2482	5.0	2.5	3.0
6B95-2089	4.5	2.0	3.0
M109	5.0	2.0	2.5
M110	4.5	2.5	3.5
ND16922	5.5	3.0	4.0
2ND18365	4.0	3.0	5.0
6B98-9105	4.5	2.5	4.0
6B98-9170	4.5	2.5	3.0
6B98-9339	4.0	5.5	7.0
BT389	3.0	6.0	7.0
BT478	6.5	2.5	2.5
BT483	2.0	1.0	2.0
M111	5.0	2.0	2.5
M112	4.5	1.5	1.5
M113	5.5	2.0	3.0
ND17643	4.0	3.0	4.5
ND17655	2.5	4.0	4.5
ND17687	4.0	5.0	6.0
ND17711	6.5	3.0	3.0

Rating Description: ratings represent a mean of two replications.

Net = Net-form net blotch (*P. teres*) rated the week of July 29.

Spot 1 = first spot blotch rating (*C. sativus*) rated the week of July 29; Spot 2 = second spot blotch rating rated the week of Aug. 5.

The rating scale used was a 1 - 9 scale, with 1=resistant and 9=susceptible.

TABLE 22. QCCJ stem rust reactions from the Brandon nursery.

Entry	Rating
Barbless	65.8
Larker	68.8
Morex	68.7
Robust	70.8
Stander	63.8
Legacy	65.8
MNBrite	68.8
Drummond	60.7
Lacey	60.8
ND16301	63.7
6B95-2482	63.8
6B95-2089	70.7
M109	70.8
M110	63.8
ND16922	65.8
2ND18365	53.6
6B98-9105	73.8
6B98-9170	73.8
6B98-9339	50.6
BT389	53.7
BT478	78.8
BT483	63.8
M111	63.8
M112	40.7
M113	68.7
ND17643	58.8
ND17655	60.8
ND17687	60.8
ND17711	68.7

Rating Description (x.y) : ratings represent a mean of two replications, rated Aug. 9.

x = 1-100% severity

y = infection type where:

.1 = R, .2 = RMR, .3 = MR, .4 = MRMS, .5 = MRMS-S, .6 = MS, .7 = MS-S and .8 = S.

TABLE 23. Parentage and origin of entries in the 2002 Mississippi Valley Uniform Regional Barley Nursery.

Entry#	CI # or Contributor	Name	Parentage
1.	5105	Barbless	Oderbrucker/Lion
2.	10648	Larker	Titan/Kindred/3/Newal/Peatland//Montcalm
3.	15773	Morex	Cree/Bonanza
4.	476976	Robust	Morex/Manker
5.	Minnesota	Stander (M64)	Robust 2*/3/Cree/Bonanza//Manker/4/Robust/Bumper
6.	Busch Ag. Res.	Legacy(6B93-2978)	Bumper/Karl//Bumper/Manker/3/Bumper/Karl/4/Excel
7.	PI 603050	MNBrite (MNS85)	M90-89/M69
8.	PI 615584	Drummond (ND15477)	ND9712//Stander/ND12200
9.	Minnesota	Lacey (M98)	M78/M79
10.	North Dakota	ND16301	Foster//ND12200/6B88-3213
11.	Busch Ag.	6B95-2482	6B89-2126/ND10981
12.	Busch Ag.	6B95-2089	6B84-2912/B1601//6B88-3213
13.	Minnesota	M109	Lacey/M95
14.	Minnesota	M110	M93-117/M95
15.	North Dakota	ND16922	ND14161/ND14296
16.	Minnesota	M111	M93-9/M92-392
17.	Minnesota	M112	M93-121/M81
18.	Minnesota	M113	M93-109/Lacey
19.	North Dakota	ND17643	ND15245/ND15377
20.	North Dakota	ND17655	ND15245/ND15377
21.	North Dakota	ND17687	ND15246/ND15377
22.	North Dakota	ND17711	ND15246/ND15377
23.	North Dakota	2ND18365	2B91-4947/ND15403
24.	Busch Ag. Res.	6B98-9105	6B93-3192/M82
25.	Busch Ag. Res.	6B98-9170	6B92-7098//6B92-7098/M75
26.	Busch Ag. Res.	6B98-9339	B1614//B1614/M75
27.	Manitoba	BT389	Brandon Male Sterile Composite Cross 080/Duel//Excel
28.	Saskatchewan	BT478	M89-284/SM93067
29.	Saskatchewan	BT483	M81/SM94004

*Entries 16-29 are new for 2002. Entries 16-29 appear in slightly different order in the data tables.

TABLE 24. Agronomic data for varieties and selections grown in the 2002 Mississippi Valley Barley Nursery under irrigation at Aberdeen, ID.

Ent.			Heading					Plump		
No.	Entry	Parentage	from Jan 1	Height	Lodging	bu/A	Rank	T.Wt.	6/64	5.5/64 Pan
1	Barbless	Oderbrucker/Lion	179	34		48.1	30	49.0	82	13 6
2	Larker	Titan/Kindred/3/Newal/Peatland//Montcalm	173	31		77.4	28	51.8	93	6 2
3	Morex	Cree/Bonanza	171	32		87.6	20	51.9	91	7 3
4	Robust	Morex/Manker	172	33		82.9	23	53.8	95	5 1
5	Stander	Robust 2*/3/Cree/Bonanza//Manker/4/Robust/Bumper	174	31		86.5	21	54.4	96	3 2
6	Legacy	Bumper/Karl//Bumper/Manker/3/Bumper/Karl/4/Excel	174	30		94.7	17	52.9	94	5 2
7	MNBrite	M90-89/M69	173	31		79.4	26	52.2	89	9 2
8	Drummond	ND9712//Stander/ND12200	171	30		96.0	14	52.4	94	5 2
9	Lacey	M78/M79	171	27		81.5	24	52.2	95	4 2
10	ND16301	Foster//ND12200/6B88-3213	171	30		100.3	8	50.8	98	2 1
11	6B95-2482	6B89-2126/ND10981	170	30		106.4	3	53.3	96	3 1
12	6B95-2089	6B84-2912/B1601//6B88-3213	171	30		99.4	10	53.0	95	5 1
13	M109	Lacey/M95	171	29		102.9	5	54.3	94	5 2
14	M110	M93-117/M95	172	29		95.0	16	53.4	97	3 1
15	ND16922	ND14161/ND14296	171	28		99.6	9	54.0	98	2 1
16	M111	M93-9/M92-392	170	28		107.8	2	53.8	96	4 1
17	M112	M93-121/M81	172	28		99.3	11	53.1	97	3 1
18	M113	M93-109/Lacey	172	30		95.9	15	53.8	96	4 1
19	ND17643	ND15245/ND15377	172	29		77.0	29	52.3	94	6 1
20	ND17655	ND15245/ND15377	173	32		79.7	25	52.8	95	4 1
21	ND17687	ND15246/ND15377	171	31		87.8	19	53.4	96	4 1
22	ND17711	ND15246/ND15377	170	31		78.2	27	52.8	95	4 1
23	2ND18365	2B91-4947/ND15403	168	30		101.2	7	54.5	97	3 1
24	6B98-9105	6B93-3192/M82	169	30		98.7	12	53.0	95	4 1
25	6B98-9170	6B92-7098//6B92-7098/M75	170	31		111.4	1	54.9	96	3 1
26	6B98-9339	B1614//B1614/M75	174	30		92.4	18	53.0	87	11 3
27	BT389	Brandon Male Sterile Composite Cross 080/Duel//Excel	176	31		103.0	4	55.2	93	7 1
28	BT478	M89-284/SM93067	174	33		96.6	13	53.9	91	8 2
29	BT483	M81/SM94004	175	31		85.4	22	52.1	79	15 6
30	Colter		170	30		102.4	6	52.5	83	12 6