

**MISSISSIPPI VALLEY UNIFORM REGIONAL
BARLEY NURSERY**

2004

FOR OFFICIAL USE ONLY

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

MISSISSIPPI VALLEY UNIFORM REGIONAL BARLEY NURSERY 2004

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

Michael C. Edwards
USDA-ARS Cereal Crops Research Unit
Northern Crop Science Laboratory
1307 18TH Street North
Fargo, ND 58105-5677

edwardsm@fargo.ars.usda.gov
voice: 701-239-1341
fax: 701-239-1369

CONTENTS

Stations and Cooperators.....	1
Summary.....	2
Nursery Conditions.....	3
Table 1. Average over all stations for the indicated variables.....	6
Table 2. Average for the indicated variables at stations in Manitoba, Minnesota, North Dakota and South Dakota.....	7
Table 3. Seasonal measurements 1973-2002.....	8
Table 4. Average station yield (all stations).....	9
Table 5. Information on plot type.....	11
Table 6. Period of years summary for yield.....	12
Table 7. Test weight.....	13
Table 8. Period of years summary for test weight.....	14
Table 9. Plant height.....	15
Table 10. Period of years summary for plant height.....	17
Table 11. Average station lodging.....	18
Table 12. Period of years summary for lodging.....	19
Table 13. Date headed.....	20
Table 14. Period of years summary for date headed.....	22
Table 15. Date ripe.....	23
Table 16. Average station yield for Manitoba, Minnesota, North Dakota, & South Dakota.....	24
Table 17. Period of years summary for yield (Manitoba, Minnesota, North Dakota, South Dakota).....	25
Table 18. Disease data from Cereal Research Centre.....	26
Table 19. Parentage and origin of entries in the 2003 nursery.....	27
Table 20. Nursery grown under irrigation at Aberdeen, ID.....	28

List of Stations and Cooperators

2004 Mississippi Valley Uniform Regional Barley Nursery

<u>Stations</u>	<u>Cooperators</u>
Aberdeen, Idaho	D. Burrup, USDA, Agricultural Research Service
Hamiota, Manitoba	M. C. Therrien, Agriculture Canada
Winnipeg, Manitoba	J. Gilbert, T. Fetch, 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, C. Allen, Busch Agricultural Resources
Sidney, Montana	D.B. Cooper, S. Askelson, C. Allen, 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, North Dakota State University
Saskatoon, Saskatchewan	B. L. Harvey, Eric Lefol, Bryan Rossnagel, Tom Zatorski University of Saskatchewan
Madison, Wisconsin	H. Kaeppler, R. D. Duerst, John Mochon, University of Wisconsin

2004 Mississippi Valley Barley Nursery

Summary

Ten locations contributed useable data for this year's report. 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 3 days earlier than the 30-year average, while average heading date was about six days later than the average. The average planting date of April 23rd was six days earlier than last year. Heading date (June 30th) was two days later than last year.

Average yield (6032 kg/ha or 112 bu/a) was well above both the 30-year average and the 4710 kg/ha of last year, although it should be noted that the Sidney site was irrigated. Entries with the best yields were BT495, M115, M119, M118, and M112.

Only two stations reported test weight; the average of 53 kg/hl was the lowest in the last 30 years. The greatest test weights were recorded for 2ND19119, Conlon, 6B99-6639, Newdale, and 2ND19854.

Lodging data were reported from six locations, including Crookston, Fargo, Carrington, Osnabrock, Sidney, and Hamiota. The five entries with the least lodging were ND16301, M116, M119, 6B98-9022, and Drummond. Please note that 0% lodging was entered for all entries in 1996 due to a lack of data. Thus, the 10-year averages will still be somewhat skewed by the 1996 data. Average plant height was 93 cm, which is much taller than that of last year and the tallest since 1985. Shortest entries were M119, M116, M118, M115, and 2ND19854.

Disease data are reported from the Cereal Research Centre in Winnipeg and appear in Table 18.

NURSERY CONDITIONS

MANITOBA:

HAMIOTA:	Previous crop:	Faba beans
	Soil type:	black chernozem Pipestone heavy loam.
	Fertilizer	
	available:	100 lbs/a N; 50 lbs/a P; 300 lbs/a K.
	added:	30 N - 40 P - 0 K lbs/ac.
	Remarks:	Late planting, protracted cool and wet season. Severe late lodging. Light frost damage. Grain not suitable for malting. Late onset of head disease. 2,4-D/MCPA; Refine Extra; Lontrel at recommended rates. Also 3 applications of Tilt at recommended rates.

MICHIGAN:

CARO:	Previous crop:	.
	Soil type:	capac loam.
	Fertilizer	
	available:	.
	added:	.
	Remarks:	.

MINNESOTA:

CROOKSTON:	Previous crop:	wheat
	Soil type:	Wheatville, silt-loam.
	Fertilizer	
	available:	53 lbs/a N; 26 lbs/a P; 292 lbs/a K.
	added:	200 lbs 20-20-20.
	Remarks:	The nursery was fairly attractive throughout the very cool and long season. Lodging notes were taken.

MORRIS:	Previous crop:	soybeans.
	Soil type:	Hamerly clay loam – Flom loam soil complex.
	Fertilizer	
	available:	lbs/a N; lbs/a P; lbs/a K.
	added:	broadcasted 30 lbs. N/A, urea.
	Remarks:	The nursery was attractive and growing conditions were very favorable. Lodging was not a factor; nor were diseases.

NORTH DAKOTA:

CARRINGTON:	Previous crop:	alfalfa.
	Soil type:	Heimdahl loam, medium
	Fertilizer	
	available:	lbs/a N; lbs/a P; lbs/a K
	added:	80 lbs/a N

Remarks: Planting and harvesting operations were slightly earlier than previous years, but very normal when compared to the typical average planting date. FHB and foliar disease pressure was low to moderate. Yields were slightly better than 2003 due to cooler temperatures during kernel development and optimum cereal growing conditions.

FARGO: Previous crop: soybeans
Soil type: Fargo, silty clay loam
Fertilizer available: 13 lbs/a N; 12 lbs/a P; 437 lbs/a K
added: 65 lbs/a N; 25 lbs/a P.
Remarks: Planting and harvesting operations were slightly earlier than 2003, and slightly earlier than average. Levels of Fusarium head blight and foliar diseases were lower this year as compared to past years. Yields from this site proved to be higher than usually expected, but slightly better than 2003 due to adequate and timely precipitation and a cool growing season optimum for small grains.

OSNABROCK: Previous crop: canola.
Soil type: .
Fertilizer available: 21 lbs/a N; 20 lbs/a P; 220 lbs/a K.
added: 80 lbs/a N; 15 lbs/a P; 10 lbs/a K.
Remarks: Planting at this location was late compared to the state average because of wet and cold conditions. Harvest was also later than average, but normal for this area in 2004. Levels of FHB and foliar diseases were moderate. This area of the state experienced adverse conditions in 2004 with cool, wet conditions and an early frost in August.

BOTTINEAU: Previous crop: canola.
Soil type: .
Fertilizer available: .
added: .
Remarks: Nursery was sown into and excellent seedbed with good moisture. Early stands looked good despite the colder than normal temps. Bottineau experienced an unusually wet early part of June. The nursery was actually underwater for a short period of time with one storm and canola stubble flooded into plot was removed by hand to minimize damage.

SIDNEY (MT): Previous crop: Sugarbeets.
Soil type: .
Fertilizer

available:	.
added:	.
Remarks:	Nothing significant to note.

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 (about 19 inches of rainfall in May alone) and cool temperatures during the early growing season led to good germination, even stands, and much tillering. Storms passed through the area on 6/24, 7/4, and 7/16, but all plots were still standing at harvest. Normal rainfall was recorded in the last half of the season. Yields and test weights were good. Little or no foliar disease was present and a very small amount of smut was observed scattered throughout the nursery.

SASKATCHEWAN:

KERNEN:	Previous crop:	.
	Soil type:	.
	Fertilizer	
	available:	.
	added:	.
	Remarks:	

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

Variety/ Entry	Yield ¹ kg/ha	Test Wt ² kg/hl	Height ³ cm	Lodging ⁴ %	Heading ⁵ 5/31=0	Ripe
BARBLESS	4869.8	50.2	107.2	50.2	30.5	.0
MOREX	5329.4	48.0	102.5	44.3	28.8	.0
ROBUST	5687.3	52.2	100.8	34.8	29.6	.0
LEGACY	6199.1	50.0	95.1	30.4	30.6	.0
DRUMMOND	5901.0	54.4	96.5	13.6	29.5	.0
LACEY	6183.0	54.6	92.4	16.8	29.1	.0
CONLON	5275.0	56.8	89.0	28.0	26.9	.0
TRADITION	5923.6	53.4	92.8	18.2	30.2	.0
M109	6396.1	54.0	89.6	21.5	29.4	.0
M112	6406.9	53.3	92.0	18.5	29.6	.0
M115	6511.3	52.7	86.8	17.7	28.9	.0
M116	6332.1	51.2	84.3	12.7	29.6	.0
ND18579	6059.7	52.5	93.0	16.1	30.4	.0
2ND19119	5427.3	62.1	91.8	22.3	28.9	.0
6B99-6639	6093.1	56.3	91.9	17.7	30.0	.0
6B99-6774	6100.1	51.6	93.1	19.3	33.6	.0
NEWDALE	6136.7	55.4	87.9	32.7	33.4	.0
BT490	6256.2	50.6	90.4	26.3	29.1	.0
ND19552	5660.9	53.7	95.1	18.5	29.8	.0
ND19620	5797.6	53.8	93.6	18.0	30.6	.0
ND19728	6063.5	51.0	95.2	25.7	29.3	.0
ND19742	6278.8	52.1	89.2	14.7	31.4	.0
ND16301	6275.0	52.0	93.2	12.2	29.0	.0
2ND19854	5726.1	55.2	87.5	18.5	27.3	.0
M118	6444.6	52.3	86.0	13.8	30.7	.0
M119	6501.6	53.2	83.0	13.3	28.9	.0
6B98-9022	6108.7	52.1	93.2	13.3	30.6	.0
6B00-1323	6086.7	51.2	90.0	38.6	31.1	.0
6B00-1328	6109.8	53.7	100.0	41.6	30.4	.0
6B00-1361	6099.0	53.5	91.4	22.5	30.9	.0
BT493	6216.4	51.3	98.8	30.7	33.0	.0
BT495	6556.0	50.7	102.7	44.4	31.7	.0
HIGH MEAN	6556.0	62.1	107.2	50.2	33.6	.0
LOW MEAN	4869.8	48.0	83.0	12.2	26.9	.0
EXP MEAN	6031.6	53.0	93.0	24.0	30.1	.0
C. V. %	7.3	5.3	3.3	45.7	3.1	.0
LSD 5%	384.1	NS	2.9	12.4	.9	NS
LSD 1%	504.9	NS	3.8	16.3	1.2	NS
# of Loc	10	2	9	6	8	10

¹all

²Madison, Saskatoon

³all except Bottineau

⁴Crookston, Fargo, Carriington, Osnabrock, Sidney, Manitoba

⁵all except Bottineau and Saskatoon

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

Variety/ Entry	Yield ¹ kg/ha	Height ² cm	Lodging ³ %	Heading ⁴ 5/31=0	Ripe
BARBLESS	4522.5	132.5	50.2	35.1	.0
MOREX	4953.1	125.3	39.2	32.6	.0
ROBUST	5438.3	124.1	31.7	33.5	.0
LEGACY	5979.5	115.9	28.5	34.4	.0
DRUMMOND	5738.9	120.1	12.3	33.3	.0
LACEY	5958.8	113.1	18.2	32.9	.0
CONLON	5040.0	110.8	25.5	30.4	.0
TRADITION	5688.1	114.1	17.8	34.2	.0
M109	6140.2	110.3	21.7	33.2	.0
M112	6311.7	112.8	18.1	33.4	.0
M115	6351.7	107.2	17.2	32.5	.0
M116	6136.4	103.7	13.2	33.3	.0
ND18579	5891.9	115.3	17.3	34.4	.0
2ND19119	5056.1	113.8	24.8	32.7	.0
6B99-6639	5945.7	114.5	19.3	33.6	.0
6B99-6774	5905.0	117.0	21.1	37.4	.0
NEWDALE	5821.9	111.3	37.3	37.3	.0
BT490	6131.8	111.0	25.5	32.9	.0
ND19552	5542.1	116.7	18.1	33.7	.0
ND19620	5629.7	115.7	17.6	34.4	.0
ND19728	5828.1	117.7	26.8	33.1	.0
ND19742	6136.4	109.2	13.6	35.3	.0
ND16301	6200.2	114.8	12.6	32.8	.0
2ND19854	5469.0	108.3	20.2	30.9	.0
M118	6248.7	108.1	14.6	34.7	.0
M119	6354.8	103.8	13.9	32.7	.0
6B98-9022	6001.1	114.8	14.0	34.6	.0
6B00-1323	5921.9	112.0	42.3	34.8	.0
6B00-1328	5810.4	124.3	45.9	34.3	.0
6B00-1361	5893.4	113.2	22.9	34.7	.0
BT493	6004.9	123.3	30.9	36.6	.0
BT495	6364.8	128.4	47.3	35.6	.0
HIGH MEAN	6364.8	132.5	50.2	37.4	.0
LOW MEAN	4522.5	103.7	12.3	30.4	.0
EXP MEAN	5825.5	115.1	24.4	33.9	.0
C. V. %	8.0	3.2	44.8	2.9	.0
LSD 5%	490.4	4.2	13.5	1.1	NS
LSD 1%	644.5	5.5	17.8	1.5	NS
# of Loc	7	6	5	6	7

¹all

²all except Bottineau

³all except Bottineau and Morris

⁴all except Bottineau

TABLE 3. 1975-2004 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
6032	2004	66.5	1998	12-Apr	1976	13-Jun	1985	67	1988	2.7	1987
5385	1992	66.1	1999	15	1988	13	1977	73.2	1987	7.5	1988
4911	1985	65.5	1979	16	1981	14	1976	74.6	1979	13.2	2000
4799	1986	65.4	2003	19	1985	15	1988	76.4	1995	14.2	1992
4710	2003	65.4	2001	19	1987	16	1980	76.6	1978	15.6	1983
4502	1994	64	2002	20	1992	16	1987	76.7	1991	16.2	1980
4402	2001	63.1	1997	21	1980	20	1998	77.4	1997	17.1	1984
4337	1993	63	1977	23	1989	21	1982	77.5	1977	17.8	1981
4274	1990	62.7	1984	23	1977	21	1994	77.8	2002	18.4	1975
4255	1995	62.4	1985	23	2004	22	1991	77.9	2003	19	1994
4251	1984	62	1976	24	1998	23	1992	78.5	1976	21.1	1989
4105	2000	61.7	1996	25	1990	23	1978	79	1994	21.3	1979
4056	1989	61.6	1995	25	1991	24	1989	79.5	1996	21.8	1976
4046	1997	61.2	1986	26	2000	24	1990	80.7	1989	21.8	1978
4021	1999	61	1988	26	1982	24	1981	81.9	1999	23.9	1986
4017	1998	60.6	1980	27	1994	25	2000	81.6	2001	24.0	2004
3986	1981	60.2	1989	29	1993	25	1975	83.9	1980	24.2	1985
3884	1982	60.1	1981	29	2003	25	1984	85.3	1975	25.4	2001
3882	1987	59.9	1994	30	1978	26	1986	86.8	1990	27.1	1977
3832	2002	59.7	1978	30	1983	28	1999	87.7	1984	27.7	1995
3806	1980	59.4	1983	30	1986	28	2003	88.6	1993	28.1	1997
3728	1977	59.2	1992	30	2002	29	1993	89.1	1986	29	2002
3566	1996	59.2	1982	1-May	1984	30	1979	89.3	1998	29.2	1990
3492	1979	59.2	1987	2	1975	30	2004	89.4	1992	29.3	1991
3432	1976	58.9	1975	4	2001	1-Jul	1983	90.5	1981	31	1999
3370	1978	57.5	1993	4	1995	2-Jul	1997	90.6	2000	36.3	2003
3136	1988	57.5	1990	7	1996	2-Jul	2001	91.5	1982	38.6	1998
3113	1983	54.3	2000	7	1999	3-Jul	2002	92.3	1983	42.6	1993
3094	1975	54.3	1991	7	1979	4-Jul	1995	93	1985	48.2	1982
3064	1991	53.0	2004	11	1997	4-Jul	1996	93	2004	0	1996
4050	AVE.	60.8	AVE.	26-Apr	AVE.	24-Jun	AVE.	82.9	AVE.	23.1	AVE.

CONVERSION FACTORS: KG/HA TO BU/A x .018587
KG/HL TO LB/BU x .776815

TABLE 4. AVE. STA. YIELD (KG/HA). 2004 MISSISSIPPI VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	AVERAGE RANK	10 STA.	CROOKSTN MI NN	MORRIS MI NN	FARGO ND	CARRNGTN ND	OSNABRCK ND	BOTTNEAU ND	SIDNEY MT
1	BARBLESS	32	4869.8	5166.8	5113.0	4284.2	3385.4	2222.8	4795.5	7023.7
2	MOREX	30	5329.4	6028.0	6297.1	4709.4	4036.6	3288.5	4445.6	7125.9
3	ROBUST	27	5687.3	5758.9	6620.0	5785.8	5193.8	3697.5	4908.5	7631.9
4	LEGACY (6B93-2978)	12	6199.1	6512.4	7212.1	5204.5	5495.2	4671.7	5382.1	7976.3
5	DRUMMOND (ND15477)	24	5901.0	6297.1	6458.6	5279.9	5775.0	4973.1	5236.8	7308.9
6	LACEY (M98)	13	6183.0	6781.5	6243.3	6044.1	5570.5	4381.1	5129.2	8159.3
7	CONLON (2ND13299)	31	5275.0	6081.8	6189.5	3143.2	5102.3	3762.1	4763.2	7012.9
8	TRADITION(6B95-2482)	23	5923.6	6512.4	6620.0	5425.2	5565.1	4537.1	5366.0	7384.3
9	M109	6	6396.1	7373.5	7427.3	5893.4	5226.0	4650.2	5376.7	8433.8
10	M112	5	6406.9	7588.8	7158.2	5968.8	6523.1	4693.2	5516.7	7841.8
11	M115	2	6511.3	6727.7	7911.7	6200.2	6071.0	4714.7	5317.5	8401.5
12	M116	7	6332.1	5705.1	7857.9	5888.1	6324.0	4585.6	5764.3	8186.2
13	ND18579	22	6059.7	6566.2	6727.7	5893.4	5489.8	4176.5	5339.1	7653.4
14	2ND19119	29	5427.3	5166.8	6081.8	4887.0	3708.3	4192.7	5279.9	6792.2
15	6B99-6639	19	6093.1	6404.7	7212.1	5758.9	5000.0	4650.2	5785.8	7486.5
16	6B99-6774	17	6100.1	6942.9	7588.8	5656.6	5016.1	4273.4	5382.1	7960.2
17	NEWDALE	14	6136.7	6673.8	6081.8	5748.1	4725.5	5549.0	5317.5	7411.2
18	BT490	10	6256.2	6620.0	7535.0	5688.9	5866.5	4677.1	5382.1	8062.4
19	ND19552	28	5660.9	5920.3	6243.3	5974.2	5010.8	4128.1	4854.7	7201.3
20	ND19620	25	5797.6	6135.6	6620.0	5505.9	4704.0	4591.0	5269.1	7465.0
21	ND19728	21	6063.5	6243.3	7158.2	5769.6	4838.5	4687.8	5441.3	7755.7
22	ND19742	8	6278.8	6835.3	6942.9	6528.5	5748.1	4822.4	5866.5	7723.4
23	ND16301	9	6275.0	7104.4	8019.4	6092.6	5936.5	4343.4	5452.1	8320.8
24	2ND19854	26	5726.0	6458.6	6620.0	5059.2	5425.2	4413.3	4547.9	7389.7
25	M118	4	6444.6	7212.1	6889.1	5904.2	6264.8	4908.5	5457.5	8234.7
26	M119	3	6501.6	7373.5	7642.6	6146.4	6372.4	4714.7	5048.4	8218.5
27	6B98-9022	16	6108.7	6512.4	6996.8	5796.6	5936.5	4881.6	5161.5	7034.4
28	6B00-1323	20	6086.7	6566.2	7965.6	4843.9	5317.5	5263.7	5322.9	8100.1
29	6B00-1328	15	6109.8	6996.8	7265.9	5156.1	4537.1	4547.9	5543.6	7814.9
30	6B00-1361	18	6099.0	6243.3	7319.7	6426.3	5247.6	4359.5	5565.1	8078.6
31	BT493	11	6216.4	6243.3	8073.2	4892.4	4903.1	5522.1	6103.3	8584.5
32	BT495	1	6556.0	6727.7	7212.1	6646.9	4946.2	5452.1	5877.3	8751.3
AVERAGE			6031.6	6483.8	6978.3	5568.8	5289.5	4510.4	5312.5	7766.4

TABLE 4. AVE. STA. YIELD (KG/HA). 2004 MISSISSIPPI VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	AVERAGE RANK	10 STA.	MADISON WISC	HAMOTA MANITOBA	KERNEN SASK
1	BARBLESS	32	4869.8	3175.5	6690.0	6840.7
2	MOREX	30	5329.4	3514.5	5866.5	7981.7
3	ROBUST	27	5687.3	3363.8	6103.3	7809.5
4	LEGACY (6B93-2978)	12	6199.1	3821.3	7378.9	8336.9
5	DRUMMOND (ND15477)	24	5901.0	3595.3	6151.8	7933.3
6	LACEY (M98)	13	6183.0	3805.2	7561.9	8153.9
7	CONLON (2ND13299)	31	5275.0	3256.2	6237.9	7201.3
8	TRADITION(6B95-2482)	23	5923.6	3988.2	5791.2	8046.3
9	M109	6	6396.1	3998.9	7034.4	8546.8
10	M112	5	6406.9	3902.0	6733.0	8143.2
11	M115	2	6511.3	3972.0	7518.8	8277.7
12	M116	7	6332.1	3670.6	6829.9	8509.1
13	ND18579	22	6059.7	3907.4	7050.6	7793.3
14	2ND19119	29	5427.3	3885.9	6076.4	8202.4
15	6B99-6639	19	6093.1	3719.1	6808.4	8105.5
16	6B99-6774	17	6100.1	3369.2	6474.7	8336.9
17	NEWDALE	14	6136.7	4144.2	6657.7	9058.1
18	BT490	10	6256.2	3353.1	7152.9	8223.9
19	ND19552	28	5660.9	3326.2	6663.1	7287.4
20	ND19620	25	5797.6	3374.6	6582.3	7728.7
21	ND19728	21	6063.5	4128.1	6657.7	7954.8
22	ND19742	8	6278.8	3853.6	6211.0	8256.2
23	ND16301	9	6275.0	3057.1	6453.2	7970.9
24	2ND19854	26	5726.0	3557.6	5758.9	8030.1
25	M118	4	6444.6	3740.6	7104.4	8729.8
26	M119	3	6501.6	3810.5	7185.1	8503.8
27	6B98-9022	16	6108.7	3762.1	6722.3	8283.1
28	6B00-1323	20	6086.7	3127.0	6173.3	8186.2
29	6B00-1328	15	6109.8	4117.3	6625.4	8493.0
30	6B00-1361	18	6099.0	3423.0	6092.6	8234.7
31	BT493	11	6216.4	2809.5	6297.1	8735.2
32	BT495	1	6556.0	3380.0	7691.1	8875.1
AVERAGE			6031.6	3622.2	6635.5	8149.1

TABLE 5. INFORMATION ON PLOT TYPE.

LOCATION	# REPS	DATE SOWN	LSD 5%		METERS HARVESTED	CM. BET. ROWS	DATE HARVESTED
			KG/HA	BU/A			
HAMIOTA	3	5/18	-	-	5.2 m ²	23.5	9/7
CARO	-						
BOTTINEAU	3	4/23	570.3	10.6	3.35	20	8/18
CARRINGTON	4	4/27	720.9	13.4	3	30	8/19
FARGO	4	4/16	790.9	14.7	3	30.5	8/12
SIDNEY	3	4/14	478.8	8.9	3.35	20	8/6
OSNABROCK	4	5/4	538.0	10.0	3	30.5	9/8
CROOKSTON	3	4/27	968.4	18.0	2.4	18	8/17
MADISON	3	4/13	454.6	8.45	4.9	30.5	7/28
MORRIS	3	4/8	914.6	17.0	2.4	18	8/5
KERNEN	6		416.6	7.7	4.5 m ²	15	

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

ENT NO.	VARIETY/ SELECTION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	STA YR	YRS	ADJ. MEAN	RANK
1	BARBLESS	3596	3072	3455	3328	3217	3341	3787	3185	3856	4870	10	91	3601.6	32
2	MOREX	3747	3319	3778	3400	3881	3562	3884	3398	4013	5329	10	91	3855.6	31
3	ROBUST	4161	3437	3940	3793	3846	4092	4269	3666	4377	5687	10	91	4159.8	27
BASE AVERAGES		3835	3276	3724	3507	3648	3665	3980	3417	4082	5295				
4	LEGACY (6B93-2978)		3752	4166	3986	4129	4279	4201	3864	4739	6199	9	82	4404.3	23
5	DRUMMOND (ND15477)			3870	4206	4048	3966	4616	3638	4702	5901	8	74	4315.3	24
6	LACEY (M98)				4175	4369	4418	4584	3919	4770	6183	7	64	4542.9	14
7	CONLON (2ND13299)									4523	5275	2	21	4056.3	30
8	TRADITION(6B95-2482					4011	4294	4532	4115	4743	5924	6	56	4448.8	20
9	M109							4672	4033	4989	6396	4	40	4642.5	8
10	M112								4262	4819	6407	3	31	4684.1	5
11	M115									4969	6511	2	21	4739.5	3
12	M116									4955	6332	2	21	4662.4	6
13	ND18579									4674	6060	2	21	4432.6	22
14	2ND19119									4555	5427	2	21	4130.6	29
15	6B99-6639									4759	6093	2	21	4482.7	15
16	6B99-6774									5021	6100	2	21	4599.4	10
17	NEWDALE									5117	6137	2	21	4655.8	7
18	BT490									4899	6256	2	21	4608.3	9
19	ND19552										5661	1	10	4139.6	28
20	ND19620										5798	1	10	4239.5	25
21	ND19728										6064	1	10	4434.0	21
22	ND19742										6279	1	10	4591.4	11
23	ND16301										6275	1	10	4588.6	12
24	2ND19854										5726	1	10	4187.2	26
25	M118										6445	1	10	4712.6	4
26	M119										6502	1	10	4754.3	2
27	6B98-9022										6109	1	10	4467.0	17
28	6B00-1323										6087	1	10	4450.9	19
29	6B00-1328										6110	1	10	4467.8	16
30	6B00-1361										6099	1	10	4459.9	18
31	BT493										6216	1	10	4545.7	13
32	BT495										6556	1	10	4794.1	1
NO. OF STATIONS		9	8	10	8	7	9	9	10	11	10				

ADJ. MEAN = VARIETY TOTAL FOR YEARS GROWN X 3872.3 /BASE AVERAGE FOR SAME YEARS

TABLE 7. AVE. STA. TEST WEIGHT (KG/HL). 2004 MISS. VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	RANK	AVERAGE 2 STA.	MADISON WISC	KERNEN SASK
1	BARBLESS	30	50.2	59.6	40.8
2	MOREX	32	48.0	58.3	37.6
3	ROBUST	19	52.2	62.6	41.8
4	LEGACY (6B93-2978)	31	50.0	61.1	38.9
5	DRUMMOND (ND15477)	7	54.4	63.7	45.1
6	LACEY (M98)	6	54.6	63.3	46.0
7	CONLON (2ND13299)	2	56.8	63.5	50.2
8	TRADITION(6B95-2482)	13	53.4	61.8	45.1
9	M109	8	54.0	60.5	47.5
10	M112	14	53.3	60.0	46.6
11	M115	16	52.7	59.0	46.3
12	M116	25	51.2	58.3	44.2
13	ND18579	17	52.5	61.4	43.6
14	2ND19119	1	62.1	62.8	61.4
15	6B99-6639	3	56.3	61.8	50.8
16	6B99-6774	23	51.6	60.5	42.7
17	NEWDALE	4	55.4	63.2	47.6
18	BT490	29	50.6	59.7	41.5
19	ND19552	11	53.7	61.4	46.0
20	ND19620	9	53.8	62.0	45.6
21	ND19728	27	51.0	62.0	40.0
22	ND19742	21	52.1	61.5	42.6
23	ND16301	22	52.0	58.8	45.2
24	2ND19854	5	55.2	61.9	48.4
25	M118	18	52.3	59.0	45.7
26	M119	15	53.2	60.2	46.2
27	6B98-9022	20	52.1	60.5	43.6
28	6B00-1323	26	51.2	61.1	41.2
29	6B00-1328	11	53.7	62.8	44.5
30	6B00-1361	12	53.5	61.1	45.8
31	BT493	24	51.3	59.1	43.5
32	BT495	28	50.7	59.0	42.5
AVERAGE			53.0	61.0	45.0

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

ENT NO.	VARIETY/ SELECTION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	YR	STA YRS	ADJ. MEAN	RANK
1	BARBLESS	60.0	62.0	62.4	61.8	65.2	54.7	64.0	64.3	65.1	50.2	10	40	61.7	30
2	MOREX	60.7	62.1	61.8	63.8	64.3	54.5	62.6	62.5	64.2	48.0	10	40	61.4	32
3	ROBUST	61.9	61.8	64.2	66.5	66.8	56.6	64.5	65.0	65.1	52.2	10	40	63.4	21
BASE AVERAGES		60.8	61.9	62.8	64.0	65.4	55.2	63.7	63.9	64.8	50.1				
4	LEGACY (6B93-2978)		61.7	62.1	65.5	66.3	48.2	63.1	62.7	63.3	50.0	9	35	61.4	31
5	DRUMMOND (ND15477)			62.4	66.3	66.1	55.7	65.3	63.8	65.9	54.4	8	31	63.2	23
6	LACEY (M98)				67.0	67.9	56.9	65.4	65.0	67.6	54.6	7	26	64.6	13
7	CONLON (2ND13299)									65.6	56.8	2	6	65.0	9
8	TRADITION (6B95-2482					65.8	55.2	66.0	64.9	65.2	53.4	6	20	63.1	24
9	M109							65.9	65.5	65.9	54.0	4	12	64.1	15
10	M112								65.4	66.1	53.3	3	10	63.9	18
11	M115									64.4	52.7	2	6	62.7	29
12	M116									65.2	51.2	2	6	62.8	28
13	ND18579									64.7	52.5	2	6	62.9	26
14	2ND19119									65.5	62.1	2	6	66.8	2
15	6B99-6639									66.2	56.3	2	6	65.3	8
16	6B99-6774									66.8	51.6	2	6	64.1	16
17	NEWDALE									64.7	55.4	2	6	63.9	17
18	BT490									65.7	50.6	2	6	62.9	25
19	ND19552										53.7	1	2	66.6	5
20	ND19620										53.8	1	2	66.7	3
21	ND19728										51.0	1	2	63.3	22
22	ND19742										52.1	1	2	64.6	12
23	ND16301										52.0	1	2	64.5	14
24	2ND19854										55.2	1	2	68.4	1
25	M118										52.3	1	2	64.9	10
26	M119										53.2	1	2	66.0	7
27	6B98-9022										52.1	1	2	64.6	11
28	6B00-1323										51.2	1	2	63.5	20
29	6B00-1328										53.7	1	2	66.6	5
30	6B00-1361										53.5	1	2	66.3	6
31	BT493										51.3	1	2	63.6	19
32	BT495										50.7	1	2	62.9	27
NO. OF STATIONS		5	4	5	6	5	3	2	4	4	2				

ADJ. MEAN = VARIETY TOTAL FOR YEARS GROWN X 62.1 /BASE AVERAGE FOR SAME YEARS

TABLE 9. AVE. STA. HEIGHT (CM). 2004 MISSISSIPPI VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	AVERAGE RANK	9 STA. AVERAGE	CROOKSTN MINN	MORRIS MINN	FARGO ND	CARRNGTN ND	OSNABRCK ND	SIDNEY MT	MADISON WISC
1	BARBLESS	32	107.2	106.0	108.0	97.0	114.3	99.1	119.4	109.2
2	MOREX	30	102.5	107.0	102.0	91.4	105.0	89.5	121.9	104.1
3	ROBUST	29	100.8	104.0	96.0	92.9	108.6	88.1	121.9	97.3
4	LEGACY (6B93-2978)	23	95.1	98.0	89.0	85.1	99.5	83.4	113.5	98.3
5	DRUMMOND (ND15477)	26	96.5	98.0	95.0	92.1	99.6	89.0	111.8	91.2
6	LACEY (M98)	16	92.4	100.0	88.0	83.6	92.9	79.8	107.5	92.2
7	CONLON (2ND13299)	7	89.0	91.0	83.0	87.3	89.8	79.4	105.0	86.4
8	TRADITION(6B95-2482)	17	92.8	93.0	93.0	89.8	96.9	82.1	110.9	86.4
9	M109	9	89.6	96.0	86.0	80.3	96.0	77.6	105.8	88.9
10	M112	15	92.0	97.0	85.0	82.8	97.8	81.1	109.2	91.4
11	M115	4	86.8	88.0	83.0	82.3	89.9	77.6	104.1	81.3
12	M116	2	84.3	80.0	82.0	81.1	89.8	74.3	103.3	76.2
13	ND18579	18	93.0	92.0	90.0	91.1	98.4	84.1	109.2	88.1
14	2ND19119	13	91.8	90.0	94.0	84.9	91.4	79.9	100.8	91.4
15	6B99-6639	14	91.9	96.0	98.0	83.1	94.0	78.4	105.8	88.1
16	6B99-6774	19	93.1	98.0	95.0	86.6	95.0	85.6	110.1	86.4
17	NEWDALE	6	87.9	98.0	90.0	84.1	92.3	76.5	99.9	80.5
18	BT490	11	90.4	97.0	90.0	80.5	94.4	77.6	109.2	89.7
19	ND19552	24	95.1	99.0	92.0	87.0	98.3	83.8	112.6	96.5
20	ND19620	22	93.6	98.0	95.0	87.3	94.8	81.1	113.5	88.1
21	ND19728	25	95.2	96.0	92.0	90.9	97.4	85.3	114.3	92.2
22	ND19742	8	89.2	92.0	88.0	85.0	90.8	77.1	109.2	86.4
23	ND16301	21	93.2	98.0	91.0	85.9	94.6	82.6	109.2	90.7
24	2ND19854	5	87.5	89.0	87.0	82.6	90.8	76.4	96.5	94.0
25	M118	3	86.0	87.0	84.0	82.5	91.8	79.5	100.8	78.7
26	M119	1	83.0	88.0	81.0	81.5	86.5	71.8	97.4	78.7
27	6B98-9022	21	93.2	97.0	92.0	89.3	93.8	83.8	110.9	92.2
28	6B00-1323	10	90.0	93.0	90.0	84.0	95.6	82.5	104.1	83.8
29	6B00-1328	28	100.0	107.0	102.0	91.0	104.6	87.8	111.8	96.5
30	6B00-1361	12	91.4	94.0	91.0	84.1	98.3	77.1	106.7	83.8
31	BT493	27	98.8	102.0	103.0	91.4	98.8	90.6	116.0	93.2
32	BT495	31	102.7	100.0	108.0	94.8	107.9	92.9	122.8	92.2
AVERAGE			93.0	95.9	92.0	86.7	96.6	82.4	109.2	89.8

TABLE 9. AVE. STA. HEIGHT (CM). 2004 MISSISSIPPI VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	RANK	AVERAGE 9 STA.	HAMIOTA MANITOBA	KERNEN SASK
1	BARBLESS	32	107.2	93.0	119.0
2	MOREX	30	102.5	89.0	113.0
3	ROBUST	29	100.8	89.0	109.0
4	LEGACY (6B93-2978)	23	95.1	85.0	104.0
5	DRUMMOND (ND15477)	26	96.5	86.0	106.0
6	LACEY (M98)	16	92.4	83.0	105.0
7	CONLON (2ND13299)	7	89.0	86.0	93.0
8	TRADITION(6B95-2482)	17	92.8	77.0	106.0
9	M109	9	89.6	78.0	98.0
10	M112	15	92.0	82.0	102.0
11	M115	4	86.8	79.0	96.0
12	M116	2	84.3	76.0	96.0
13	ND18579	18	93.0	82.0	102.0
14	2ND19119	13	91.8	90.0	104.0
15	6B99-6639	14	91.9	84.0	100.0
16	6B99-6774	19	93.1	85.0	96.0
17	NEWDALE	6	87.9	78.0	92.0
18	BT490	11	90.4	78.0	97.0
19	ND19552	24	95.1	84.0	103.0
20	ND19620	22	93.6	83.0	102.0
21	ND19728	25	95.2	87.0	102.0
22	ND19742	8	89.2	76.0	98.0
23	ND16301	21	93.2	83.0	104.0
24	2ND19854	5	87.5	79.0	92.0
25	M118	3	86.0	79.0	91.0
26	M119	1	83.0	75.0	87.0
27	6B98-9022	21	93.2	79.0	101.0
28	6B00-1323	10	90.0	77.0	100.0
29	6B00-1328	28	100.0	87.0	112.0
30	6B00-1361	12	91.4	83.0	105.0
31	BT493	27	98.8	89.0	105.0
32	BT495	31	102.7	95.0	111.0
AVERAGE			93.0	83.0	101.6

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

ENT NO.	VARIETY/ SELECTION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	STA YR	YRS	ADJ. MEAN	RANK
1	BARBLESS	85.2	90.1	88.1	96.2	90.3	100.8	88.3	89.8	88.7	107.2	10	74	92.7	32
2	MOREX	81.6	85.4	81.8	93.9	88.5	96.0	87.1	84.7	82.6	102.5	10	74	88.6	30
3	ROBUST	81.0	82.1	79.8	93.8	86.4	94.3	86.0	81.9	83.3	100.8	10	74	87.3	29
BASE AVERAGES		82.6	85.8	83.2	94.6	88.4	97.0	87.1	85.4	84.8	103.				
4	LEGACY (6B93-2978)		80.0	77.5	90.3	81.8	92.2	83.1	77.6	80.8	95.1	9	66	83.9	26
5	DRUMMOND (ND15477)			75.2	89.3	81.8	92.5	82.6	77.6	79.4	96.5	8	60	83.5	25
6	LACEY (M98)				86.2	80.1	88.9	79.7	75.5	76.1	92.4	7	53	80.9	18
7	CONLON (2ND13299)									76.3	89.0	2	18	78.6	10
8	TRADI TION(6B95-2482					78.5	86.8	78.2	74.6	78.6	92.8	6	47	80.4	14
9	M109							76.9	72.7	75.6	89.6	4	32	78.2	9
10	M112								74.0	76.8	92.0	3	24	79.6	13
11	M115									72.1	86.8	2	18	75.5	4
12	M116									72.1	84.3	2	18	74.4	2
13	ND18579									78.1	93.0	2	18	81.3	21
14	2ND19119									78.7	91.8	2	18	81.1	20
15	6B99-6639									77.4	91.9	2	18	80.5	15
16	6B99-6774									79.7	93.1	2	18	82.1	22
17	NEWDALE									74.1	87.9	2	18	77.0	6
18	BT490									75.1	90.4	2	18	78.7	11
19	ND19552										95.1	1	9	82.3	23
20	ND19620										93.6	1	9	81.0	19
21	ND19728										95.2	1	9	82.4	24
22	ND19742										89.2	1	9	77.1	7
23	ND16301										93.2	1	9	80.7	17
24	2ND19854										87.5	1	9	75.7	5
25	M118										86.0	1	9	74.4	3
26	M119										83.0	1	9	71.8	1
27	6B98-9022										93.2	1	9	80.7	17
28	6B00-1323										90.0	1	9	77.9	8
29	6B00-1328										100.0	1	9	86.5	28
30	6B00-1361										91.4	1	9	79.1	12
31	BT493										98.8	1	9	85.5	27
32	BT495										102.7	1	9	88.9	31
NO. OF STATIONS		8	6	7	6	7	8	8	6	9	9				

ADJ. MEAN = VARIETY TOTAL FOR YEARS GROWN X 89.6 /BASE AVERAGE FOR SAME YEARS

TABLE 11. AVE. STA. LODGING (IN %). 2004 MISSISSIPPI VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	AVERAGE RANK	6 STA.	CROOKSTN MINN	FARGO ND	CARRNGTN ND	OSNABRCK ND	SIDNEY MT	HAMI OTA MANI TOBA
1	BARBLESS	32	50.2	40.0	73.0	48.0	40.0	50.0	50.0
2	MOREX	30	44.3	23.0	60.0	30.0	28.0	70.0	55.0
3	ROBUST	27	34.8	23.0	43.0	28.0	33.0	50.0	31.7
4	LEGACY (6B93-2978)	24	30.4	10.0	58.0	23.0	38.0	40.0	13.3
5	DRUMMOND (ND15477)	5	13.6	0.0	18.0	10.0	15.0	20.0	18.3
6	LACEY (M98)	9	16.8	7.0	28.0	18.0	23.0	10.0	15.0
7	CONLON (2ND13299)	23	27.9	10.0	38.0	15.0	28.0	40.0	36.7
8	TRADITION(6B95-2482)	13	18.2	3.0	33.0	20.0	33.0	20.0	0.0
9	M109	18	21.4	3.0	43.0	28.0	33.0	20.0	1.7
10	M112	15	18.4	3.0	15.0	23.0	43.0	20.0	6.7
11	M115	10	17.7	0.0	40.0	13.0	28.0	20.0	5.0
12	M116	2	12.7	0.0	28.0	15.0	18.0	10.0	5.0
13	ND18579	8	16.1	10.0	23.0	10.0	25.0	10.0	18.3
14	2ND19119	19	22.3	13.0	38.0	23.0	25.0	10.0	25.0
15	6B99-6639	11	17.7	7.0	28.0	15.0	28.0	10.0	18.3
16	6B99-6774	17	19.3	33.0	20.0	23.0	28.0	10.0	1.7
17	NEWDALE	26	32.7	10.0	65.0	33.0	30.0	10.0	48.3
18	BT490	22	26.3	3.0	60.0	30.0	18.0	30.0	16.7
19	ND19552	15	18.4	3.0	35.0	13.0	28.0	20.0	11.7
20	ND19620	12	18.0	0.0	25.0	18.0	25.0	20.0	20.0
21	ND19728	21	25.7	13.0	38.0	15.0	28.0	20.0	40.0
22	ND19742	7	14.7	0.0	23.0	10.0	20.0	20.0	15.0
23	ND16301	1	12.2	0.0	20.0	18.0	25.0	10.0	0.0
24	2ND19854	16	18.5	3.0	38.0	15.0	20.0	10.0	25.0
25	M118	6	13.8	7.0	18.0	13.0	20.0	10.0	15.0
26	M119	3	13.3	0.0	25.0	15.0	23.0	10.0	6.7
27	6B98-9022	4	13.3	7.0	28.0	10.0	25.0	10.0	0.0
28	6B00-1323	28	38.6	7.0	63.0	38.0	30.0	20.0	73.3
29	6B00-1328	29	41.6	27.0	53.0	35.0	33.0	20.0	81.7
30	6B00-1361	20	22.4	7.0	33.0	28.0	30.0	20.0	16.7
31	BT493	25	30.7	3.0	68.0	35.0	30.0	30.0	18.3
32	BT495	31	44.4	10.0	60.0	53.0	35.0	30.0	78.3
AVERAGE			23.9	8.9	38.7	22.5	27.7	21.9	24.0

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

ENT NO.	VARIETY/ SELECTION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	STA YR	YRS	ADJ. MEAN	RANK
1	BARBLESS	40.0	0.0	64.8	52.7	46.9	31.5	37.2	46.0	65.6	50.2	10	30	48.6	32
2	MOREX	37.5	0.0	44.0	54.0	46.9	25.5	33.3	48.8	56.1	44.3	10	30	43.3	31
3	ROBUST	32.5	0.0	24.0	35.3	37.9	16.0	22.4	38.8	48.9	34.8	10	30	32.2	26
BASE AVERAGES		36.6	.000	44.2	47.3	43.9	24.3	30.9	44.5	56.8	43.0				
4	LEGACY (6B93-2978)		0.0	32.0	39.7	31.5	14.5	18.5	26.7	36.5	30.4	9	28	28.7	24
5	DRUMMOND (ND15477)			13.3	23.7	17.8	5.5	11.1	21.1	23.9	13.6	8	27	15.8	6
6	LACEY (M98)				34.3	29.2	11.5	21.9	26.0	35.4	16.8	7	23	23.9	19
7	CONLON (2ND13299)									42.2	27.9	2	9	28.4	23
8	TRADITION(6B95-2482					21.9	7.5	21.1	30.0	29.9	18.2	6	20	21.1	15
9	M109							16.0	30.0	32.2	21.4	4	14	23.0	18
10	M112								27.1	33.3	18.4	3	12	21.5	16
11	M115									28.2	17.7	2	9	18.4	12
12	M116									31.7	12.7	2	9	16.5	7
13	ND18579									30.0	16.1	2	9	18.0	11
14	2ND19119									50.4	22.3	2	9	27.5	22
15	6B99-6639									30.0	17.7	2	9	18.9	13
16	6B99-6774									27.7	19.3	2	9	19.2	14
17	NEWDALE									51.6	32.7	2	9	33.9	27
18	BT490									35.4	26.3	2	9	25.4	21
19	ND19552										18.4	1	6	17.7	9
20	ND19620										18.0	1	6	17.3	8
21	ND19728										25.7	1	6	24.6	20
22	ND19742										14.7	1	6	14.1	5
23	ND16301										12.2	1	6	11.7	1
24	2ND19854										18.5	1	6	17.8	10
25	M118										13.8	1	6	13.3	4
26	M119										13.3	1	6	12.8	2
27	6B98-9022										13.3	1	6	12.8	3
28	6B00-1323										38.5	1	6	37.0	28
29	6B00-1328										41.6	1	6	40.0	29
30	6B00-1361										22.4	1	6	21.6	17
31	BT493										30.7	1	6	29.5	25
32	BT495										44.4	1	6	42.6	30
NO. OF STATIONS		2	1	4	3	4	2	2	3	3	6				

ADJ. MEAN = VARIETY TOTAL FOR YEARS GROWN X 41.4 /BASE AVERAGE FOR SAME YEARS

TABLE 13. AVE. STA. HEADING (FROM MAY 31). 2004 MISS. VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	AVERAGE RANK	8 STA. AVERAGE	CROOKSTN MINN	MORRIS MINN	FARGO ND	CARRNGTN ND	OSNABRCK ND	SIDNEY MT	MADISON WISC
1	BARBLESS	21	30.5	32.0	21.0	24.3	33.5	43.5	21.0	12.3
2	MOREX	3	28.8	31.0	18.0	20.3	31.0	40.5	22.0	13.0
3	ROBUST	13	29.6	31.0	19.0	21.0	31.5	41.0	22.3	13.3
4	LEGACY (6B93-2978)	23	30.6	32.0	19.0	22.3	32.8	43.3	23.7	14.7
5	DRUMMOND (ND15477)	12	29.5	31.0	20.0	22.0	31.3	41.0	22.7	13.3
6	LACEY (M98)	8	29.1	31.0	19.0	20.0	31.8	40.8	22.3	13.0
7	CONLON (2ND13299)	1	26.9	28.0	15.0	20.0	29.3	37.8	21.0	12.0
8	TRADITION(6B95-2482)	18	30.2	32.0	21.0	23.0	32.5	41.8	23.3	13.0
9	M109	11	29.4	31.0	20.0	20.5	31.3	41.3	23.0	13.3
10	M112	14	29.6	31.0	19.0	20.3	34.3	40.3	22.7	13.3
11	M115	5	28.9	31.0	16.0	20.5	31.3	41.0	23.0	13.3
12	M116	15	29.6	31.0	20.0	21.0	32.0	40.8	23.0	14.0
13	ND18579	19	30.4	32.0	20.0	23.8	32.8	42.3	22.7	14.0
14	2ND19119	5	28.9	31.0	19.0	19.8	31.8	41.5	22.7	12.3
15	6B99-6639	17	30.0	32.0	20.0	22.5	31.8	41.0	24.0	14.3
16	6B99-6774	32	33.5	36.0	24.0	26.3	33.5	45.0	27.0	17.3
17	NEWDALE	31	33.4	37.0	23.0	27.0	35.0	43.5	26.0	17.7
18	BT490	9	29.1	30.0	19.0	20.0	31.0	41.3	23.0	12.7
19	ND19552	16	29.8	32.0	20.0	22.0	31.0	41.3	22.7	13.3
20	ND19620	22	30.6	32.0	20.0	23.3	32.3	41.5	23.7	14.3
21	ND19728	10	29.3	31.0	19.0	20.8	31.3	40.5	22.3	13.3
22	ND19742	28	31.4	33.0	22.0	22.8	32.5	42.5	24.0	15.3
23	ND16301	7	29.0	32.0	15.0	20.8	32.0	40.5	22.3	13.3
24	2ND19854	2	27.3	29.0	15.0	19.8	30.8	38.0	20.3	12.3
25	M118	25	30.7	33.0	21.0	21.0	32.5	42.5	23.3	14.3
26	M119	6	28.9	31.0	17.0	20.3	31.5	40.8	22.0	13.3
27	6B98-9022	24	30.6	32.0	22.0	23.0	31.5	41.5	23.7	14.0
28	6B00-1323	27	31.1	33.0	19.0	23.3	33.3	41.5	25.3	15.0
29	6B00-1328	20	30.4	32.0	21.0	22.0	31.8	41.5	23.3	14.3
30	6B00-1361	26	30.9	32.0	21.0	23.0	32.0	42.8	24.7	14.7
31	BT493	30	33.0	37.0	21.0	25.3	33.8	44.0	27.3	17.3
32	BT495	29	31.7	35.0	20.0	25.5	32.8	43.0	25.7	14.3
AVERAGE			30.1	32.0	19.5	22.1	32.1	41.6	23.3	13.9

TABLE 13. AVE. STA. HEADING (FROM MAY 31). 2004 MISS. VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	RANK	AVERAGE 8 STA.	HAMIOTA MANITOBA
1	BARBLESS	21	30.5	56.0
2	MOREX	3	28.8	54.7
3	ROBUST	13	29.6	57.3
4	LEGACY (6B93-2978)	23	30.6	57.0
5	DRUMMOND (ND15477)	12	29.5	54.7
6	LACEY (M98)	8	29.1	55.0
7	CONLON (2ND13299)	1	26.9	52.0
8	TRADITION(6B95-2482)	18	30.2	54.7
9	M109	11	29.4	55.0
10	M112	14	29.6	55.7
11	M115	5	28.9	55.0
12	M116	15	29.6	55.0
13	ND18579	19	30.4	55.3
14	2ND19119	5	28.9	53.0
15	6B99-6639	17	30.0	54.0
16	6B99-6774	32	33.5	59.3
17	NEWDALE	31	33.4	58.3
18	BT490	9	29.1	56.0
19	ND19552	16	29.8	55.7
20	ND19620	22	30.6	57.3
21	ND19728	10	29.3	56.0
22	ND19742	28	31.4	58.7
23	ND16301	7	29.0	56.3
24	2ND19854	2	27.3	53.0
25	M118	25	30.7	58.0
26	M119	6	28.9	55.3
27	6B98-9022	24	30.6	57.3
28	6B00-1323	27	31.1	58.7
29	6B00-1328	20	30.4	57.3
30	6B00-1361	26	30.9	57.3
31	BT493	30	33.0	58.3
32	BT495	29	31.7	57.0
AVERAGE			30.1	56.1

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

ENT NO.	VARIETY/ SELECTION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	STA YR	YRS	ADJ. MEAN	RANK
1	BARBLESS	34.8	35.8	33.8	21.3	28.9	26.1	32.2	33.1	27.9	30.5	10	71	30.6	21
2	MOREX	32.8	32.5	30.3	18.9	26.5	23.8	30.8	31.1	27.5	28.8	10	71	28.6	3
3	ROBUST	34.4	34.1	31.7	19.9	28.5	25.0	32.0	32.2	28.7	29.6	10	71	29.8	15
BASE AVERAGES		34.0	34.1	31.9	20.0	27.9	24.9	31.6	32.1	28.0	29.6				
4	LEGACY (6B93-2978)		33.9	33.4	21.1	29.4	26.6	33.2	33.4	29.0	30.6	9	65	30.8	25
5	DRUMMOND (ND15477)			31.3	19.8	27.6	24.3	30.8	31.9	27.8	29.5	8	59	29.2	8
6	LACEY (M98)				19.7	27.6	24.5	31.8	31.6	28.0	29.1	7	52	29.4	10
7	CONLON (2ND13299)									26.2	26.9	2	19	27.4	2
8	TRADITION(6B95-2482					27.5	24.5	31.4	31.9	28.0	30.2	6	47	29.5	12
9	M109							31.6	31.6	28.0	29.4	4	35	29.5	11
10	M112								31.7	28.1	29.6	3	27	29.5	13
11	M115									27.8	28.9	2	19	29.2	7
12	M116									28.4	29.6	2	19	29.9	17
13	ND18579									28.3	30.4	2	19	30.1	19
14	2ND19119									27.7	28.9	2	19	29.1	6
15	6B99-6639									28.5	30.0	2	19	30.1	18
16	6B99-6774									29.9	33.5	2	19	32.5	30
17	NEWDALE									30.5	33.4	2	19	32.8	31
18	BT490									28.7	29.1	2	19	29.8	16
19	ND19552										29.8	1	8	29.8	14
20	ND19620										30.6	1	8	30.6	22
21	ND19728										29.3	1	8	29.3	9
22	ND19742										31.4	1	8	31.4	28
23	ND16301										29.0	1	8	29.1	5
24	2ND19854										27.3	1	8	27.3	1
25	M118										30.7	1	8	30.8	24
26	M119										28.9	1	8	29.0	4
27	6B98-9022										30.6	1	8	30.7	23
28	6B00-1323										31.1	1	8	31.2	27
29	6B00-1328										30.4	1	8	30.5	20
30	6B00-1361										30.9	1	8	31.0	26
31	BT493										33.0	1	8	33.1	32
32	BT495										31.7	1	8	31.7	29
NO. OF STATIONS		6	6	7	5	6	6	8	8	11	8				

ADJ. MEAN = VARIETY TOTAL FOR YEARS GROWN X 29.7 /BASE AVERAGE FOR SAME YEARS

TABLE 15. AVE. STA. RI PE (FROM MAY 31). 2004 MISSISSIPPI VALLEY BARLEY NURSERY

ENT. NO.	VARIETY OR SELECTION	AVERAGE RANK	10 STA.	CROOKSTN MI NN	MORRIS MI NN	FARGO ND	CARRNGTN ND	OSNABRCK ND	BOTTNEAU ND	SIDNEY MT
1	BARBLESS	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	MOREX	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	ROBUST	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	LEGACY (6B93-2978)	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	DRUMMOND (ND15477)	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	LACEY (M98)	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	CONLON (2ND13299)	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	TRADITION(6B95-2482)	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	M109	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	M112	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	M115	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	M116	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	ND18579	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	2ND19119	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	6B99-6639	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	6B99-6774	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	NEWDALE	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	BT490	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	ND19552	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	ND19620	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	ND19728	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	ND19742	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	ND16301	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	2ND19854	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	M118	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	M119	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	6B98-9022	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	6B00-1328	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	6B00-1328	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	6B00-1361	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	BT493	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	BT495	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AVERAGE			0.0	.0	.0	.0	.0	.0	.0	.0

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

ENT. NO.	VARIETY OR SELECTION	AVERAGE RANK	7 STA.	CROOKSTN MI NN	MORRIS MI NN	FARGO ND	CARRNGTN ND	OSNABRCK ND	BOTTNEAU ND	HAMI OTA MANI TOBA
1	BARBLESS	32	4522.5	5166.8	5113.0	4284.2	3385.4	2222.8	4795.5	6690.0
2	MOREX	31	4953.1	6028.0	6297.1	4709.4	4036.6	3288.5	4445.6	5866.5
3	ROBUST	28	5438.3	5758.9	6620.0	5785.8	5193.8	3697.5	4908.5	6103.3
4	LEGACY (6B93-2978)	13	5979.5	6512.4	7212.1	5204.5	5495.2	4671.7	5382.1	7378.9
5	DRUMMOND (ND15477)	23	5738.9	6297.1	6458.6	5279.9	5775.0	4973.1	5236.8	6151.8
6	LACEY (M98)	14	5958.8	6781.5	6243.3	6044.1	5570.5	4381.1	5129.2	7561.9
7	CONLON (2ND13299)	30	5040.0	6081.8	6189.5	3143.2	5102.3	3762.1	4763.2	6237.9
8	TRADITION(6B95-2482)	24	5688.1	6512.4	6620.0	5425.2	5565.1	4537.1	5366.0	5791.2
9	M109	7	6140.2	7373.5	7427.3	5893.4	5226.0	4650.2	5376.7	7034.4
10	M112	4	6311.7	7588.8	7158.2	5968.8	6523.1	4693.2	5516.7	6733.0
11	M115	3	6351.7	6727.7	7911.7	6200.2	6071.0	4714.7	5317.5	7518.8
12	M116	9	6136.4	5705.1	7857.9	5888.1	6324.0	4585.6	5764.3	6829.9
13	ND18579	19	5891.9	6566.2	6727.7	5893.4	5489.8	4176.5	5339.1	7050.6
14	2ND19119	29	5056.1	5166.8	6081.8	4887.0	3708.3	4192.7	5279.9	6076.4
15	6B99-6639	15	5945.7	6404.7	7212.1	5758.9	5000.0	4650.2	5785.8	6808.4
16	6B99-6774	17	5905.0	6942.9	7588.8	5656.6	5016.1	4273.4	5382.1	6474.7
17	NEWDALE	21	5821.9	6673.8	6081.8	5748.1	4725.5	5549.0	5317.5	6657.7
18	BT490	10	6131.8	6620.0	7535.0	5688.9	5866.5	4677.1	5382.1	7152.9
19	ND19552	26	5542.1	5920.3	6243.3	5974.2	5010.8	4128.1	4854.7	6663.1
20	ND19620	25	5629.7	6135.6	6620.0	5505.9	4704.0	4591.0	5269.1	6582.3
21	ND19728	20	5828.1	6243.3	7158.2	5769.6	4838.5	4687.8	5441.3	6657.7
22	ND19742	9	6136.4	6835.3	6942.9	6528.5	5748.1	4822.4	5866.5	6211.0
23	ND16301	6	6200.2	7104.4	8019.4	6092.6	5936.5	4343.4	5452.1	6453.2
24	2ND19854	27	5469.0	6458.6	6620.0	5059.2	5425.2	4413.3	4547.9	5758.9
25	M118	5	6248.7	7212.1	6889.1	5904.2	6264.8	4908.5	5457.5	7104.4
26	M119	2	6354.8	7373.5	7642.6	6146.4	6372.4	4714.7	5048.4	7185.1
27	6B98-9022	12	6001.1	6512.4	6996.8	5796.6	5936.5	4881.6	5161.5	6722.3
28	6B00-1323	16	5921.9	6566.2	7965.6	4843.9	5317.5	5263.7	5322.9	6173.3
29	6B00-1328	22	5810.4	6996.8	7265.9	5156.1	4537.1	4547.9	5543.6	6625.4
30	6B00-1361	18	5893.4	6243.3	7319.7	6426.3	5247.6	4359.5	5565.1	6092.6
31	BT493	11	6004.9	6243.3	8073.2	4892.4	4903.1	5522.1	6103.3	6297.1
32	BT495	1	6364.8	6727.7	7212.1	6646.9	4946.2	5452.1	5877.3	7691.1
AVERAGE			5825.5	6483.8	6978.3	5568.8	5289.5	4510.4	5312.5	6635.5

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

ENT NO.	VARIETY/ SELECTION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	STA YR	ADJ. YRS	MEAN	RANK
1	BARBLESS	3472	3209	3505	3497	3269	3329	3885	3004	3719	4523	10	69	3557.6	32
2	MOREX	3629	3475	3646	3552	4109	3538	3818	3034	3960	4953	10	69	3781.2	31
3	ROBUST	4021	3745	3929	3984	4134	4094	4343	3568	4247	5438	10	69	4164.1	28
BASE AVERAGES		3707	3476	3694	3677	3837	3654	4015	3202	3975	4971				
4	LEGACY (6B93-2978)		4003	4097	4230	4412	4413	4316	3687	4626	5980	9	63	4420.6	23
5	DRUMMOND (ND15477)			3848	4416	4306	3972	4567	3602	4619	5739	8	57	4328.5	25
6	LACEY (M98)				4431	4523	4379	4592	3819	4627	5959	7	49	4534.6	19
7	CONLON (2ND13299)									4394	5040	2	15	4054.6	30
8	TRADITION (6B95-2482)					4348	4388	4529	4151	4711	5688	6	42	4506.6	20
9	M109							4699	3906	4769	6140	4	28	4626.4	14
10	M112								4378	4781	6312	3	21	4856.6	3
11	M115									4829	6352	2	15	4783.7	5
12	M116									4743	6136	2	15	4657.3	11
13	ND18579									4738	5892	2	15	4556.3	16
14	2ND19119									4570	5056	2	15	4142.3	29
15	6B99-6639									4678	5946	2	15	4550.4	17
16	6B99-6774									4982	5905	2	15	4674.0	9
17	NEWDALE									5046	5822	2	15	4670.3	10
18	BT490									4946	6132	2	15	4748.7	7
19	ND19552										5542	1	7	4274.5	26
20	ND19620										5630	1	7	4342.1	24
21	ND19728										5828	1	7	4495.1	21
22	ND19742										6136	1	7	4732.9	8
23	ND16301										6200	1	7	4782.1	6
24	2ND19854										5469	1	7	4218.1	27
25	M118										6249	1	7	4819.5	4
26	M119										6355	1	7	4901.3	2
27	6B98-9022										6001	1	7	4628.5	13
28	6B00-1323										5922	1	7	4567.4	15
29	6B00-1328										5810	1	7	4481.4	22
30	6B00-1361										5893	1	7	4545.5	18
31	BT493										6005	1	7	4631.5	12
32	BT495										6365	1	7	4909.0	1
NO. OF STATIONS		6	6	8	7	6	8	7	6	8	7				

ADJ. MEAN = VARIETY TOTAL FOR YEARS GROWN X 3834.3 /BASE AVERAGE FOR SAME YEARS

Table 18. Disease data from A. Tekauz, Cereal Research Centre, Agriculture and Agri-Food Canada, Winnipeg MB

Entry	102 ^a	Net Blotch		Scald	Septoria	Spot Blotch
		858 ^a	857 ^b	1493 ^c	1998 ^d	1903 ^e
BARBLESS	10 ^f	8	2	S ^g	S ^h	7 ⁱ
MOREX	10	9	5	S	S	7
ROBUST	10	9	5	S	S	6
LEGACY	9	8	3	S	S	6
DRUMMOND	9	7	3	S	S	6
LACEY	10	8	5	S	S	6
CONLON	4	9	1	S	S	7
TRADITION	10	10	5	S	S	5
M109	10	10	5	S	S	4
M112	10	10	5	S	S	4
M115	10	10	5	S	S	4
M116	9	5	3	S	S	4
ND18579	10	7	3	S	S	5
2ND19119	7	9	2	MS	S	4
6B99-6639	10	9	5	S	S	6
6B99-6774	10	9	3	S	S	4
NEWDALÉ	6	8	2	S	S	5
BT 490	9	8	1	S	S	6
ND19552	10	9	3	S	S	6
ND19620	10	9	3	S	S	6
ND19728	10	8	3	S	S	6
ND19742	10	10	3	S	S	6
ND16301	9	9	5	S	S	5
2ND19854	10	10	3	S	S	6
M118	9	8	2	S	S	4
M119	10	9	5	S	S	4
6B98-9022	9	9	5	S	S	4
6B00-1323	10	9	5	S	S	5
6B00-1328	7	7	3	S	S	5
6B00-1361	9	9	3	S	S	5
BT 493	10	8	1	S	S	5
BT 495	6	7	1	S	S	5

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 19. Parentage and origin of entries in the 2004 MVBN.

Ent#	Cl# or Contributor	Name	Parentage
1.	5105	Barbless	Oderbrucker/Lion
2.	15773	Morex	Cree/Bonanza
3.	476976	Robust	Morex/Manker
4.	Busch Ag. Res.	Legacy(6B93-2978)	Bumper/Karl//Bumper/Manker/3/Bumper/Karl/4/Excel
5.	PI 615584	Drummond(ND15477)	ND9712//Stander/ND12200
6.	PI 613603	Lacey(M98)	M78/M79
7.	North Dakota	Conlon(2ND13299)	Bowman*2/Brigitta mutant//ND10232
8.	Busch Ag.	Tradition(6B95-2482)	6B89-2126/ND10981
9.	Minnesota	M109	Lacey/M95
10.	Minnesota	M112	M93-121/M81
11.	Minnesota	M115	M94-33/M94-111
12.	Minnesota	M116	M104/M81
13.	North Dakota	ND18579	ND15483/ND15614
14.	North Dakota	2ND19119	ND15403-3/ND15368//ND16453
15.	Busch Ag. Res.	6B99-6639	B1614//6B92-7166/B1614
16.	Busch Ag. Res.	6B99-6774	Legacy/6B94-7862
17.	Manitoba	Newdale	CDC Stratus/TR236/WM862-6
18.	Saskatchewan	BT490	SM95096/SM94043
19.	North Dakota	ND19552	ND15483/ND16301
20.	North Dakota	ND19620	ND15483/ND16258
21.	North Dakota	ND19728	ND15483//Azure/ND5377
22.	North Dakota	ND19742	ND15483//ND9712/ND5377
23.	North Dakota	ND16301	Foster//ND12200/6B88-3213
24.	North Dakota	2ND19854	ND15403-3/ND1642
25.	Minnesota	M118	M104/M103
26.	Minnesota	M119	M104/M81
27.	Busch Ag. Res.	6B98-9022	6B92-7098/6b92-7166
28.	Busch Ag. Res.	6B00-1323	6B94-8126 // LEGACY / 6B95-6311
29.	Busch Ag. Res.	6B00-1328	6B94-8126 // LEGACY / 6B95-6311
30.	Busch Ag. Res.	6B00-1361	6B94-8126 // LEGACY / 6B95-6311
31.	Saskatchewan	BT493	SM95001 / SM95098
32.	Saskatchewan	BT495	SM95043 / SM95428

*Entries 19-32 are new for 2004.

Miscellaneous Pedigree Information:

ND9712 = Hazen*2/WPG821

ND12200 = Bumper/Hazen//Azure

ND15246 = ND9668/ND9712

ND9668 = Azure*2/M34

ND15377 = ND9712//ND10883/6B86-3016

ND10883 = Azure/BT358

ND15483 = ND9712//Stander/ND12231

ND12231 = ND9319/Azure

ND9319 = Hazen/BT456

ND15614 = ND9712*2/ND10521

ND10521 = Glenn/M46

ND16301 = Foster//ND12200/6B88-3213

ND16258 = ND12738*2/PC249

ND5377 = Glenn/Karl

TABLE 20. Agronomic data for varieties and selections grown in the 2004 Mississippi Valley Barley Nursery under irrigation at Aberdeen, ID.

Entry	Pedigree		Yield	T.Wt.	6/64	5.5/64	Thin	Head	Height	Lodge%	Other
1	Barbless	Oderbrucker/Lion	132.1	44.8	79	16	6	182.5	47	28	
2	Morex	Cree/Bonanza	115.5	49.6	93	6	2	169.5	40	51	cereal beetle
3	Robust	Morex/Manker	122.1	51.5	94	5	1	171.5	43	20	
4	Legacy(6B93-2978)	Bumper/Karl//Bumper/Manker/3/Bumper/Karl/4/Excel	138.5	51.2	92	7	2	174.5	40	27	
5	Drummond (ND15477)	ND9712//Stander/ND12200	118.1	50.5	96	4	0	168.5	40	11	cereal beetle
6	Lacey (M98)	M78/M79	125.5	51.8	93	7	1	169.5	36	14	
7	Conlon	Bowman*2/Brigitta mutant//ND10232	101.0	52.2	99	1	0	166.5	33	0	
8	Tradition(6B95-2482)	6B89-2126/ND10981	122.2	52.1	96	4	1	173	38	0	
9	M109	Lacey/M95	130.6	51.5	94	5	1	172.5	36	4	
10	M112	M93-121/M81	144.0	51.0	98	3	0	171	39	0	cereal beetle
11	M115	M94-33/M94-111	129.3	50.9	95	5	1	171	37	0	cereal beetle
12	M116	M104/M81	130.9	50.5	92	7	2	172.5	36	0	cereal beetle
13	ND18579	ND15483/ND15614	117.8	50.6	96	4	1	171.5	39	11	
14	2ND19119	ND15403-3/ND15368//ND16453	111.4	51.1	99	1	0	166	37	0	
15	6B99-6639	B1614//6B92-7166/B1614	121.3	50.1	97	3	1	171.5	38	0	cereal beetle
16	6B99-6774	Legacy/6B94-7862	118.1	51.6	97	3	0	175.5	39	0	cereal beetle
17	Newdale	CDC Stratus//TR236/WM862-6	134.9	51.7	96	3	2	173.5	38	0	
18	BT490	SM95096/SM94043	134.7	51.8	95	5	1	173	38	8	
19	ND18579	ND15483/ND15614	105.0	50.4	97	3	1	171.5	38	8	
20	ND19552	ND15483/ND16301	110.1	50.8	98	2	1	169	37	2	
21	ND19620	ND15483/ND16258	122.7	52.2	98	2	1	170	37	8	cereal beetle, smut
22	ND19728	ND15483//Azure/ND5377	125.5	51.2	97	3	1	167.5	40	0	
23	ND19742	ND15483/ND9712/ND5377	128.2	51.2	96	3	2	170.5	36	0	
24	ND16301	Foster//ND12200/6B88-3213	138.2	49.9	94	5	2	172	37	36	cereal beetle
25	2ND19854	ND15403-3/ND1642	125.7	52.1	95	4	2	164.5	33	0	
26	M118	M104/M103	114.4	51.5	97	3	1	173	36	0	smut
27	M119	M104/M81	119.9	49.9	94	5	1	170	34	0	smut
28	6B98-9022	6B92-7098/6b92-7166	134.5	50.6	98	2	0	171	37	0	
29	6B00-1323	6B94-8126 // LEGACY / 6B95-6311	126.3	50.9	93	7	1	174.5	37	0	
30	6B00-1328	6B94-8126 // LEGACY / 6B95-6311	129.7	51.3	98	2	1	173	41	20	
31	6B00-1361	6B94-8126 // LEGACY / 6B95-6311	111.5	50.7	97	3	0	172	38	0	cereal beetle
32	BT493	SM95001 / SM95098	124.0	54.5	95	4	1	176	40	45	
33	BT495	SM95043 / SM95428	131.4	49.4	93	7	1	176.5	43	54	

