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INTRODUCTION

Content:

This preliminary draft report is intended to serve as a popularized 2004 summary of “primary” on-going cereal and oilseed crop variety investigations traditionally conducted on-station by the Agronomy Division at Northern Agricultural Research Center. These data represent approximately 24 percent of NARC-Agronomy’s total research project effort on-station at Havre, and approximately 31 percent of the cereal and oilseed variety evaluation effort on-station. The remaining 69 percent of the cereal and oilseed variety evaluation effort not reported here is associated with larger nurseries featuring early generation or other unnamed experimental materials not of general interest to the public. Long-term data summaries reported here are limited to the most recent ten years, largely due to need for report brevity and the fact that most varieties have approximately a 10-year life span before they are replaced in common use with newer materials having superior production characteristics. However, variety performance data has been continuously collected and maintained at the Havre station for 89 years beginning in 1916.

Detailed data pertaining to multiple performance characters, along with associated climatic and management inputs are presented for 2004. Abridged, multi-year summaries for each trial are limited to two crop characters. Individuals desiring detailed data for other than the current year may contact the research center or refer to previous editions of this report for the year(s) of interest.

2004 Data:

It should be noted that 2004 data tables in this report represent varietal performance for a single crop year at a single location only, and thus cannot be considered representative of performance expected when differing conditions due to location, year and management are imposed. Therefore, by itself, such 2004 data shall not constitute in any form a recommendation for or against any entry or practice included.

Multi-Year Summary Data:

Use of a “Comparable Average” provides a mechanism for “estimating” the performance of varieties over a period of time longer than that for which actual data is available for them. This is accomplished by comparing the performance of a “variety of interest” for the years it was actually tested with that of a designated long-term “check” or reference variety grown in the same trial in the same years. The performance of the variety is then expressed as a percent of the check variety’s performance. This actual percentage or index is then applied to the actual long-term performance of the check to estimate the performance of the variety of interest had it been grown over the same long term. The reliability of comparable average figures improves with increasing years of actual evaluation. For this reason, no entries with less than three years actual data have been included in long-term summaries.

Other References:

It is intended that this report be used as a supplement to variety performance summaries prepared by MSU’s Plant Science and Plant Pathology Department on statewide evaluations by MSU-Montana Agricultural Experiment Station:

Winter Wheat Varieties, Extension Service 2B 1098 (Revised February-March annually)

Spring Wheat Varieties, Extension Service 2B 1093 (Revised February-March annually)

Barley Varieties, Extension Service 2B 1094 (Revised February-March annually)

Oat Varieties, Extension Service 2B 1096 (Revised periodically, last revised in 2004)

These summaries include performance data, descriptions, quality assessments, disease and insect considerations, cropping district recommendations, cultural practices, and general crop production management information. These publications are available from MSU-Extension Service offices and can further be accessed via the Internet at

<http://ag.montana.edu/narc>

<http://www.sarc.montana.edu/mwbc/>

<http://plantsciences.montana.edu/MTgrower.htm>

TABLE X. Summary of climatic data by months for the 2003-2004 crop year (September to August) and averages for the period 1916-2004 at the Northern Agricultural Research Center, Havre, Montana.

Month Year	Sep 2003	Oct 2003	Nov 2003	Dec 2003	Jan 2004	Feb 2004	Mar 2004	Apr 2004	May 2004	Jun 2004	Jul 2004	Aug 2004	Crop Year
<u>Precipitation (inches)</u>													<u>Total</u>
Current Year	1.37	0.56	0.28	0.64	0.92	0.18	0.16	1.07	4.36	2.13	1.08	1.68	14.43
88-Year Average (1916 to 2003-04)	1.16	0.66	0.42	0.45	0.44	0.32	0.55	0.97	1.81	2.59	1.49	1.24	12.10
<u>Mean Temperature (°F)</u>													<u>Average</u>
Current Year	56.6	50.6	22.2	25.3	12.6	18.9	38.7	47.6	49.9	58.5	69.8	65.7	43.0
88-Year Average (1916 to 2003-04)	56.7	46.3	30.2	19.8	15.3	20.1	30.1	44.1	54.7	62.5	69.8	68.0	43.1

Last killing frost in spring*

2004 _____ May 24th
 Ave. 1916-2004 _____ May 15th

First killing frost in fall*

2004 _____ October 1, 2004
 Ave. 1916-2004 _____ September 20th

Frost free period

2004 _____ 130 days
 Ave. 1916-2004 _____ 128 days

Growing degree days (base 50)

May 1-Oct 31, 2004 _____ 2050.0
 Ave. 1951-2004 _____ 2385.8

Maximum summer temperature _____ 102° on July 18, 2004

Minimum winter temperature _____ -28° on January 4, 2004

*In this summary 32° is considered a killing frost

TABLE 1. Intrastate Winter Wheat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions. Northern Agricultural Research Center. Havre, Montana. 2004. (Exp# 04-3502-SW)

ID	CULTIVAR or SELECTION	STAND %	1/ HEAD DATE	PLNT HT Inches	2/ YIELD Bu/Ac	MOISTURE %	TEST WT Lbs/Bu	3/ PROTEIN %	4/ SAWFLY %
CI 17879	ROCKY	100.0	155.0	35.2	74.7	9.6	62.4	11.5	10.0
BZ96-919	PRYOR	99.3	161.0	33.0	73.1	8.7	58.4	13.6	3.3
PI619098	WAHOO	100.0	152.3	30.8	72.8	9.0	59.5	12.5	5.0
MT0177	ND8895//ND8892/KS87H6	100.0	157.3	31.7	71.7	9.1	60.2	13.0	10.0
GM10002	NUHORIZON	100.0	154.0	28.6	71.4	9.5	62.9	12.4	5.0
MT998253	MT9982-53 = Promontory/Ju	98.6	160.0	34.3	71.4	8.7	59.5	14.6	10.0
MT0245	Erh/3/KS27//Jdh//Nsr*5/CMC	100.0	156.3	31.5	71.2	8.6	58.7	14.2	10.0
MT02136	NE92522/MT9418	100.0	154.7	31.3	70.9	8.6	57.0	14.4	5.0
MTW01133	NuWest/SD88191	100.0	153.7	28.4	70.6	8.9	60.9	13.6	3.3
ABOVE	ABOVE	100.0	151.7	28.2	70.6	8.8	61.6	12.5	8.3
MT00159	Promontory/Judith	100.0	157.7	33.7	70.3	8.3	57.9	15.0	13.3
MT998265	MT9982-65 = Promontory/Ju	100.0	158.7	34.0	70.2	8.5	58.2	14.3	11.7
GM10001	NUFRONTIER	100.0	152.7	32.3	69.7	9.4	62.3	9.9	6.7
MT02113	Karl 92/UT190	100.0	158.0	33.0	69.4	8.3	57.2	14.1	11.7
MTW01143	Promontory/MT91366	100.0	160.0	34.8	69.3	8.8	60.0	12.6	11.7
S94-4	CDC FALCON	100.0	157.7	30.1	69.3	9.2	60.7	12.5	8.3
MTS0031	GENOU	100.0	156.7	34.5	68.7	8.9	59.7	13.5	3.3
MT01148	Judith/Blizzard	100.0	159.3	35.3	68.4	8.9	59.7	13.6	8.3
JAGALENE	JAGALENE	100.0	152.0	28.6	68.0	9.0	62.4	13.7	10.0
PI613099	MILLENIUM	100.0	153.3	33.3	68.0	9.4	61.4	13.5	5.0
MT0097	Erhardt//Judith/Kestrel	100.0	159.3	35.0	66.3	8.8	58.3	14.2	10.0
PI555458	PROMONTORY	100.0	156.0	32.2	66.2	8.9	60.9	13.9	15.0
MTW02111	Karl 92/UT190	100.0	159.3	33.0	66.2	8.7	58.1	14.1	6.7
RH78W296	BIGHORN	100.0	156.3	31.3	66.1	8.5	59.5	14.3	10.0
SD97457	EXPEDITION	100.0	150.7	30.5	65.8	9.3	62.0	12.4	8.3
CI 17860	NEELEY	100.0	157.7	34.6	65.6	8.8	59.2	14.0	11.7
MTS0222	Rampart*2//Judith	100.0	155.0	32.9	65.6	8.5	59.5	15.2	1.7
PI517194	TIBER	100.0	156.7	36.7	65.5	8.8	59.7	14.2	6.7
BZ96-788	Hatten/HRW popn//MTSF1142	100.0	155.7	30.5	65.2	8.9	60.8	13.5	10.0
MT9426	PAUL	100.0	158.0	32.7	65.0	8.7	57.0	14.6	10.0
MT 9432	BIGSKY	100.0	156.7	36.6	64.3	8.7	58.5	15.2	5.0
UT94415	GOLDEN SPIKE	100.0	158.3	36.9	64.1	8.2	57.2	14.2	13.3
PI586806	NUWEST	100.0	158.0	35.9	63.9	8.8	60.0	13.0	6.7
MTW9441	NUSKY	100.0	158.7	35.1	63.4	8.8	59.3	14.7	8.3
PI593889	RAMPART	99.7	156.3	34.7	63.2	8.6	59.1	15.7	3.3
PI584526	JUDITH	100.0	156.7	35.4	62.4	8.6	57.5	15.0	10.0
PI593891	VANGUARD	100.0	155.0	34.1	61.7	8.8	60.0	14.5	1.7
GM10004	GM10004	100.0	157.0	34.7	61.6	9.1	60.4	13.1	10.0
MTI01159	Fidel/Tiber	99.0	156.0	31.6	61.4	7.9	57.6	14.4	3.3
MTS0023*	MTS0023-58 = MTS92021//JD	100.0	161.3	36.6	61.2	8.1	56.2	17.0	5.0
ND9257	JERRY	100.0	158.7	37.5	60.6	9.1	58.8	12.3	8.3
QT 542	HYBRITECH 542	99.3	155.0	34.9	60.5	8.8	59.5	14.4	10.0
MT0277	MT9417/Ogallala	100.0	155.0	32.8	60.4	8.7	57.0	15.6	6.7

**TABLE 1. Intrastate Winter Wheat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland
Continued Fallow Conditions. Northern Agricultural Research Center. Havre, Montana. 2004.
(Exp# 04-3502-SW)**

ID	CULTIVAR or SELECTION	STAND %	1/	PLNT HT Inches	2/	MOISTURE %	TEST WT Lbs/Bu	3/	4/
			HEAD DATE		YIELD Bu/Ac			PROTEIN %	SAWFLY %
PI599336	MORGAN	100.0	159.3	35.4	58.1	8.7	58.7	14.0	8.3
MTW02115	MT91366//Judith/Blizzard	100.0	157.3	33.3	58.1	9.2	60.7	12.0	20.0
PI596352	ELKHORN	100.0	157.3	39.0	53.4	8.6	58.3	15.1	11.7
WA7939	WA7939	100.0	163.3	33.3	53.0	7.9	52.0	16.4	11.7
WA7936	WA7936	99.3	165.7	33.8	49.4	8.5	55.5	12.7	8.3
CI 17735	NORSTAR	99.0	162.0	42.8	47.4	9.0	59.1	14.5	6.7
EXPERIMENTAL MEANS		99.9	157.0	33.6	65.2	8.8	59.2	13.9	8.3
LSD (0.05)		0.9	1.9	1.7	7.8	0.5	2.3	.	6.9
C.V.2: (S of MEAN / MEAN)*100		0.3	0.4	1.8	4.3	1.9	1.4	.	29.7

1/ No. of Days from January 1 (157 = June 5)

2/ Volumetric yields are based on plot weights adjusted to uniform 12 percent grain moisture and 60 lbs/bu as the standard test weight for wheat.

3/ Protein values are adjusted to 12 percent grain moisture.

4/ Sawfly rating is reported as the percentage of cut stems.

Site Resource & Management Data: (Exp# 04-3502-WW)					
Field	A-7-4	SaltHaz(MMHOS/cm)6-24"	1.4	2" Soil Temp (°F) @ Plnt'g	pndg
Quarter	NW	Soil Texture 0-6"	CL	4" Soil Temp (°F) @ Plnt'g	pndg
Section	33	Soil Texture 6-24"	CL	Fertilizer Formulation	Gran.Blend
Township	32N	Soil Texture 24-36"	CL	Fertilizer Placement	Brdcst - PPI
Range	15E	Soil Texture 36-48"	CL	Fert. Rate (lbs/ac) N	70
Latitude		Init Zn (ppm) 0-6"	0.4	Fert. Rate (lbs/ac) P2O5	40
Longitude		Init Mn (ppm) 0-6"	1.7	Fert. Rate (lbs/ac) K2O	25
Soil Series	Hillon CLm	Init Cu (ppm) 0-6"	0.7	Herbicide App. Date	n/a
pH 0-6"	8	Init Fe (ppm) 0-6"	4.6	Herbicide Product	n/a
Org.Matter (%) 0-6"	0.9	CEC 0-6"	21.8	Herbicide Rate (/ac)	n/a
Init N (lbs/ac) 0-6"	28	Init PAW (in.) 0-6"	0.43	Precip (in.) Plnt'g-Harvest	8.99
Init N (lbs/ac) 6-24"	270	Init PAW (in.) 6-24"	1.73	Precip (>.1) Plnt'g-Harvest	7.86
Init N (lbs/ac) 24-36"	76	Init PAW (in.) 24-36"	1.04	Harvest Date	8/14
Init N (lbs/ac) 36-48"	44	Init PAW (in.) 36-48"	1.53	Rooting Depth (in.)	40"
Init P (ppm) Olsen 0-6"	16	Cropping System	NT-ChmFlw	Post PAW (in.) 0-6"	0.43
Init K (ppm) 0-6"	223	Planting Date	9/28	Post PAW (in.) 6-24"	1.73
Init S (ppm) 0-24"	69	Planting Depth (in.)	1.50	Post PAW (in.) 24-36"	1.04
Init Na (MEQ/100g) 0-6"	0.08	Moist Soil Depth @Plnt'g	48+	Post PAW (in.) 36-48"	1.53
SaltHaz (MMHOS/cm) 0-6"	0.92	Dry Surf Soil (in.) @Plnt'g	pndg	Precip (>.1) Hvst-Post	0.00

TABLE 2. Ten-Year Yield Summary on Selected Entries from Dryland Intrastate Winter Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 1995-2004.

2/ VARIETY or SELECTION		No. of YEARS TESTED	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	AVE. for YEARS TESTED	% of CHECK YIELD 3/	10-YR COMP. AVE. YIELD 4/
BZ9W96-919	PRYOR	5						71.0	23.6	39.0	37.7	73.1	48.9	117.1	57.0
PI619098	WAHOO	3								39.8	28.5	72.8	47.0	113.4	55.2
MT00159	PROMONTORY/JUDITH	3								39.6	30.2	70.3	46.7	112.6	54.8
S94-4	CDC FALCON	5						66.0	26.4	38.9	30.4	69.3	46.2	110.7	53.8
MT0097	MT0097	3								41.3	29.8	66.3	45.8	110.5	53.7
GM10002	NUHORIZON (hard white)	5						61.0	24.3	36.9	36.0	71.4	45.9	110.0	53.5
GM10001	NUFRONTIER (hard white)	5						63.5	22.7	35.3	34.5	69.7	45.1	108.2	52.6
MT9426	PAUL	6					70.0	65.4	21.8	33.6	33.3	65.0	48.2	108.0	52.5
ABOVE	ABOVE	3								28.1	34.5	70.6	44.4	107.1	52.1
PI555458	PROMONTORY (+)	10	81.1	52.9	43.2	44.3	78.3	59.1	22.9	31.6	30.1	66.2	51.0	104.8	51.0
MTW9441	NUSKY (hard white)	6					61.1	59.7	25.3	42.5	28.1	63.4	46.7	104.6	50.9
MTS0031	GENOU	3								32.6	28.7	68.7	43.3	104.5	50.8
CI 17860	NEELEY	10	82.0	47.7	42.6	49.7	64.6	69.0	19.9	34.4	30.3	65.6	50.6	104.0	50.6
QT 542	HYBRITECH 542 (P)	10	69.8	51.2	56.6	52.1	60.7	64.7	23.1	39.0	25.9	60.5	50.4	103.5	50.4
RH78W 296	BIGHORN (P+)	10	77.5	49.4	48.8	44.8	76.7	58.0	18.4	32.5	30.2	66.1	50.2	103.3	50.2
CI 17879	ROCKY (P+)	10	69.7	48.6	50.0	47.0	57.4	62.7	25.3	35.6	27.6	74.7	49.9	102.5	49.9
PI584526	JUDITH	10	78.9	46.6	47.1	48.1	64.0	62.2	23.7	33.1	30.8	62.4	49.7	102.1	49.7
MT9432	BIGSKY	9		50.2	45.8	50.8	65.6	54.5	21.1	32.5	29.6	64.3	46.0	101.8	49.5
PI517194	TIBER	10	79.4	47.4	46.8	45.1	59.1	61.8	22.5	32.1	26.8	65.5	48.6	100.0	48.6
PI599336	MORGAN	9		48.4	49.4	44.9	59.5	56.3	20.7	37.5	26.8	58.1	44.6	98.7	48.0
ND9257	JERRY	4					49.1			42.9	25.5	60.6	44.5	97.0	47.2
UT94415	GOLDEN SPIKE	5						59.1	17.8	33.2	27.3	64.1	40.3	96.5	47.0
PI593889	RAMPART (sawfly resistant)	10	67.1	38.6	45.2	50.0	51.9	55.8	22.4	36.8	32.4	63.2	46.3	95.2	46.3
PI593890	MCGUIRE	8	62.5	42.5	39.1	41.3	63.8	57.2	19.4	34.5			45.0	91.4	44.5
PI593891	VANGUARD (sawfly resistant)	10	59.0	38.9	48.2	42.4	48.7	52.4	22.5	30.8	30.8	61.7	43.5	89.5	43.5
CI 17735	NORSTAR	10	66.6	44.9	42.5	53.4	36.0	49.0	20.9	40.2	19.0	47.4	42.0	86.4	42.0
MEANS (For Entries Listed)			72.2	46.7	46.6	47.2	60.4	60.4	22.2	35.9	29.8	65.6			50.2
April-July Precip. (in.)			12.83	5.57	6.20	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.74		
Tot. Annual Precip. (in.)			16.36	10.20	12.06	12.17	14.30	10.27	8.83	13.29	11.54	14.43	12.35		
Soil NO3(lbs) to SD@Pltg			70	130	132	92	Pndg	Pndg	Pndg	110	150	418	157		
SD (Smping Depth inches)			48	48	48	48	Pndg	Pndg	Pndg	48	48	48	48		
Fertilizer Applied (# N)			(# N) 70	70	70	70	70	70	70	70	70	70	70		
			(# P ₂ O ₅) 40	40	40	40	40	40	40	40	40	40	40		
			(# K ₂ O) 25	25	25	25	25	25	25	25	25	25	25		

Long-term check variety is Tiber

1/ See MCES Bulletin 1098 or the Plant Sciences & Plant Pathology website at <http://plantsciences.montana.edu/> for evaluation of other important variety performance characteristics to include protein, quality, disease resistance, etc. before making cultivar selection decisions.

2/ P = Private Variety, + = Protected Variety

3/ Percent of Tiber yield or test weight for the same data years as those in which a given entry was tested.

4/ 10-Yr Comparable Average = (x/y) * z where x = average yield or test weight of a given entry for years tested, y = average yield or test weight for Tiber for the same years, and z = 10-Yr average yield or test weight for the check variety Tiber.

TABLE 3. Ten-Year Test Weight Summary on Selected Entries from Dryland Intrastate Winter Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 1995-2004.

2/ VARIETY or SELECTION		No. of YEARS TESTED	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	AVE. for YEARS TESTED	% of CHECK TEST WT 3/	10-YR COMP. AVE. TEST WT 4/
GM10002	NUHORIZON (hard white)	5						63.9	60.7	60.2	62.4	62.9	62.0	102.0	63.3
GM10001	NUFRONTIER (hard white)	5						63.6	61.3	57.7	62.1	62.3	61.4	101.0	62.6
PI555458	PROMONTORY (+)	10	63.6	62.8	64.4	64.2	64.0	62.6	61.0	59.9	61.4	60.9	62.5	100.7	62.5
CI 17879	ROCKY (P+)	10	62.7	62.4	64.8	64.6	62.1	62.4	60.0	59.7	62.1	62.4	62.3	100.5	62.3
MT9432	BIGSKY	9		62.8	63.9	64.2	62.7	61.3	60.8	60.9	61.3	58.5	61.8	100.0	62.0
PI517194	TIBER	10	64.0	62.8	63.5	64.4	61.5	61.3	60.7	60.7	61.7	59.7	62.0	100.0	62.0
MTW9441	NUSKY (hard white)	6					61.3	61.8	60.3	60.0	60.7	59.3	60.6	99.4	61.7
RH78W296	BIGHORN (P+)	10	62.4	62.2	63.8	63.6	62.5	62.2	60.0	58.3	61.9	59.5	61.6	99.4	61.6
QT 542	HYBRITECH 542 (P)	10	63.0	62.0	63.1	64.1	62.2	61.2	58.9	59.0	60.1	59.5	61.3	98.8	61.3
CI 17735	NORSTAR	10	63.8	62.0	61.9	63.8	59.4	61.0	59.8	59.6	61.9	59.1	61.2	98.7	61.2
BZ9W96-919	PRYOR	5						61.8	59.1	58.8	61.9	58.4	60.0	98.6	61.2
PI593890	MCGUIRE	8	62.3	62.3	62.9	63.2	62.2	61.5	58.5	59.1			61.5	98.6	61.2
MTS0031	GENOU	3								58.4	61.3	59.7	59.8	98.5	61.1
PI599336	MORGAN	9		61.9	63.4	63.4	61.5	60.8	59.4	57.9	60.3	58.7	60.8	98.4	61.0
PI593891	VANGUARD (sawfly resistant)	10	63.1	61.5	63.6	63.7	60.6	60.1	58.6	58.1	61.0	60.0	61.0	98.4	61.0
PI593889	RAMPART (sawfly resistant)	10	62.9	61.6	63.5	64.2	60.8	59.8	58.3	58.8	61.1	59.1	61.0	98.4	61.0
ABOVE	ABOVE	3								57.9	59.6	61.6	59.7	98.3	61.0
CI 17860	NEELEY	10	63.0	61.4	62.5	63.1	62.5	61.7	58.2	57.0	61.2	59.2	61.0	98.3	61.0
MT0097	MT0097	3								58.7	61.8	58.3	59.6	98.2	60.9
ND9257	JERRY	4					61.1			57.7	60.5	58.8	59.5	97.8	60.6
S94-4	CDC FALCON	5						61.5	57.4	57.7	59.8	60.7	59.4	97.7	60.6
PI619098	WAHOO	3								57.5	60.6	59.5	59.2	97.5	60.5
MT9426	PAUL	6					61.5	60.6	57.8	57.9	61.2	57.0	59.3	97.4	60.4
MT00159	PROMONTORY/JUDITH	3								59.2	60.0	57.9	59.0	97.3	60.3
PI584526	JUDITH	10	62.2	60.8	62.2	62.5	61.7	59.8	58.0	57.9	58.6	57.5	60.1	96.9	60.1
UT94415	GOLDEN SPIKE	5						61.2	58.9	55.6	60.7	57.2	58.7	96.5	59.9
MEANS (For Entries Listed)			63.0	62.0	63.3	63.8	61.7	61.5	59.4	58.6	61.0	59.5			61.3
April-July Precip. (in.)			12.83	5.57	6.20	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.74		
Tot. Annual Precip. (in.)			16.36	10.20	12.06	12.17	14.30	10.27	8.83	13.29	11.54	14.43	12.35		
Soil NO3(lbs) to SD@ Pltg			70	130	132	92	Pndg	Pndg	Pndg	110	150	418	157		
SD (Smping Depth inches)			48	48	48	48	Pndg	Pndg	Pndg	48	48	48	48		
Fertilizer Applied (# N)			(# N)	70	70	70	70	70	70	70	70	70	70		
			(# P ₂ O ₅)	40	40	40	40	40	40	40	40	40	40		
			(# K ₂ O)	25	25	25	25	25	25	25	25	25	25		

Long-term check variety is Tiber

1/ See MCES Bulletin 1098 or the Plant Sciences & Plant Pathology website at <http://plantsciences.montana.edu/> for evaluation of other important variety performance characteristics to include protein, quality, disease resistance, etc. before making cultivar selection decisions.

2/ P = Private Variety, + = Protected Variety

3/ Percent of Tiber yield or test weight for the same data years as those in which a given entry was tested.

4/ 10-Yr Comparable Average = (x/y) * z where x = average yield or test weight of a given entry for years tested, y = average yield or test weight for Tiber for the same years, and z = 10-Yr average yield or test weight for the check variety Tiber.

TABLE 4. Advanced Yield Spring Wheat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions. Northern Agricultural Research Center. Havre, Montana. 2004. (Exp# 04-3102-SW)

ID	CULTIVAR or SELECTION	STAND %	1/ HEAD DATE	PLNT HT Inches	2/ YIELD Bu/Ac	MOISTURE %	TEST WT Lbs/Bu	3/ PROTEIN %	4/ SAWFLY %
BZ999592	MCNEAL/906R	84.7	181.3	30.9	54.9	10.0	60.5	16.3	8.3
BZ996472	BZ992-634/GOLDEN86	74.0	180.0	27.9	52.6	10.0	63.0	15.1	11.7
MT 0245	MT9433/ND695	89.9	182.7	31.3	51.8	9.8	58.6	15.7	26.7
MT 0339	MT9715/SCHOLAR	85.1	181.0	30.0	51.3	9.1	57.3	16.0	31.7
MT 0260	MT9653/ND695	91.0	183.7	31.6	50.7	9.8	59.1	15.8	16.7
PI632252	OUTLOOK	94.4	182.0	30.0	49.4	9.3	57.6	15.7	30.0
BZ996434	BORDER/CONAN	85.8	180.0	30.7	48.6	9.5	60.1	16.2	20.0
MT 0220	MCNEAL/ND695	88.5	180.3	28.4	48.1	8.9	58.0	16.5	40.0
MT 0249	ND695/MT9433	86.8	180.3	29.0	46.8	9.4	58.6	16.8	20.0
MT 0247	MT9433/ND695	94.1	180.0	30.0	45.5	9.9	61.7	16.3	26.7
MT 0261	ND695/MT9653	92.4	181.7	32.7	44.7	9.4	59.3	16.2	20.0
BZ992322	HANK	76.7	179.0	28.1	44.7	9.4	58.3	16.6	18.3
MT 0266	ND695/MT9755	86.8	179.0	29.1	44.5	9.2	55.6	16.6	25.0
PI607557	SCHOLAR	88.2	182.0	30.2	44.1	9.4	58.7	17.2	33.3
MT 0306	MCNEAL/MT9719	91.6	180.0	31.1	43.8	9.8	62.3	16.8	21.7
AGRIPRO5	01II 27-20-1 CL	90.3	180.0	32.0	43.7	9.5	60.5	17.1	31.7
MT 0351	MT9806/SD3345	86.8	181.7	32.1	43.2	8.9	59.0	16.6	25.0
MT 9929	CHOTEAU	85.8	181.7	29.2	43.2	9.5	59.5	16.5	18.3
MT 0205	MCNEAL/MT8808	87.8	182.0	28.1	42.9	9.5	57.9	15.6	23.3
MT 0228	MCNEAL/WA7802	82.3	181.7	29.4	42.7	8.8	57.7	16.4	38.3
BZ992588	CONAN	91.3	180.0	30.2	42.7	9.5	59.9	16.4	15.0
MT 0325	MT9609/SCHOLAR	87.9	181.7	29.9	42.5	9.6	61.1	15.9	30.0
MT 0354	MT9806/SD3345	90.3	180.7	27.7	42.5	9.1	56.0	16.4	25.0
MT 0338	MT9609/MT9808	89.9	183.0	30.8	42.4	9.1	56.0	16.8	23.3
WB 926	WESTBRED 926	89.6	179.3	28.4	42.0	9.2	57.8	16.9	10.0
MT 0313	MT9609/SCHOLAR	92.0	182.3	30.8	42.0	9.8	59.3	16.1	30.0
MTHW0002	MTHW9520/MTHW9427	80.2	180.7	28.3	42.0	9.2	56.0	16.0	36.7
CI 13596	FORTUNA	87.8	180.3	34.3	42.0	9.8	59.2	15.8	20.0
MT 0336	MT9609/MT9806	88.9	182.3	28.4	41.9	9.5	58.7	15.6	25.0
MT 0234	ERNEST/ND695	88.2	179.7	29.5	41.7	9.3	59.3	16.1	21.7
ALSEN	ALSEN	81.6	182.0	30.6	41.6	9.6	58.5	17.0	21.7
MT 0345	MT9754/SCHOLAR	92.0	182.0	27.9	41.3	9.2	58.5	17.3	20.0
MT 0307	MCNEAL/MT9719	88.2	182.0	28.8	41.1	9.6	60.6	16.1	10.0
AGRIPRO4	01II 27-2-2 CL	91.3	180.0	30.8	41.1	9.6	60.5	16.1	30.0
MTHW0202	ID377S/MTHW9701	84.7	176.0	28.6	40.9	9.3	59.9	16.1	35.0
MT 0326	MT9609/SCHOLAR	88.9	181.3	31.4	40.8	9.9	59.9	16.2	20.0
MTHW0362	BZ991408/MTHW9711	83.3	180.7	28.5	40.7	9.5	59.7	15.5	28.3
PI549275	HI-LINE	87.5	180.3	27.9	40.7	8.9	56.9	17.2	18.3
AGRIPRO3	FREYR	80.6	181.7	30.8	40.6	9.7	61.0	15.1	28.3
MT 0342	MT9719/MT9715	89.9	182.0	29.6	40.4	9.3	59.8	15.8	33.3
PI574642	MCNEAL	93.8	182.0	29.1	40.4	8.8	57.0	17.2	25.0
ND 695	REEDER	92.0	182.0	31.1	40.3	9.3	58.9	16.6	23.3
MT 0318	MT9609/SCHOLAR	88.9	181.3	29.6	40.1	9.5	59.3	16.2	30.0

TABLE 4. Advanced Yield Spring Wheat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions. Northern Agricultural Research Center. Havre, Montana. 2004. (Exp# 04-3102-SW)

ID	CULTIVAR or SELECTION	STAND %	1/ HEAD DATE	PLNT HT Inches	2/ YIELD Bu/Ac	MOISTURE %	TEST WT Lbs/Bu	3/ PROTEIN %	4/ SAWFLY %
MTHW0366	BZ991408/ID508	82.7	181.3	29.0	40.0	9.7	61.6	15.5	23.3
AGRIPRO1	NORPRO	87.5	182.0	28.5	39.9	9.3	58.4	15.8	21.7
MT 0315	MT9609/SCHOLAR	92.4	182.0	31.6	39.8	9.5	58.2	17.1	18.3
PI592761	ERNEST	87.2	182.0	32.8	39.5	9.1	59.4	16.9	20.0
MT 0319	MT9609/SCHOLAR	87.5	181.3	30.6	39.4	9.4	59.5	16.2	28.3
MT 0352	MT9806/SD3345	89.9	182.0	29.4	39.3	9.5	58.9	17.0	33.3
AGRIPRO2	KNUDSON	94.4	182.0	29.5	38.8	9.4	59.0	16.9	30.0
AGRIPRO6	01II 27-24-1 CL	92.0	180.7	30.6	38.7	9.2	60.0	17.1	30.0
MT 0317	MT9609/SCHOLAR	94.8	182.7	32.1	38.5	9.3	58.7	17.1	21.7
PI612605	MTHW9420	83.7	180.0	28.6	38.5	8.9	54.4	16.6	18.3
PI527682	AMIDON	90.6	183.0	31.1	38.2	9.2	59.1	15.9	26.7
MT 0311	SCHOLAR/MT9754	87.1	180.7	30.5	37.3	9.7	59.3	16.9	23.3
MT 0305	MCNEAL/MT9719	93.8	182.7	27.6	36.5	9.1	58.6	17.8	31.7
MTHW0357	MTHW9420/BZ991408	78.1	180.7	29.3	36.5	9.0	58.2	16.4	28.3
MT 0255	MT9755/WA7802	91.0	182.0	31.4	35.8	8.7	55.8	16.7	36.7
PI619086	EXPLORER	87.5	180.0	28.6	35.8	9.1	58.5	16.3	28.3
CI 17430	NEWANA	85.4	184.3	27.8	35.7	9.2	58.8	15.4	31.7
MTHW0204	MTHW9427/MT9410	92.0	181.3	29.5	35.6	9.4	56.3	15.2	20.0
CI 10003	THATCHER	83.7	184.0	36.6	35.2	9.0	53.8	18.0	30.0
MT 0346	MT9754/SCHOLAR	89.3	183.7	30.6	34.5	8.7	54.5	17.9	31.7
MTHW0361	BZ991408/MTHW9420	85.1	180.0	28.2	33.6	9.5	58.7	16.3	21.7
EXPERIMENTAL MEANS		87.9	181.3	30.0	41.8	9.4	58.7	16.4	25.0
LSD (0.05)		8.8	1.4	1.9	7.1	0.6	1.8	.	13.1
C.V.2: (S of MEAN / MEAN)*100		3.6	0.3	2.3	6.1	2.2	1.1	.	18.8

1/ No. of Days from January 1 (181 = June 29)

2/ Volumetric yields are based on plot weights adjusted to uniform 12 percent grain moisture and 60 lbs/bu as the standard test weight for wheat.

3/ Protein values are adjusted to 12 percent grain moisture.

4/ Sawfly rating is reported as the percentage of cut stems.

Site Resource & Management Data: (Exp# 04-3102-SW)						
Field	A-7-2		SaltHaz(MMHOS/cm)6-24"	0.68	2" Soil Temp (°F) @ Plnt'g	62
Quarter	NW		Soil Texture 0-6"	CL-	4" Soil Temp (°F) @ Plnt'g	60
Section	33		Soil Texture 6-24"	CL	Fertilizer Formulation	Gran.Blend
Township	32N		Soil Texture 24-36"	CL	Fertilizer Placement	Bnd at Plntg
Range	15E		Soil Texture 36-48"	SCL-	Fert. Rate (lbs/ac) N	70
Latitude			Init Zn (ppm) 0-6"	0.4	Fert. Rate (lbs/ac) P2O5	40
Longitude			Init Mn (ppm) 0-6"	1.6	Fert. Rate (lbs/ac) K2O	25
Soil Series	Frnt Btnn CLm		Init Cu (ppm) 0-6"	1	Herbicide App. Date	6/14
pH 0-6"	8		Init Fe (ppm) 0-6"	5	Herbicide Product	Bronate Adv.
Org.Matter (%) 0-6"	0.9		CEC 0-6"	21.8	Herbicide Rate (/ac)	20 oz
Init N (lbs/ac) 0-6"	12		Init PAW (in.) 0-6"	0.77	Precip (in.) Plnt'g-Harvest	8.80
Init N (lbs/ac) 6-24"	30		Init PAW (in.) 6-24"	2.95	Precip (>.1) Plnt'g-Harvest	7.05
Init N (lbs/ac) 24-36"	20		Init PAW (in.) 24-36"	1.54	Harvest Date	8/20
Init N (lbs/ac) 36-48"	24		Init PAW (in.) 36-48"	1.46	Rooting Depth (in.)	31"
Init P (ppm) Olsen 0-6"	22		Cropping System	NT-ChmFlw	Post PAW (in.) 0-6"	0.37
Init K (ppm) 0-6"	270		Planting Date	4/20	Post PAW (in.) 6-24"	1.69
Init S (ppm) 0-24"	32		Planting Depth (in.)	1.5	Post PAW (in.) 24-36"	1.58
Init Na (MEQ/100g) 0-6"	0.1		Moist Soil Depth @Plnt'g	48+	Post PAW (in.) 36-48"	2.10
SaltHaz (MMHOS/cm) 0-6"	0.52		Dry Surf Soil (in.) @Plnt'g	0.25	Precip (>.1) Hvst-Post	0.00

TABLE 5. Ten-Year Yield Summary on Selected Entries from Dryland Advanced Spring Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 1995-2004.

2/ VARIETY or SELECTION		No. of YEARS TESTED	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	AVE. for YEARS TESTED	% of CHECK YIELD 3/	10-YR COMP. AVE. YIELD 4/	
MT9874	OUTLOOK	6					44.1	41.0	22.9	43.4	15.7	49.4	36.1	137.4	42.9	
PI574642	McNEAL	10	73.0	36.6	54.4	44.9	49.2	40.2	18.9	36.5	13.2	40.4	40.7	130.5	40.7	
ND695	REEDER	6					49.1	43.3	22.5	34.9	13.0	40.3	33.9	128.9	40.2	
BZ996472	BZ992-634/GOLDEN86	6					44.7	37.8	18.6	37.7	11.5	52.6	33.8	128.8	40.2	
PI607557	SCHOLAR	10	69.5	38.5	52.1	45.5	42.2	38.5	21.0	36.8	11.0	44.1	39.9	127.9	39.9	
CI17430	NEWANA	10	69.2	39.0	52.1	39.3	45.9	35.6	21.5	38.5	12.1	35.7	38.9	124.6	38.9	
BZ992588	CONAN	9	65.9	36.7	48.0		47.8	36.0	20.4	33.7	13.9	42.7	38.4	123.9	38.7	
PI549275	HI-LINE	10	63.9	45.8	45.0	40.0	45.3	37.6	19.7	36.0	11.1	40.7	38.5	123.4	38.5	
BZ992322	HANK	5						41.7	20.5	36.4	11.0	44.7	30.9	123.3	38.5	
BZ996434	BORDER/CONAN	4							20.0	35.4	10.3	48.6	28.6	120.6	37.6	
PI592761	ERNEST (+)	10	64.3	35.7	47.1	35.7	39.9	37.3	19.6	36.1	12.7	39.5	36.8	117.9	36.8	
MT9929	CHOTEAU (++)	5							34.2	19.3	35.7	12.7	43.2	29.0	115.9	36.2
PI527682	AMIDON	10	70.5	35.3	47.6	47.3	4.0	35.9	22.2	40.6	11.2	38.2	35.3	113.1	35.3	
PI619086	EXPLORER	4							19.8	36.7	13.1	35.8	26.4	111.3	34.7	
WB926	WB 926 (P)	10	51.9	33.9	46.1	33.7	41.9	38.0	18.7	30.4	9.8	42.0	34.6	111.0	34.6	
AGRIPRO1	NORPRO	3								35.5	8.9	39.9	28.1	110.5	34.5	
MTHW0002	MTHW9520/MTHW9427	5						33.0	18.3	31.7	11.0	42.0	27.2	108.6	33.9	
CI13596	FORTUNA	10	46.3	33.6	44.0	40.1	35.9	35.9	16.7	29.9	9.5	42.0	33.4	107.0	33.4	
PI612605	MTHW9420	6					35.6	38.7	16.4	30.8	7.9	38.5	28.0	106.6	33.2	
AGRIPRO2	KNUDSON	3								31.6	7.6	38.8	26.0	102.2	31.9	
CI10003	THATCHER	10	49.2	31.0	40.5	33.6	32.5	30.4	18.4	34.2	6.9	35.2	31.2	100.0	31.2	
MEANS (For Entries Listed)			62.4	36.6	47.7	40.0	39.9	37.4	19.8	35.4	11.1	41.6			36.7	
April-July Precip. (in.)			12.42	5.17	5.65	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.60			
Tot. Annual Precip. (in.)			16.36	10.20	12.06	12.17	14.30	10.27	8.83	13.29	11.54	14.43	12.35			
Soil N (lbs) to SD @ PLtg			72	130	116	140	Pndg	Pndg	Pndg	98	44	86	98			
SD (Smping Depth inches)			48	48	48	48	Pndg	Pndg	48	48	48	48	48			
Fertilizer Applied																
(# N)			70	70	70	70	70	70	70	70	70	70	70			
(# P2O5)			40	40	40	40	40	40	40	40	40	40	40			
(# K2O)			25	25	25	25	25	25	25	25	25	25	25			

Long-term check variety is Thatcher

1/ See MCES Bulletin 1093 or the Plant Sciences & Plant Pathology website at <http://plantsciences.montana.edu/> for evaluation of other important variety performance characteristics to include protein, quality, disease resistance, etc. before making cultivar selection decisions.

2/ P = Private Variety, + = Protected Variety, ++ = PVP Title 5 Pending

3/ Percent of Thatcher yield or test weight for the same data years as those in which a given entry was tested.

4/ 10-Yr Comparable Average = (x/y) * z where x = average yield or test weight of a given entry for years tested, y = average yield or test weight for Thatcher for the same years, and z = 10-Yr average yield or test weight for the check variety Thatcher.

TABLE 6. Ten-Year Test Weight Summary on Selected Entries from Dryland Advanced Spring Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 1995-2004.

2/ VARIETY or SELECTION		No. of YEARS TESTED	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	AVE. for YEARS TESTED	% of CHECK TEST WT 3/	10-YR COMP. AVE. TEST WT 4/
BZ996472	BZ992-634/GOLDEN86	6					60.5	60.6	60.0	61.2	60.3	63.0	60.9	111.6	62.7
AGRIPRO1	NORPRO	3								61.8	57.1	58.4	59.1	109.2	61.3
AGRIPRO2	KNUDSON	3								60.5	57.4	59.0	59.0	109.0	61.2
BZ996434	BORDER/CONAN	4							57.4	60.9	57.7	60.1	59.0	108.4	60.9
ND695	REEDER	6					58.6	60.1	58.2	60.6	57.4	58.9	59.0	108.0	60.7
PI607557	SCHOLAR	10	63.0	61.8	61.3	62.3	58.1	60.7	59.4	61.3	57.3	58.7	60.4	107.5	60.4
PI619086	EXPLORER	4							58.0	60.3	56.8	58.5	58.4	107.2	60.2
BZ992588	CONAN	9	62.3	61.6	61.5		58.2	59.4	59.5	61.1	56.6	59.9	60.0	107.1	60.2
MT9929	CHOTEAU (++)	5						58.5	57.0	60.2	57.8	59.5	58.6	107.0	60.1
PI592761	ERNEST (+)	10	62.0	62.0	61.4	61.9	57.4	59.7	58.0	60.0	56.8	59.4	59.9	106.5	59.9
CI13596	FORTUNA	10	62.0	62.2	60.4	62.6	57.9	59.2	57.2	59.2	56.8	59.2	59.7	106.2	59.7
PI527682	AMIDON	10	61.9	61.2	61.0	60.9	57.0	59.1	57.7	59.8	57.1	59.1	59.5	105.9	59.5
BZ992322	HANK	5						57.3	57.7	59.6	56.5	58.3	57.9	105.7	59.4
CI17430	NEWANA	10	61.1	61.0	60.2	60.5	55.0	57.7	59.6	62.0	56.2	58.8	59.2	105.4	59.2
WB926	WB 926 (P)	10	59.8	61.3	59.0	60.9	56.6	56.5	58.3	60.3	56.7	57.8	58.7	104.5	58.7
MT9874	OUTLOOK	6					56.6	56.9	56.9	59.9	54.3	57.6	57.0	104.5	58.7
PI549275	HI-LINE	10	61.2	60.3	59.5	61.6	57.1	56.0	56.4	60.7	56.6	56.9	58.6	104.4	58.6
PI612605	MTHW9420	6					54.5	57.1	57.0	60.6	55.8	54.4	56.6	103.6	58.2
MTHW0002	MTHW9520/MTHW9427	5						55.3	56.7	59.8	55.5	56.0	56.7	103.5	58.2
PI574642	McNEAL	10	62.3	57.8	58.7	59.1	56.6	57.4	57.7	60.1	54.0	57.0	58.1	103.4	58.1
CI10003	THATCHER	10	60.7	58.2	57.7	57.5	53.8	55.9	55.5	58.3	50.3	53.8	56.2	100.0	56.2
MEANS (For Entries Listed)			61.6	60.8	60.1	60.8	57.0	58.1	57.8	60.4	56.4	58.3			#REF!
April-July Precip. (in.)			12.42	5.17	5.65	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.60		
Tot. Annual Precip. (in.)			16.36	10.20	12.06	12.17	14.30	10.27	8.83	13.29	11.54	14.43	12.35		
Soil N (lbs) to SD @ PLtg			72	130	116	140	Pndg	Pndg	Pndg	98	44	86	98		
SD (Smping Depth inches)			48	48	48	48	Pndg	Pndg	48	48	48	48	48		
Fertilizer Applied															
			(# N)	70	70	70	70	70	70	70	70	70	70	70	70
			(# P2O5)	40	40	40	40	40	40	40	40	40	40	40	40
			(# K2O)	25	25	25	25	25	25	25	25	25	25	25	25

Long-term check variety is Thatcher

1/ See MCES Bulletin 1093 or the Plant Sciences & Plant Pathology website at <http://plantsciences.montana.edu/> for evaluation of other important variety performance characteristics to include protein, quality, disease resistance, etc. before making cultivar selection decisions.

2/ P = Private Variety, + = Protected Variety, ++ = PVP Title 5 Pending

3/ Percent of Thatcher yield or test weight for the same data years as those in which a given entry was tested.

4/ 10-Yr Comparable Average = (x/y) * z where x = average yield or test weight of a given entry for years tested, y = average yield or test weight for Thatcher for the same years, and z = 10-Yr average yield or test weight for the check variety Thatcher.

TABLE 7. Montana Spring Durum Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions. Northern Agricultural Research Center. Havre, Montana. 2004. (Exp# 04-9802-SW)

ID	CULTIVAR or SELECTION	STAND %	1/ HEAD DATE	PLNT HT Inches	2/ YIELD Bu/Ac	MOISTURE %	TEST WT Lbs/Bu	3/ PROTEIN %	4/ SAWFLY %
CANKYLE	KYLE	81.2	185.0	37.5	49.9	9.6	59.7	16.6	15.0
YU894-75	WPB YU 894-75	86.5	180.7	28.3	47.7	9.0	58.8	16.3	6.7
D901442	LEBSOCK	84.0	182.3	31.7	46.7	9.7	61.4	15.7	16.7
ACAVONLE	AC AVONLEA	89.6	182.3	35.7	44.7	9.2	60.2	16.9	3.3
D901313	MOUNTRAIL	93.8	183.7	34.0	44.3	9.4	59.2	16.0	6.7
D89135	MAIER	88.9	182.7	32.4	43.5	9.4	60.0	17.3	11.7
PI478289	MONROE	85.1	180.0	33.9	43.4	9.4	59.8	16.5	15.0
D91080	PLAZA	93.0	183.7	28.3	41.8	9.4	59.7	14.9	3.3
DILSE	DILSE	94.5	185.0	32.5	41.4	9.2	59.7	17.1	13.3
D87130	BEN	92.3	181.3	36.4	41.3	9.5	60.8	16.7	11.7
PI574642	MCNEAL	96.2	181.3	31.3	41.1	9.2	60.3	15.4	28.3
PIERCE	PIERCE	86.8	183.0	34.3	40.6	9.4	60.8	15.8	10.0
NDMUNICH	MUNICH	86.8	182.7	30.6	40.4	9.3	59.4	16.7	11.7
CI 17789	VIC	94.8	182.7	35.4	35.7	9.5	61.5	15.8	8.3
EXPERIMENTAL MEANS		89.5	182.6	33.0	43.0	9.4	60.1	16.3	11.6
LSD (0.05)		14.8	1.5	2.3	6.4	0.2	1.0	.	9.6
C.V.2: (S of MEAN / MEAN)*100		5.7	0.3	2.4	5.1	0.9	0.6	.	28.7

1/ No. of Days from January 1 (183 = July 1)

2/ Volumetric yields are based on plot weights adjusted to uniform 12 percent grain moisture and 60 lbs/bu as the standard test weight for durum

3/ Protein values are adjusted to 12 percent grain moisture.

4/ Sawfly rating is reported as the percentage of cut stems.

Site Resource & Management Data: (Exp# 04-9802-SW)					
Field	A-7-2	SaltHaz(MMHOS/cm)6-24"	0.68	2" Soil Temp (°F) @ Plnt'g	63
Quarter	NW	Soil Texture 0-6"	CL-	4" Soil Temp (°F) @ Plnt'g	60
Section	33	Soil Texture 6-24"	CL	Fertilizer Formulation	Gran.Blend
Township	32N	Soil Texture 24-36"	CL	Fertilizer Placement	Bnd at Plntg
Range	15E	Soil Texture 36-48"	SCL-	Fert. Rate (lbs/ac) N	70
Latitude		Init Zn (ppm) 0-6"	0.4	Fert. Rate (lbs/ac) P2O5	40
Longitude		Init Mn (ppm) 0-6"	1.6	Fert. Rate (lbs/ac) K2O	25
Soil Series	Scobey CLm	Init Cu (ppm) 0-6"	1	Herbicide App. Date	6/14
pH 0-6"	8	Init Fe (ppm) 0-6"	5	Herbicide Product	Bronate Adv.
Org.Matter (%) 0-6"	0.9	CEC 0-6"	21.8	Herbicide Rate (/ac)	20 oz
Init N (lbs/ac) 0-6"	12	Init PAW (in.) 0-6"	0.77	Precip (in.) Plnt'g-Harvest	8.97
Init N (lbs/ac) 6-24"	30	Init PAW (in.) 6-24"	2.95	Precip (>.1) Plnt'g-Harvest	7.19
Init N (lbs/ac) 24-36"	20	Init PAW (in.) 24-36"	1.54	Harvest Date	8/21
Init N (lbs/ac) 36-48"	24	Init PAW (in.) 36-48"	1.46	Rooting Depth (in.)	33"
Init P (ppm) Olsen 0-6"	22	Cropping System	NT-ChmFlw	Post PAW (in.) 0-6"	0.40
Init K (ppm) 0-6"	270	Planting Date	4/20	Post PAW (in.) 6-24"	1.82
Init S (ppm) 0-24"	32	Planting Depth (in.)	1.5	Post PAW (in.) 24-36"	1.17
Init Na (MEQ/100g) 0-6"	0.1	Moist Soil Depth @Plnt'g	48+	Post PAW (in.) 36-48"	1.60
SaltHaz (MMHOS/cm) 0-6"	0.52	Dry Surf Soil (in.) @Plnt'g	0.25	Precip (>.1) Hvst-Post	0.00

TABLE 8. Nine-Year Yield Summary on Selected Entries from Dryland Montana Spring Durum Nursery. Northern Agricultural Research Center. Havre, Montana. 1996-2004.

VARIETY or SELECTION	No. of YEARS TESTED	1/ YIELD (Bushels Per Acre)									AVE. for YEARS TESTED	% of CHECK YIELD 2/	9-YR COMP. AVE. YIELD 3/	
		1996	1997	1998	1999	2000	2001	2002	2003	2004				
PI574642	McNEAL (HRSW check)	8		48.0	39.6	43.8	39.4	18.9	39.1	15.6	41.1	35.7	115.1	36.2
YU894-75	WPB YU 894-75	4						18.9	39.2	9.1	47.7	28.7	113.8	35.8
ACAVONLE	AC AVONLEA	4						21.4	40.3	8.1	44.7	28.6	113.4	35.6
D901313	MOUNTRAIL	6				41.4	34.6	18.9	39.5	11.6	44.3	31.7	111.5	35.0
WPBLAKER	LAKER	8	38.4	43.5	33.5	45.7	37.1	22.2	39.9	12.7		34.1	110.5	34.7
D89135	MAIER	6				45.2	34.3	15.7	39.0	10.0	43.5	31.3	110.0	34.6
D91080	PLAZA	5					33.8	19.1	38.0	12.4	41.8	29.0	108.1	34.0
CANKYLE	KYLE	9	38.1	43.5	32.4	39.6	31.4	20.5	36.7	12.5	49.9	33.8	107.7	33.8
D901442	LEB SOCK	5					35.1	16.3	35.2	10.5	46.7	28.8	107.2	33.7
97DU2	UTOPIA	7		49.2	31.5	49.0	35.4	12.1	37.6	11.1		32.3	106.4	33.4
NDMUNICH	MUNICH	9	35.2	43.1	32.7	42.6	36.0	17.0	38.7	10.6	40.4	32.9	104.8	32.9
CANPLENTY	PLENTY	5	39.1	48.9	33.1	35.8	32.9					38.0	104.4	32.8
PI510696	RENVILLE	8	35.3	45.2	35.1	38.0	32.9	21.5	37.8	11.6		32.2	104.2	32.7
DT433	MEDORA	7	34.7	43.5	34.7	40.1	34.8	16.5	39.5			34.8	103.2	32.4
NDBELZER	BELZER	3			35.8	39.5	31.3					35.5	102.6	32.2
D87130	BEN	9	35.8	43.7	36.5	38.9	33.8	15.8	35.9	8.4	41.3	32.2	102.6	32.2
PI478289	MONROE	9	35.5	45.5	28.8	40.0	35.0	16.9	33.7	7.1	43.4	31.8	101.1	31.8
PI476211	LLOYD	4	33.0	41.6	36.1	38.9						37.4	100.7	31.6
CI15892	WARD	7	34.4	43.2	32.4	37.1	32.8	18.3	37.9			33.7	100.0	31.4
CI17789	VIC	9	34.8	43.1	34.3	36.4	33.2	19.1	35.3	10.9	35.7	31.4	100.0	31.4
CI17282	CROSBY	3	32.6		33.6	37.9						34.7	98.7	31.0
DT380	SCEPTRE	5			33.2	40.4	30.2	16.1	31.2			30.2	95.5	30.0
MEANS (For Entries Listed)			35.6	44.8	34.0	40.6	34.1	18.1	37.5	10.8	43.4			33.2
April-July Precip. (in.)			5.17	5.65	8.78	8.57	6.01	4.81	8.87	7.07	8.64		7.06	
Tot. Annual Precip. (in.)			10.20	12.06	12.17	14.30	10.27	8.83	13.29	11.54	14.43		11.90	
Soil NO3 (lbs.) to SD at Planting			130	116	140	Pndg	Pndg	Pndg	98	46	86		103	
SD (Sampling Depth in Inches)			48	48	48	Pndg	Pndg	48	48	48	48		48	
Fertilizer Applied		(# N)	70	70	70	70	70	70	70	70	70		70	
		(# P ₂ O ₅)	40	40	40	40	40	40	40	40	40		40	
		(# K ₂ O)	25	25	25	25	25	25	25	25	25		25	

Long-term check variety is Vic.

1/ See MCES Bulletin 1093 or the Plant Sciences & Plant Pathology website at <http://plantsciences.montana.edu/> for evaluation of other important variety performance characteristics to include protein, quality, disease resistance, etc. before making cultivar selection decisions.

2/ Percent of Vic yield or test weight for the same data years as those in which a given entry was tested.

3/ 9-Yr Comparable Average = (x/y) * z where x = average yield or test weight of a given entry for years tested, y = average yield or test weight for Vic for the same years, and z = 9-Yr average yield or test weight for the check variety Vic.

TABLE 9. Nine-Year Test Weight Summary on Selected Entries from Dryland Montana Spring Durum Nursery. Northern Agricultural Research Center. Havre, Montana. 1996-2004.

VARIETY or SELECTION	No. of YEARS TESTED	1/TEST WEIGHT (Pounds Per Bushel)									AVE. for YEARS TESTED	% of CHECK TEST WT 2/	9-YR COMP. AVE. TEST WT 3/
		1996	1997	1998	1999	2000	2001	2002	2003	2004			
WPBLAKER LAKER	8	62.0	61.3	59.8	60.4	60.2	62.4	62.3	58.3		60.8	101.1	61.0
D87130 BEN	9	62.1	61.3	60.9	59.5	60.0	60.6	62.3	57.5	60.8	60.6	100.4	60.6
D901442 LEBSOCK	5					60.4	61.2	62.3	58.2	61.4	60.7	100.4	60.5
DT433 MEDORA	7	61.7	61.3	60.7	58.3	60.7	59.7	61.3			60.5	100.1	60.4
CI17789 VIC	9	60.1	60.1	60.3	60.0	60.5	60.2	62.2	58.1	61.5	60.3	100.0	60.3
ACAVONLE AC AVONLEA	4						61.2	62.8	56.8	60.2	60.3	99.6	60.1
PI510696 RENVILLE	8	60.5	59.8	60.4	59.7	59.4	60.3	61.7	57.4		59.9	99.6	60.1
CANKYLE KYLE	9	60.7	60.2	58.7	59.2	59.1	61.7	62.9	57.7	59.7	60.0	99.5	60.0
CI15892 WARD	7	61.8	61.2	60.1	55.5	59.8	60.3	61.6			60.0	99.3	59.9
97DU2 UTOPIA	7		58.5	61.0	59.1	59.2	60.2	61.6	57.9		59.6	99.1	59.8
D91080 PLAZA	5					59.3	61.5	62.0	57.1	59.7	59.9	99.0	59.7
YU894-75 WPB YU 894-75	4						60.9	61.4	58.1	58.8	59.8	98.9	59.6
D89135 MAIER	6				59.9	59.1	60.8	62.1	56.6	60.0	59.8	98.8	59.6
PI478289 MONROE	9	61.3	59.4	60.3	58.6	59.9	59.2	61.0	56.7	59.8	59.6	98.8	59.6
CI17282 CROSBY	3	59.0		59.8	58.7						59.2	98.4	59.4
CANPLENTY PLENTY	5	60.4	59.6	57.9	58.5	59.4					59.2	98.3	59.3
PI476211 LLOYD	4	61.7	59.1	57.6	57.9						59.1	98.2	59.3
D901313 MOUNTRAIL	6				58.8	58.8	60.1	61.7	56.7	59.2	59.2	97.9	59.1
NDMUNICH MUNICH	9	60.2	59.8	58.8	58.1	59.1	59.6	60.4	55.4	59.4	59.0	97.8	59.0
DT380 SCEPTRE	5			57.6	58.2	58.9	59.2	60.7			58.9	97.2	58.6
NDBELZER BELZER	3			58.5	58.6	57.3					58.1	96.5	58.2
PI574642 McNEAL (HRSW check)	8		58.4	57.4	57.3	57.0	58.8	60.2	55.2	60.3	58.1	96.3	58.1
MEANS (For Entries Listed)		61.0	60.0	59.4	58.7	59.3	60.4	61.7	57.2	60.1			59.6
April-July Precip. (in.)		5.17	5.65	8.78	8.57	6.01	4.81	8.87	7.07	8.64		7.06	
Tot. Annual Precip. (in.)		10.20	12.06	12.17	14.30	10.27	8.83	13.29	11.54	14.43		11.90	
Soil NO3 (lbs.) to SD at Planting		130	116	140	Pndg	Pndg	Pndg	98	46	86		103	
SD (Sampling Depth in Inches)		48	48	48	Pndg	Pndg	48	48	48	48		48	
Fertilizer Applied	(# N)	70	70	70	70	70	70	70	70	70		70	
	(# P ₂ O ₅)	40	40	40	40	40	40	40	40	40		40	
	(# K ₂ O)	25	25	25	25	25	25	25	25	25		25	

Long-term check variety is Vic.

1/ See MCES Bulletin 1093 or the Plant Sciences & Plant Pathology website at <http://plantsciences.montana.edu/> for evaluation of other important variety performance characteristics to include protein, quality, disease resistance, etc. before making cultivar selection decisions.

2/ Percent of Vic yield or test weight for the same data years as those in which a given entry was tested.

3/ 9-Yr Comparable Average = (x/y) * z where x = average yield or test weight of a given entry for years tested, y = average yield or test weight for Vic for the same years, and z = 9-Yr average yield or test weight for the check variety Vic.

TABLE 10. Nine-Year Yield Summary on Selected Entries from Dryland Intrastate Spring Barley Nursery. Northern Agricultural Research Center. Havre, Montana. 1995-2004.

2/ VARIETY or SELECTION	No. of YEARS TESTED	1/ YIELD (Bushels Per Acre)										AVE. for YEARS TESTED	% of CHECK YIELD 3/	9-YR COMP. AVE. YIELD 4/
		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004			
MT960099	Manley/Baronesse	6			70.6	80.6	64.5	30.9	61.5	15.3		53.9	110.1	60.6
PI568246	BARONESSE (P+)	9	87.4	52.0	83.8	70.6	85.3	62.5	32.2	57.2	14.2	60.6	110.1	60.6
MT970229	MT890021/Stark	5					81.6	60.6	32.1	56.3	14.4	49.0	108.8	59.9
MT960228	Stark/Baronesse	5					80.6	63.5	28.1	59.7	11.2	48.6	108.0	59.4
MT990106	Apex/H1851195	3							33.8	55.3	13.3	34.1	106.9	58.8
MT981210	MT910150/Stark	4						73.4	31.2	52.9	14.5	43.0	106.6	58.7
BZ594-19	WPB XENA	5			85.0	77.3	65.2		29.0		10.7	53.4	106.2	58.4
MT981212	MT910150/Stark	4						66.8	34.6	56.3	11.4	42.3	104.8	57.7
MT960101	Manley/Baronesse	5					79.2	56.8	26.8	57.6	13.7	46.8	104.0	57.2
MT970155	MT886610/MT140523	4						60.6	37.1	57.3	11.4	41.6	103.1	56.7
PI610264	VALIER	7			80.5	71.4	71.0	62.4	30.2	54.3	11.6	54.5	103.0	56.7
MT910189	ND 7293/Bearpaw	9	79.2	62.0	79.5	72.5	57.8	65.8	29.5	51.9	11.0	56.6	102.8	56.6
MT970148	MT861596/ND 11120	5					73.0	59.3	32.3	50.8	15.2	46.1	102.4	56.4
MT950186	HAXBY (+)	7			89.1	77.0	65.9	66.0	28.9	54.0	12.0	56.1	102.0	56.1
MT970026	Baronesse/MT860756	5					64.8	62.8	32.5	60.1	9.3	45.9	101.9	56.1
PI605472	GARNET	3							32.9	50.5	13.6	32.4	101.3	55.7
MT981030	Baronesse/MT910160	4						62.9	33.0	53.5	13.9	40.8	101.2	55.7
MT981004	Baronesse/H2860224	4						61.4	35.0	52.8	13.4	40.7	100.8	55.5
PI491534	GALLATIN	9	65.5	59.6	76.4	68.5	63.8	65.5	31.6	52.9	11.3	55.0	100.0	55.0
MT981091	MT851195/MT140523	4						66.2	27.2	54.2	13.7	40.3	99.9	55.0
ND13299	CONLON	3							30.1	54.6	10.8	31.8	99.6	54.8
MT981238	ND112311/Lewis	4						63.6	32.2	49.3	11.8	39.2	97.3	53.5
MT981006	Baronesse/H2860224	4						58.7	28.2	54.7	13.5	38.8	96.1	52.9
SK76333	HARRINGTON	9	63.9	52.5	75.7	58.6	71.8	53.5	31.2	54.5	12.8	52.7	95.8	52.7
MT970116	Klages/Baronesse	4						55.5	29.4	53.1	12.1	37.5	93.0	51.2
2B914947	MERIT	8		49.5	67.1	60.0	71.9	54.9	28.5	49.0	12.1	49.1	89.3	49.1
6B932978	LEGACY	4						53.8	21.9	51.8	7.9	33.9	83.9	46.2
MEANS (For Entries Listed)			74.0	55.1	79.7	69.6	72.3	61.8	30.8	54.5	12.5			55.8
April-July Precip. (in.)			5.59	11.80	5.18	5.65	8.78	8.57	6.01	4.81	8.87	8.64	7.39	7.07
Tot. Annual Precip. (in.)			10.23	16.36	10.20	12.06	12.17	14.30	10.27	8.83	13.29	14.43	12.21	11.54
Soil NO3(lbs) to SD@Pltg			212	54	130	114	172	Pndg	Pndg	Pndg	102	120	129	76
SD (Smping Depth inches)			48	48	48	48	48	Pndg	Pndg	48	48	48	48	48
Fertilizer Applied (# N)			70	70	70	70	70	70	70	70	70	70	70	70
		(# P2O5)	40	40	40	40	40	40	40	40	40	40	40	40
		(# K2O)	0	25	25	25	25	25	25	25	25	25	25	25

Long-term check variety is Gallatin

1/ See MCES Bulletin 1094 or the Plant Sciences & Plant Pathology website at <http://plantsciences.montana.edu/> for evaluation of other important variety performance characteristics to include protein, quality, disease resistance, etc. before making cultivar selection decisions.

2/ P = Private Variety, + = Protected Variety

3/ Nursery not harvested due to field cleanup combining error.

4/ Percent of Gallatin yield or test weight for the same data years as those in which a given entry was tested.

5/ 9-Yr Comparable Average = (x/y) * z where x = average yield or test weight of a given entry for years tested, y = average yield or test weight for Gallatin for the same years, and z = 9-Yr average yield or test weight for the check variety Gallatin.

TABLE 11. Nine-Year Test Weight Summary on Selected Entries from Dryland Intrastate Spring Barley Nursery. Northern Agricultural Research Center. Havre, Montana. 1995-2004.

2/ VARIETY or SELECTION	No. of YEARS TESTED	1/ TEST WEIGHT (Pounds Per Bushel)										AVE. for YEARS TESTED	% of CHECK TEST WT 4/	9-YR COMP. AVE. TEST WT 5/
		1995	1996	1997	1998	1999	2000	2001	2002	2003	3/ 2004			
MT950186 HAXBY (+)	7			55.4	52.1	53.1	51.9	49.4	50.4	49.1		51.6	104.0	51.8
MT970116 Klages/Baronesse	4						50.8	49.7	50.5	48.8		49.9	103.3	51.5
MT981212 MT910150/Stark	4						51.5	50.0	49.2	48.5		49.8	103.0	51.3
MT981238 ND112311/Lewis	4						51.4	49.4	49.2	47.5		49.4	102.1	50.9
MT981091 MT851195/MT140523	4						50.8	48.2	49.7	48.5		49.3	102.0	50.8
MT970229 MT890021/Stark	5					52.3	50.6	49.2	50.2	47.4		49.9	102.0	50.8
MT981210 MT910150/Stark	4						50.1	49.0	49.4	48.3		49.2	101.8	50.7
MT970026 Baronesse/MT860756	5					52.0	50.0	49.8	49.7	47.4		49.8	101.6	50.6
ND13299 CONLON	3							48.1	48.5	49.7		48.8	101.3	50.5
MT910189 ND 7293/Bearpaw	9	48.6	51.2	50.1	53.6	52.5	50.2	48.2	49.7	49.3		50.4	101.1	50.4
PI610264 VALIER	7			54.6	49.5	51.4	49.0	48.5	49.8	46.8		49.9	100.6	50.1
PI491534 GALLATIN	9	52.3	48.7	53.5	49.1	51.5	49.0	48.1	48.5	47.7		49.8	100.0	49.8
MT981030 Baronesse/MT910160	4						48.9	49.1	48.8	46.5		48.3	100.0	49.8
MT960228 Stark/Baronesse	5					51.4	49.3	47.7	49.6	46.3		48.9	99.8	49.7
MT970155 MT886610/MT140523	4						48.6	49.0	48.7	46.4		48.2	99.7	49.7
BZ594-19 WPB XENA	5			53.0	48.9	51.3		48.4		45.8		49.5	99.0	49.3
MT960101 Manley/Baronesse	5					49.0	47.3	48.6	49.1	47.1		48.2	98.5	49.1
MT990106 Apex/H1851195	3							46.5	48.2	47.4		47.4	98.5	49.1
MT970148 MT861596/ND 11120	5					50.9	47.9	46.5	47.1	47.8		48.0	98.1	48.9
PI568246 BARONESSE (P+)	9	49.3	47.2	52.8	47.0	51.2	47.6	48.1	48.9	46.0		48.7	97.7	48.7
MT981004 Baronesse/H2860224	4						47.5	47.0	48.3	45.8		47.2	97.6	48.6
MT960099 Manley/Baronesse	6				46.5	49.1	47.6	47.3	48.8	46.2		47.6	97.1	48.4
MT981006 Baronesse/H2860224	4						46.8	47.4	47.8	45.7		46.9	97.1	48.4
PI605472 GARNET	3							46.7	48.0	45.2		46.7	97.0	48.3
SK76333 HARRINGTON	9	49.9	46.5	50.7	46.0	49.1	46.8	46.2	48.4	45.5		47.7	95.7	47.7
2B914947 MERIT	8		43.4	49.1	43.6	49.0	46.8	46.6	47.3	44.4		46.3	93.4	46.6
6B932978 LEGACY	4						43.4	44.7	45.2	45.9		44.8	92.7	46.2
MEANS (For Entries Listed)		50.0	47.4	52.4	48.5	51.0	48.9	48.1	48.8	47.1				49.5
April-July Precip. (in.)		5.59	11.80	5.18	5.65	8.78	8.57	6.01	4.81	8.87	8.64	7.39		
Tot. Annual Precip. (in.)		10.23	16.36	10.20	12.06	12.17	14.30	10.27	8.83	13.29	14.43	12.21		
Soil NO3(lbs) to SD@Pltg		212	54	130	114	172	Pndg	Pndg	Pndg	102	120	131		
SD (Smping Depth inches)		48	48	48	48	48	Pndg	Pndg	48	48	48	48		
Fertilizer Applied (# N)	(# N)	70	70	70	70	70	70	70	70	70	70	70		
	(# P ₂ O ₅)	40	40	40	40	40	40	40	40	40	40	40		
	(# K ₂ O)	0	25	25	25	25	25	25	25	25	25	25		

Long-term check variety is Gallatin

1/ See MCES Bulletin 1094 or the Plant Sciences & Plant Pathology website at <http://plantsciences.montana.edu/> for evaluation of other important variety performance characteristics to include protein, quality, disease resistance, etc. before making cultivar selection decisions.

2/ P = Private Variety, + = Protected Variety

3/ Nursery not harvested due to field cleanup combining error.

4/ Percent of Gallatin yield or test weight for the same data years as those in which a given entry was tested.

5/ 9-Yr Comparable Average = (x/y) * z where x = average yield or test weight of a given entry for years tested, y = average yield or test weight for Gallatin for the same years, and z = 9-Yr average yield or test weight for the check variety Gallatin.

TABLE 12. Montana Spring Oat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions. Northern Agricultural Research Center. Havre, Montana. 2004. (Exp# 04-0402-OA)

ID	CULTIVAR or SELECTION	STAND %	1/ HEAD DATE	PLNT HT Inches	2/ YIELD Bu/Ac	MOISTURE %	TEST WT Lbs/Bu	3/ PROTEIN %
ABSP14-6	83Ab3119/Monida	99.0	186.7	31.8	83.9	6.2	31.6	14.5
81Ab5792	RIO GRANDE	100.0	186.0	30.2	83.5	5.8	29.3	14.7
90Ab1322	MAVERICK	100.0	188.0	26.4	77.7	6.1	28.4	15.6
OT351	CDC PACER	99.7	188.3	33.4	77.4	5.9	29.9	14.0
ABSP19-9	83Ab3083/Monida	100.0	189.7	31.0	76.2	5.9	29.6	15.1
ND930122	KILLDEER	100.0	186.7	31.1	75.5	6.0	32.7	14.1
96AB8597	Otana/87Ab4983	100.0	190.0	30.6	73.9	6.3	30.0	15.0
CI483126	MONIDA	100.0	190.0	34.0	73.9	6.1	28.6	15.0
87AB5632	Monida/75Ab861	100.0	188.0	31.0	73.0	6.2	29.8	14.8
ABSP 9-2	MONICO	100.0	187.3	29.2	72.3	6.2	31.4	16.1
98AB6491	90Ab1322/Ogle	99.3	188.7	30.1	70.9	6.2	31.4	16.7
CI 9252	OTANA	99.7	187.0	37.4	69.6	6.2	31.9	15.6
PI583735	CELSIA	98.3	190.3	33.9	69.5	5.3	28.3	14.8
OT373	CDC DANCER	99.3	188.3	36.8	69.3	6.3	33.3	14.8
PI537436	AJAY	100.0	187.7	23.3	66.1	5.7	28.3	16.5
98AB6646	IAH61-3-3/90Ab1322	100.0	189.3	30.3	65.4	6.1	32.2	14.1
EXPERIMENTAL MEANS		99.7	188.3	31.3	73.6	6.0	30.4	15.1
LSD (0.05)		1.6	2.3	3.4	12.2	0.4	2.6	.
C.V.2: (S of MEAN / MEAN)*100		0.6	0.4	3.7	5.8	2.1	3.0	.

1/ No. of Days from January 1 (188 = July 6)

2/ Volumetric yields are based on plot weights adjusted to uniform 12 percent grain moisture and 32 lbs/bu as the standard test weight for oats.

3/ Protein values are reported on a 100% dry matter basis.

Site Resource & Management Data: (Exp# 04-0402-OA)			
Field	A-7-1	SaltHaz(MMHOS/cm)6-24"	0.68
Quarter	NW	Soil Texture 0-6"	CL
Section	33	Soil Texture 6-24"	CL
Township	32N	Soil Texture 24-36"	CL
Range	15E	Soil Texture 36-48"	CL
Latitude		Init Zn (ppm) 0-6"	0.6
Longitude		Init Mn (ppm) 0-6"	4.1
Soil Series	Joplin CLm	Init Cu (ppm) 0-6"	1.1
pH 0-6"	6.9	Init Fe (ppm) 0-6"	10.9
Org.Matter (%) 0-6"	1.2	CEC 0-6"	21.8
Init N (lbs/ac) 0-6"	4	Init PAW (in.) 0-6"	0.74
Init N (lbs/ac) 6-24"	36	Init PAW (in.) 6-24"	2.97
Init N (lbs/ac) 24-36"	56	Init PAW (in.) 24-36"	1.80
Init N (lbs/ac) 36-48"	88	Init PAW (in.) 36-48"	2.06
Init P (ppm) Olsen 0-6"	37	Cropping System	NT-ChmFlw
Init K (ppm) 0-6"	416	Planting Date	4/21
Init S (ppm) 0-24"	32	Planting Depth (in.)	1.5
Init Na (MEQ/100g) 0-6"	0.08	Moist Soil Depth @Plnt'g	48+
SaltHaz (MMHOS/cm) 0-6"	0.36	Dry Surf Soil (in.) @Plnt'g	0.25
		2" Soil Temp (°F) @ Plnt'g	68
		4" Soil Temp (°F) @ Plnt'g	60
		Fertilizer Formulation	Gran.Blend
		Fertilizer Placement	Bnd at Plntg
		Fert. Rate (lbs/ac) N	70
		Fert. Rate (lbs/ac) P2O5	40
		Fert. Rate (lbs/ac) K2O	25
		Herbicide App. Date	6/14
		Herbicide Product	Bronate Adv.
		Herbicide Rate (/ac)	20 oz
		Precip (in.) Plnt'g-Harvest	7.83
		Precip (>.1) Plnt'g-Harvest	6.80
		Harvest Date	8/14
		Rooting Depth (in.)	34"
		Post PAW (in.) 0-6"	0.42
		Post PAW (in.) 6-24"	1.66
		Post PAW (in.) 24-36"	1.56
		Post PAW (in.) 36-48"	2.11
		Precip (>.1) Hvst-Post	0.00

TABLE 13. Ten-Year Yield Summary on Selected Entries from Dryland Northwestern State Oat Nursery. Northern Agricultural Research Center. Havre, Montana. 1995-2004.

VARIETY or SELECTION	No. of YEARS TESTED	1/ YIELD (Bushels Per Acre)										AVE. for YEARS TESTED	% of CHECK YIELD 2/	10-YR COMP. AVE. YIELD 3/				
		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004							
87AB5632	MONIDA/75AB861	3									77.3	30.8	73.0	60.4	114.6	93.0		
ABSP14-6	83/AB3119/MONIDA	3											72.2	24.2	83.9	60.1	114.1	92.6
OT351	CDC PACER	4									37.5	72.3	24.3	77.4	52.9	110.3	89.5	
ABSP19-9	83/AB3083/MONIDA	6					109.5	77.0	36.7	69.3	27.9	76.2	66.1	106.0	86.0	86.0		
ND930122	KILLDEER	5						79.1	35.8	64.5	24.1	75.5	55.8	105.1	85.3	85.3		
81AB5792	RIO GRANDE	10	162.0	86.0	97.0	103.1	97.4	81.0	36.3	65.2	26.1	83.5	83.8	103.2	83.8	83.8		
CI483126	MONIDA	10	161.3	88.4	93.9	97.9	103.8	80.5	37.7	70.5	24.2	73.9	83.2	102.5	83.2	83.2		
90AB1322	MAVERICK	10	156.3	77.0	99.2	98.4	106.1	72.5	37.5	78.0	29.0	77.7	83.2	102.5	83.2	83.2		
87AB5125	OGLE/75AB861	5			94.1	95.6	114.9	74.3	33.4				82.5	100.0	81.2	81.2		
CI9252	OTANA	10	153.8	87.4	95.9	100.2	108.7	73.9	33.6	67.3	21.1	69.6	81.1	100.0	81.1	81.1		
ABSP9-2	MONICO	8			92.4	93.0	111.3	73.0	29.7	72.5	25.3	72.3	71.2	99.9	81.0	81.0		
OT373	CDC DANCER	3								68.1	19.9	69.3	52.4	99.6	80.8	80.8		
PI583735	CELSIA	8			97.8	89.4	103.4	75.5	32.1	66.1	26.7	69.5	70.1	98.3	79.7	79.7		
ND870258	WHITESTONE	8	147.0	88.3	98.1	99.1	94.3	75.6	36.6	63.1			87.8	97.4	79.0	79.0		
PI537463	AJAY	10	141.0	63.7	90.3	87.3	98.0	66.0	34.5	66.4	23.9	66.1	73.7	90.9	73.7	73.7		
ND862915	PAUL	4	106.7	60.7			68.9	45.2					70.4	66.4	53.9	53.9		
MEANS (For Entries Listed)			146.9	78.8	95.4	96.0	101.5	72.8	35.1	69.5	25.2	74.4				81.7		
April-July Precip. (in.)			5.59	11.80	4.57	5.46	8.79	8.57	6.01	4.81	8.87	8.64	7.31					
Tot. Annual Precip. (in.)			10.23	16.36	10.20	12.06	12.17	14.30	10.27	8.83	13.29	14.43	12.21					
Soil NO3 (lbs.) to SD at Planting			212	NA	130	114	172	Pndg	Pndg	Pndg	102	184	146					
SD (Sampling Depth in Inches)			48	0	48	48	48	Pndg	Pndg	Pndg	48	48	40					
Fertilizer Applied		(# N)	70	70	70	70	70	70	70	70	70	70	70					
		(# P ₂ O ₅)	40	40	40	40	40	40	40	40	40	40	40					
		(# K ₂ O)	0	25	25	25	25	25	25	25	25	25	25					

Long-term check variety is Otana.

1/ See MCES Bulletin 1095 or the Plant Sciences & Plant Pathology website at <http://plantsciences.montana.edu/> for evaluation of other important variety performance characteristics to include protein, quality, disease resistance, etc. before making cultivar selection decisions.

2/ Percent of Otana yield or test weight for the same data years as those in which a given entry was tested.

3/ 10-Yr Comparable Average = (x/y) * z where x = average yield or test weight of a given entry for years tested, y = average yield or test weight for Otana for the same years, and z = 10-Yr average yield or test weight for the check variety Otana.

TABLE 14. Ten-Year Test Weight Summary on Selected Entries from Dryland Northwestern State Oat Nursery. Northern Agricultural Research Center. Havre, Montana. 1995-2004.

VARIETY or SELECTION	No. of YEARS TESTED	1/ TEST WEIGHT (Pounds Per Bushel)										AVE. for YEARS TESTED	% of CHECK TEST WT 2/	10-YR COMP. AVE. TEST WT 3/	
		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004				
ND862915 PAUL	4	43.8	33.1			38.6	45.1						40.1	116.0	39.0
CI9252 OTANA	10	37.0	33.0	33.4	31.6	33.1	35.3	36.8	33.5	30.9	31.9		33.7	100.0	33.7
ABSP9-2 MONICO	8			33.8	30.8	33.5	34.6	37.0	34.6	30.2	31.4		33.2	99.8	33.6
OT373 CDC DANCER	3								35.5	27.3	33.3		32.0	99.7	33.6
ND930122 KILLDEER	5						35.7	35.0	33.0	30.3	32.7		33.3	99.0	33.3
ND870258 WHITESTONE	8	35.1	31.3	32.8	29.4	31.7	36.3	36.2	31.7				33.1	96.6	32.5
ABSP14-6 83/AB3119/MONIDA	3								32.5	28.9	31.6		31.0	96.4	32.5
81AB5792 RIO GRANDE	10	34.9	31.3	32.0	29.7	31.8	37.2	34.0	30.3	30.8	29.3		32.1	95.5	32.1
ABSP19-9 83/AB3083/MONIDA	6					30.8	35.7	37.0	31.6	27.3	29.6		32.0	95.3	32.1
87AB5632 MONIDA/75AB861	3								33.2	28.5	29.8		30.5	94.9	31.9
87AB5125 OGLE/75AB861	5			33.1	28.1	30.8	33.4	35.3					32.1	94.4	31.8
OT351 CDC PACER	4							36.0	32.8	26.5	29.9		31.3	94.0	31.6
PI537463 AJAY	10	33.5	31.1	33.1	28.4	30.6	32.9	35.5	31.0	29.2	28.3		31.4	93.2	31.4
CI483126 MONIDA	10	33.5	29.3	30.2	28.6	29.3	33.4	35.9	32.0	30.3	28.6		31.1	92.4	31.1
90AB1322 MAVERICK	10	33.9	29.2	30.6	27.6	29.1	33.1	36.1	31.9	28.1	28.4		30.8	91.5	30.8
PI583735 CELSIA	8			30.9	28.0	30.0	33.9	32.2	29.7	29.3	28.3		30.3	90.9	30.6
MEANS (For Entries Listed)		36.0	31.2	32.2	29.1	31.8	35.6	35.6	32.4	29.0	30.2				32.6
April-July Precip. (in.)		5.59	11.80	4.57	5.46	8.79	8.57	6.01	4.81	8.87	8.64		7.31		
Tot. Annual Precip. (in.)		10.23	16.36	10.20	12.06	12.17	14.30	10.27	8.83	13.29	14.43		12.21		
Soil NO3 (lbs.) to SD at Planting		212	NA	130	114	172	Pndg	Pndg	Pndg	102	184		146		
SD (Sampling Depth in Inches)		48	0	48	48	48	Pndg	Pndg	Pndg	48	48		40		
Fertilizer Applied	(# N)	70	70	70	70	70	70	70	70	70	70		70		
	(# P ₂ O ₅)	40	40	40	40	40	40	40	40	40	40		40		
	(# K ₂ O)	0	25	25	25	25	25	25	25	25	25		23		

Long-term check variety is Otana.

1/ See MCES Bulletin 1095 or the Plant Sciences & Plant Pathology website at <http://plantsciences.montana.edu/> for evaluation of other important variety performance characteristics to include protein, quality, disease resistance, etc. before making cultivar selection decisions.

2/ Percent of Otana yield or test weight for the same data years as those in which a given entry was tested.

3/ 10-Yr Comparable Average = (x/y) * z where x = average yield or test weight of a given entry for years tested, y = average yield or test weight for Otana for the same years, and z = 10-Yr average yield or test weight for the check variety Otana.

TABLE 15. Montana Safflower Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions at Northern Agricultural Research Center. Havre, Montana. 2004. (Exp# 04-7702-SA)

ENTRY	SOURCE	1/								
		STAND %	FLWR DATE	PLNT HT Inches	YIELD Lbs/Ac	MOIST %	TEST WT Lbs/Bu	OIL % 0%Mois.	OIL % 8%Mois.	Lbs OIL 8%Mois.
13	00B 1397	92.4	212.3	27.2	1210.3	4.5	40.9	38.0	35.0	423.3
12	00B1027	93.2	211.0	26.4	1288.8	4.4	41.3	47.6	43.8	564.1
14	00B6144	93.8	212.0	25.1	1133.2	4.5	41.2	45.8	42.1	477.3
15	00B6878	96.4	211.3	27.6	1210.1	4.5	42.1	38.7	35.6	431.0
16	00B7583	90.6	212.7	26.1	1395.3	4.7	41.3	39.5	36.4	507.2
17	00B7627	94.8	214.7	28.6	1265.8	4.7	42.2	38.6	35.5	449.4
18	00B8208	95.3	213.0	27.9	1343.8	4.4	42.3	36.6	33.6	452.8
19	01B 7114	94.5	214.3	25.8	977.8	4.4	39.0	42.5	39.1	382.2
20	02B 1638	94.3	212.7	26.9	1036.1	4.6	40.5	41.0	37.8	391.1
21	02B 6081	94.5	212.7	27.0	1175.4	4.5	41.0	38.8	35.7	419.9
22	02B 6381	95.3	213.7	25.8	1088.9	4.4	39.7	45.8	42.2	459.0
23	02B 6674	96.4	213.0	24.4	1084.7	4.5	39.3	43.2	39.7	430.4
24	02B 8599	95.9	212.3	26.3	1040.4	4.8	42.4	36.5	33.6	348.9
25	02B 8624	97.9	214.7	25.2	1025.5	4.7	40.7	35.5	32.7	334.5
1	91B2166	88.8	215.7	24.8	1059.8	4.6	40.3	40.4	37.1	393.9
3	95B3538	95.3	214.0	25.8	1113.7	4.8	43.5	37.8	34.8	388.3
4	95B7181	91.4	212.7	25.7	1046.5	4.9	43.2	37.1	34.2	357.8
5	95B7446	94.8	212.3	25.4	1229.7	4.9	44.3	37.8	34.8	427.6
7	96B 6170	97.4	212.7	26.7	1011.9	4.8	44.3	39.5	36.4	368.1
6	96B6054	95.3	212.0	24.7	993.1	4.4	40.8	42.5	39.1	388.6
8	97B1214	94.5	212.7	26.1	962.8	4.5	38.2	37.2	34.2	329.5
9	97B1286	94.3	211.3	24.9	1326.0	4.6	42.3	40.9	37.6	498.5
10	97B1744	92.7	211.3	26.2	1298.9	4.6	42.8	37.9	34.9	452.9
11	98B 1475	93.5	211.0	28.3	1206.0	4.3	41.1	39.1	35.9	433.5
29	CENTENNIAL	95.8	213.7	27.0	1130.6	4.4	41.3	43.6	40.1	453.4
36	ERLIN	92.2	212.0	24.7	1376.7	4.4	39.8	41.0	37.7	520.6
35	FINCH	92.7	212.3	29.0	1276.5	4.8	43.0	37.5	34.5	440.6
26	HYBRID 9022	94.0	213.3	25.9	1237.3	4.7	43.6	32.7	30.1	372.7
27	HYBRID 9048	93.8	214.3	26.7	1246.8	4.7	41.1	34.2	31.4	391.6
30	MONTOLA 2000	94.8	211.7	24.8	1113.7	4.3	39.5	40.5	37.3	415.2
31	MONTOLA 2001	94.0	212.3	25.3	1074.0	4.7	41.5	38.6	35.5	380.7
32	MONTOLA 2003	95.8	210.3	26.3	1110.2	4.5	40.8	38.0	34.9	387.8
33	MONTOLA 2004	95.1	210.7	26.5	1257.3	4.7	42.0	38.6	35.5	445.9
34	MORLIN	95.3	210.7	27.8	1359.6	4.8	43.7	40.3	37.1	504.0
2	NUTRASAFF (91B3842)	94.8	212.3	26.3	1048.9	4.3	40.0	48.8	44.9	470.8
28	S-541	95.3	214.0	28.2	1202.1	4.5	41.1	44.1	40.5	487.2
EXPERIMENTAL MEANS		94.4	212.6	26.3	1165.5	4.6	41.5	39.9	36.7	427.2
LSD (0.05)		5.1	3.4	3.4	284.5	0.5	3.7	0.7	0.7	103.6
C.V.2: (S of MEAN / MEAN)*100		1.9	0.6	4.6	8.7	4.0	3.2	0.7	0.7	8.6

1/ No. of Days from January 1 (212 = July 30)

Site Resource & Management Data: (Exp# 04-7702-SA)						
Field	An-3-5		SaltHaz(MMHOS/cm)6-24"	0.92	2" Soil Temp (°F) @ Plnt'g	pndg
Quarter	NW		Soil Texture 0-6"	CL	4" Soil Temp (°F) @ Plnt'g	pndg
Section	32		Soil Texture 6-24"	CL	Fertilizer Formulation	Gran.Blend
Township	32N		Soil Texture 24-36"	CL	Fertilizer Placement	Bnd at Plntg
Range	15E		Soil Texture 36-48"	CL	Fert. Rate (lbs/ac) N	70
Latitude			Init Zn (ppm) 0-6"	0.5	Fert. Rate (lbs/ac) P2O5	40
Longitude			Init Mn (ppm) 0-6"	9.6	Fert. Rate (lbs/ac) K2O	25
Soil Series			Init Cu (ppm) 0-6"	1.1	Herbicide App. Date	4/20
pH 0-6"	7.2		Init Fe (ppm) 0-6"	12.2	Herbicide Product	Treflan EC
Org.Matter (%) 0-6"	0.8		CEC 0-6"	21.8	Herbicide Rate (/ac)	24 oz
Init N (lbs/ac) 0-6"	26		Init PAW (in.) 0-6"	1.00	Precip (in.) Plnt'g-Harvest	0.81
Init N (lbs/ac) 6-24"	48		Init PAW (in.) 6-24"	3.58	Precip (>.1) Plnt'g-Harvest	0.81
Init N (lbs/ac) 24-36"	80		Init PAW (in.) 24-36"	2.64	Harvest Date	10/6
Init N (lbs/ac) 36-48"	60		Init PAW (in.) 36-48"	2.98	Rooting Depth (in.)	n/a
Init P (ppm) Olsen 0-6"	24		Cropping System	CT-MechFlw	Post PAW (in.) 0-6"	n/a
Init K (ppm) 0-6"	305		Planting Date	4/23	Post PAW (in.) 6-24"	n/a
Init S (ppm) 0-24"	39		Planting Depth (in.)	1.25	Post PAW (in.) 24-36"	n/a
Init Na (MEQ/100g) 0-6"	0.08		Moist Soil Depth @Plnt'g	48+	Post PAW (in.) 36-48"	n/a
SaltHaz (MMHOS/cm) 0-6"	0.64		Dry Surf Soil (in.) @Plnt'g	pndg	Precip (>.1) Hvst-Post	n/a

TABLE 16. Ten-Year Yield Summary on Selected Entries from Dryland Safflower Nursery. Northern Agricultural Research Center. Havre, Montana. 1995-2004.

VARIETY or SELECTION	No. of YEARS TESTED	YIELD (Lbs Per Acre)										AVE. for YEARS TESTED	% of CHECK YIELD 2/	10-YR COMP. AVE. YIELD 3/
		1995	1996	1997	1998	1999	2000	2001 1/	2002	2003	2004			
95B7446	99MTDSVT 218/108					1366.8	1496.5		1950.3	692.8	1229.7	1347.2	115.6	1274.7
97B1744	99DLI2 319/107						1941.9		1785.7	451.7	1298.9	1369.6	114.3	1260.5
S-518	Will 95FI			560.8	1044.3	1180.9	1569.6		1870.3	630.0		1142.6	111.0	1224.0
95B7181	99MTDSVT 228/107			597.2	1079.6	1245.5	1902.9		1541.5	676.7	1046.5	1155.7	110.7	1220.9
95B7174	99MTDSVT 222/106			540.2	1066.3	1176.9	1666.0		1691.4	688.2		1138.2	110.6	1219.2
00B8208	01DOL4 4126								1754.2	595.8	1343.8	1231.3	109.6	1209.1
MORLIN	011-2180	1898.6	942.0	466.6	937.3	1342.4	1313.2		1839.9	495.0	1359.6	1177.2	106.8	1177.2
95B3538	99MTDSVT 104				835.1	1160.7	1588.2		1832.6	480.4	1113.7	1168.5	105.7	1165.4
FINCH	Will 95FI	1727.0	1048.8	470.0	1033.4	1267.5	1516.3		1383.7	564.1	1276.5	1143.0	103.7	1143.0
S-541	Will	1821.7	918.4						1848.6	413.9	1202.1	1240.9	103.7	1143.0
97B1286	99MTDSVT 311/120					1347.7	1036.8		1791.8	447.3	1326.0	1189.9	102.1	1125.9
91B1126		1633.1	1004.1							514.5		1050.6	101.3	1117.2
MONT2000	Will	1997.6	972.1	452.3	920.1	1152.1	1163.5		1787.3	479.2	1113.7	1115.3	101.1	1115.3
CENTENNIAL	Will	1679.5	937.7	673.5	806.6	1034.6	1423.6		1744.7	493.5	1130.6	1102.7	100.0	1102.7
96B6527	99MTDSVT 317/111					1345.4	1108.3		1701.4	519.7		1168.7	99.5	1097.6
00B7627	01DOL4 4115								1562.6	497.2	1265.8	1108.5	98.7	1088.6
MONT2004	Will								1617.1	448.8	1257.3	1107.7	98.6	1087.8
00B6878	01DOL3 3110								1666.2	413.4	1210.1	1096.5	97.7	1076.8
MONT2001	991-122-6503	1533.7	922.7	315.9	854.2	1060.0	1571.6		1605.3	516.6	1074.0	1050.4	95.3	1050.4
MONT2003	Will WOMA2003			574.7	917.5	1311.4	758.9		1715.2	468.2	1110.2	979.5	93.8	1034.7
98B1475	99DLI2 316/130								1406.1	545.8	1206.0	1052.6	93.7	1033.7
00B1027	01DLI2 7107								1545.2	307.3	1288.8	1047.1	93.3	1028.3
91B2166	99DLI1 212/106			567.6	876.9				1552.8		1059.8	1014.3	93.2	1027.2
96B6731	99DOL2 125						1415.5		1473.8	513.7		1134.4	92.9	1024.8
96B6054	99MTDSVT 109					1027.1	1112.1		1503.9	468.2	993.1	1020.9	87.6	966.0
00B6144	01DOL2 2124								1293.2	452.4	1133.2	959.6	85.5	942.3
ERLIN	99MTDSVT 224/130	1784.9	925.0	421.2	565.1	882.3	759.0		1262.5	360.4	1376.7	926.3	84.0	926.3
NUTRASAF	91B3842			484.2	740.8	879.4	833.1		1585.8	211.2	1048.9	826.2	79.1	872.8
MEANS (For Entries Listed)		1759.5	958.9	510.3	898.2	1173.8	1343.2		1641.2	494.3	1194.1			1098.4
April-July Precip. (in.)		12.42	5.17	5.65	8.78	8.57	6.01		8.87	7.92	8.64	8.00		
Tot. Annual Precip. (in.)		16.36	10.20	12.06	12.17	14.30	10.27		13.29	12.66	14.43	12.86		
Soil N (lbs) to SD @ PLtg		210	88	248	N/A	N/A	N/A		N/A	78	214	168		
SD (Smplng Depth inches)		48	48	48	48	Pndg	Pndg		48	48	48	48		
Fertilizer Applied		(# N)	70	70	70	70	70		70	70	7	63		
		(# P2O5)	40	40	40	40	40		40	40	40	40		
		(# K2O)	25	25	25	25	25		25	25	25	25		

Long-term check variety is Centennial

1/ The 2001 nursery was destroyed in October due to extreme stand variability caused by severe drought conditions prior to planting and throughout the growing season.

2/ 10-Yr Comparable Average = (x/y) * z where x = average yield or oil of a given entry for years tested, y = average yield or oil for Centennial for the same years, and z = 10-Yr average yield or oil for the check variety Centennial.

3/ Percent of Centennial yield or oil for the same data years as those in which a given entry was tested.

TABLE 17. Ten-Year Percent Oil Summary on Selected Entries from Dryland Safflower Nursery. Northern Agricultural Research Center. Havre, Montana. 1995-2004.

VARIETY or SELECTION	No. of YEARS TESTED	Oil (%)										AVE. for YEARS TESTED	% of CHECK OIL 2/	10-YR COMP. AVE. OIL 3/
		1995	1996	1997	1998	1999 1/	2000	2001 1/	2002	2003	2004			
00B1027 01DLI2 7107	3								41.0	43.5	43.8	42.8	109.3	42.5
NUTRASAF 91B3842	6			40.5	36.9		41.6		39.4	46.2	44.9	41.6	106.7	41.5
00B6144 01DOL2 2124	3								37.9	43.3	42.1	41.1	105.1	40.9
S-541 Will	5	40.1	40.6						37.0	41.2	40.5	39.9	102.3	39.8
96B6054 99MTDSVT 109	4						38.5		38.3	42.5	39.1	39.6	101.1	39.4
CENTENNIAL Will	8	38.6	39.0	38.7	36.5		41.3		37.2	40.1	40.1	38.9	100.0	38.9
S-518 Will 95FI	5			39.3	37.5		42.5		33.2	38.9		38.3	98.8	38.5
MONT2000	8	39.0	40.2	36.6	36.2		37.5		32.7	38.7	37.3	37.3	95.8	37.3
97B1286 99MTDSVT 311/120	4						39.5		34.7	36.0	37.6	36.9	94.4	36.7
91B1126	3	36.0	37.5							37.2		36.9	94.0	36.6
ERLIN 99MTDSVT 224/130	8	37.3	35.9	34.5	34.6		39.7		34.7	36.4	37.7	36.4	93.4	36.4
MONT2001	8	37.8	38.7	34.4	35.9		35.7		33.1	39.1	35.5	36.3	93.2	36.3
00B6878 01DOL3 3110	3								33.5	39.7	35.6	36.3	92.7	36.1
MORLIN 011-2180	8	37.1	35.1	34.8	34.4		38.9		33.8	37.3	37.1	36.1	92.6	36.1
MONT2003	6			37.8	36.5		36.7		32.4	37.8	34.9	36.0	92.5	36.0
00B7627 01DOL4 4115	3								33.6	39.3	35.5	36.1	92.3	35.9
95B7174 99MTDSVT 222/106	4			37.9	34.2		35.3		32.3	38.9		35.7	92.2	35.9
96B6731 99DOL2 125	3						35.9		33.3	39.4		36.2	91.6	35.7
91B2166 99DLI1 212/106	4			34.1	33.0				34.3		37.1	34.6	90.9	35.4
96B6527 99MTDSVT 317/111	3						37.1		32.2	37.4		35.6	89.9	35.0
98B1475 99DLI2 316/130	3								33.1	36.1	35.9	35.0	89.5	34.8
95B7181 99MTDSVT 228/107	6			35.6	34.4		34.7		32.4	37.9	34.2	34.9	89.5	34.8
95B7446 99MTDSVT 218/108	4						35.5		31.7	37.8	34.8	35.0	89.3	34.8
MONT2004	3								32.0	37.2	35.5	34.9	89.2	34.7
95B3538 99MTDSVT 104	5				34.3		36.5		32.7	35.2	34.8	34.7	88.9	34.6
FINCH Will 95FI	8	34.7	34.7	33.3	33.6		37.5		32.4	34.5	34.5	34.4	88.4	34.4
97B1744 99DLI2 319/107	4						36.3		32.3	34.6	34.9	34.5	88.2	34.3
00B8208 01DOL4 4126	3								30.6	36.4	33.6	33.5	85.7	33.4
MEANS (For Entries Listed)		37.6	37.7	36.4	35.2	#DIV/0!	37.8		34.1	38.6	37.3			36.7
April-July Precip. (in.)		12.42	5.17	5.65	8.78	8.57	6.01		8.87	7.92	8.64	8.00		
Tot. Annual Precip. (in.)		16.36	10.20	12.06	12.17	14.30	10.27		13.29	12.66	14.43	12.86		
Soil N (lbs) to SD @ PLtg		210	88	248	N/A	N/A	N/A		N/A	78	214	168		
SD (Smplng Depth inches)		48	48	48	48	Pndg	Pndg		48	48	48	48		
Fertilizer Applied	(# N)	70	70	70	70	70	70		70	70	7	63		
	(# P2O5)	40	40	40	40	40	40		40	40	40	40		
	(# K2O)	25	25	25	25	25	25		25	25	25	25		

Long-term check variety is Centennial

1/ The 1999 oil results not reported. The 2001 nursery was destroyed in October due to extreme stand variability caused by severe drought conditions prior to planting and throughout the growing season.

2/ 10-Yr Comparable Average = (x/y) * z where x = average yield or oil of a given entry for years tested, y = average yield or oil for Centennial for the same years, and z = 10-Yr average yield or oil for the check variety Centennial.

3/ Percent of Centennial yield or oil for the same data years as those in which a given entry was tested.