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INTRODUCTION

Content:

This report is intended to serve as a popularized 2006 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 19 percent of NARC-Agronomy’s total research project effort on-station at Havre, and approximately 22 percent of the cereal and oilseed variety evaluation effort on-station. The remaining 78 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 91 years beginning in 1916.

Detailed data pertaining to multiple performance characters, along with associated climatic and management inputs are presented for 2006. 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.

2006 Data:

It should be noted that 2006 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 2006 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 2006)

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://plantsciences.montana.edu/crops>

Summary of climatic data by months for the 2005-2006 crop year (September to August) and averages for the period 1916-2006 at the Northern Agricultural Research Center, Havre, Montana.

Month Year	Sep 2005	Oct 2005	Nov 2005	Dec 2005	Jan 2006	Feb 2006	Mar 2006	Apr 2006	May 2006	Jun 2006	Jul 2006	Aug 2006	Crop Year
Precipitation (inches)													Total
Current Year	0.60	1.02	0.91	0.36	0.42	0.30	0.29	1.07	1.79	2.54	0.31	0.95	10.56
91-Year Average (1916 to 2005-06)	1.17	0.68	0.43	0.45	0.44	0.32	0.56	0.98	1.80	2.65	1.48	1.25	12.21
Mean Temperature (°F)													Average
Current Year	56.7	56.9	36.4	18.8	22.3	25.3	29.8	48.3	57.0	65.0	75.8	69.5	46.8
91-Year Average (1916 to 2005-06)	57.7	46.9	30.7	20.1	15.3	20.2	30.2	44.1	54.7	62.5	69.9	68.0	43.4

Last killing frost in spring*

2006 _____ May 5th
Ave. 1916-2006 _____ May 15th

First killing frost in fall*

2006 _____ October 8th
Ave. 1916-2006 _____ September 20th

Frost free period

2005 _____ 156 days
Ave. 1916-2006 _____ 129 days

Growing degree days (base 50)

May 1-Oct 31, 2006 _____ 2490.5
Ave. 1951-2006 _____ 2385.4

Maximum summer temperature _____ 100° on July 23 & 24 and August 8, 2006

Minimum winter temperature _____ -24° on December 7 & 8, 2005

*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. 2006. (Exp# 06-3502-WW)

ID	CULTIVAR or SELECTION	STAND %	1/ HEAD DATE	PLNT HT Inches	2/ YIELD Bu/Ac	MOISTURE %	TEST WT Lbs/Bu	3/ PROTEIN %	4/ SAWFLY %
PI619098	WAHOO	97.2	147.3	26.4	69.0	9.4	62.3	13.4	23.3
MT00159	YELLOWSTONE	96.9	152.7	28.9	65.6	9.1	62.2	13.4	18.3
MTW01133	NuWest/SD88191	98.6	150.0	22.9	64.8	9.2	63.1	13.6	11.7
MTCL0477	MT9409*2//IMMIBC303-9//Nee	98.6	151.7	28.5	62.5	9.5	63.0	12.2	40.0
MT02113	Karl 92/UT190	97.6	152.7	25.8	61.9	9.2	61.2	13.0	33.3
MT03176	KS93WGRC27/2*Judith	98.3	150.0	28.0	61.7	9.3	62.3	13.2	31.7
CI 17879	ROCKY	97.2	151.0	27.6	61.4	9.5	65.4	12.3	8.3
MT01148	Judith/Blizzard	98.3	152.7	26.4	60.8	9.0	62.2	13.8	48.3
MTR0441	Erhardt/Halt	100.0	150.0	23.3	60.3	9.1	63.8	13.4	41.7
HATCHER	HATCHER	97.9	147.7	24.9	59.9	9.5	63.7	12.1	20.0
S94-4	CDC FALCON	100.0	150.7	22.4	58.9	9.9	63.1	12.4	25.0
MT 9432	BIGSKY	96.9	152.0	27.3	58.6	8.9	63.1	14.0	50.0
PI586806	NUWEST	99.0	152.0	27.3	58.5	9.1	63.1	13.4	55.0
MT0419	Erhardt/KS92H21-4//Prongh	99.3	152.7	23.5	58.3	9.0	62.5	13.5	35.0
MT9426	PAUL	100.0	152.7	24.3	57.8	9.2	61.8	13.2	43.3
GOLDENSP	GOLDEN SPIKE	97.2	154.3	27.7	57.6	8.9	61.8	12.4	58.3
BZ96-919	PRYOR	97.9	152.7	24.0	57.5	9.4	62.1	13.2	20.0
BOND	BOND CL	98.6	146.3	24.8	57.3	9.4	63.8	11.8	16.7
AP50W	AP 50W	99.3	148.0	21.7	57.1	9.4	62.6	12.6	13.3
MTW9441	NUSKY	99.0	152.0	27.2	56.8	9.6	62.6	14.2	28.3
CDCBUTEO	CDC BUTEO	99.3	152.0	28.3	56.4	9.6	63.8	13.5	46.7
PI599336	MORGAN	96.5	154.0	26.5	56.0	9.1	61.9	13.3	36.7
ND9257	JERRY	99.3	152.0	26.6	55.9	9.5	62.1	13.0	18.3
PI517194	TIBER	97.9	152.0	27.1	55.9	9.3	62.6	13.8	26.7
MTS0031	GENOU	99.3	152.3	28.3	54.7	9.6	62.5	13.9	6.7
GM10001	NUFRONTIER	99.3	150.0	23.3	54.6	9.9	63.9	11.9	10.0
MTCL0316	NORRIS	99.0	149.0	24.2	54.0	9.5	63.5	12.4	8.3
ABOVE	ABOVE	97.6	146.0	21.8	53.9	9.1	62.9	11.7	16.7
PI555458	PROMONTORY	97.6	152.0	25.4	53.9	9.1	64.1	12.1	28.3
CI 17860	NEELEY	96.9	153.3	26.0	53.6	9.0	62.3	12.4	36.7
MT0403	N95L005/MT9608	98.6	148.0	27.7	53.5	9.5	62.6	13.1	25.0
MTCL0306	MTW9727//Fidel/NuWest	99.3	149.3	25.7	53.2	9.3	63.2	14.0	28.3
MT0495	MT9640/NB1133	96.5	152.0	26.3	53.0	9.1	62.3	14.4	18.3
WA7939	BAUERMEISTER	99.0	158.0	27.5	52.5	8.9	59.4	13.3	26.7
BZ96-788	LEDGER	99.3	152.3	24.7	52.5	9.2	63.2	12.0	36.7
MTS04120	L'Govskaya 167/Rampart	97.6	152.7	30.0	52.4	9.5	62.6	13.0	5.3
MTCL0486	Tiber*2//IMMIBC303-17	99.3	150.0	22.0	51.3	9.8	63.5	13.9	3.7
PI593891	VANGUARD	99.3	153.3	28.5	51.2	0.0	62.0	14.5	8.3
MTS04114	L'Govskaya 167/Rapart//MT	100.0	151.3	27.6	50.9	9.2	62.4	14.0	8.3
MT0423	Judith//Xiaoyang2*McNeal	99.3	153.0	27.3	50.6	9.6	62.3	13.2	35.0
JAGALENE	JAGALENE	97.9	148.7	26.5	50.6	9.4	64.2	13.4	23.3
WENDY	WENDY	98.6	145.3	21.7	50.4	9.8	63.0	13.7	11.7
PI613099	MILLENIUM	98.6	150.7	27.1	49.6	9.9	62.5	14.1	11.7

**TABLE 1. Intrastate Winter Wheat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland
Continued Fallow Conditions. Northern Agricultural Research Center. Havre, Montana. 2006.
(Exp# 06-3502-WW)**

ID	CULTIVAR or SELECTION	STAND %	1/	PLNT HT Inches	2/	MOISTURE TEST WT %	PROTEIN %	SAWFLY %	
			HEAD DATE		YIELD Bu/Ac				TEST WT Lbs/Bu
PI593889	RAMPART	99.3	153.0	26.6	49.0	9.2	62.5	14.3	2.3
BZ022060	BZ02-2060	98.6	152.3	22.2	48.3	9.9	62.0	13.9	15.0
MTCL0318	BYNUM	98.3	151.7	26.5	47.7	9.3	62.9	14.0	8.3
MTI01159	MT1159CL	98.6	152.3	23.6	46.0	8.6	61.6	12.6	10.0
WILLOWCR	WILLOW CREEK	100.0	159.0	34.0	45.6	8.3	60.3	15.2	56.7
WA7936	MDM	99.3	158.3	26.6	45.6	9.5	58.9	14.2	25.0
EXPERIMENTAL MEANS		98.5	151.5	26.0	55.3	9.3	62.6	13.3	24.8
LSD (0.05)		2.9	1.6	2.6	8.3	0.6	1.2	-	17.8
C.V.2: (S of MEAN / MEAN)*100		1.1	0.4	3.6	5.4	2.5	0.7	-	25.6

1/ No. of Days from January 1 (152 = June 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 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# 06-3502-WW)					
Field	A-3-4	Soil Texture 0-6"	CL+	2" Soil Temp (°F) @ Plnt'g	72
Quarter	NW	Soil Texture 6-24"	CL+	4" Soil Temp (°F) @ Plnt'g	69
Section	33	Soil Texture 24-36"	CL+	Fertilizer Formulation	Gran.Blend
Township	32N	Soil Texture 36-48"	CL+	Fertilizer Placement	Bnd at Plntg
Range	15E	Init Zn (ppm) 0-6"	0.5	Fert. Rate (lbs/ac) N	70
Latitude	N48 29.462'	Init Mn (ppm) 0-6"	4.3	Fert. Rate (lbs/ac) P2O5	40
Longitude	W109 47.835'	Init Cu (ppm) 0-6"	1.2	Fert. Rate (lbs/ac) K2O	25
Soil Series	Kevin CL	Init Fe (ppm) 0-6"	7.7	Herbicide App. Date	4/30
pH 0-6"	8	CEC 0-6"	21.8	Herbicide Product	Bronate Adv
Org.Matter (%) 0-6"	1.7	Init PAW (in.) 0-6"	0.53	Herbicide Rate (/ac)	20 oz
Init N (lbs/ac) 0-6"	24	Init PAW (in.) 6-24"	2.80	Precip (in.) Plnt'g-Harvest	8.61
Init N (lbs/ac) 6-24"	30	Init PAW (in.) 24-36"	1.59	Precip (>.1) Plnt'g-Harvest	8.26
Init N (lbs/ac) 24-36"	176	Init PAW (in.) 36-48"	1.69	Harvest Date	7/25
Init N (lbs/ac) 36-48"	160	Init PAW (in.) 0-48"	6.60	Rooting Depth (in.)	36"
Init P (ppm) Olsen 0-6"	16	Cropping System	NT-ChmFlw	Post PAW (in.) 0-6"	0.52
Init K (ppm) 0-6"	286	Previous Crop	Barley	Post PAW (in.) 6-24"	1.58
Init S (ppm) 0-24"	20	Planting Date	9/20	Post PAW (in.) 24-36"	1.09
Init Na (MEQ/100g) 0-6"	0.13	Planting Depth (in.)	1.50	Post PAW (in.) 36-48"	1.49
SaltHaz (MMHOS/cm) 0-6"	0.42	Moist Soil Depth @ Plnt'g	48+	Post PAW (in.) 0-48"	4.68
SaltHaz(MMHOS/cm) 6-24"	0.41	Dry Surf Soil (in.) @ Plnt'g	1.00	Precip (>.1) Hvst-Post	0.49

TABLE 2. Ten-Year Yield Summary on Selected Entries from Dryland Intrastate Winter Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 1997-2006. (Exp# 3502-WW)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	AVE. for YEARS TESTED	% of CHECK YIELD 3/	10-YR COMP. AVE. YIELD 4/
BZ9W96-919	PRYOR	7				71.0	23.6	39.0	37.7	73.1	63.6	57.5	52.2	116.5	54.1
PI619098	WAHOO	5						39.8	28.5	72.8	54.7	69.0	53.0	115.4	53.6
MT00159	YELLOWSTONE	5						39.6	30.2	70.3	58.7	65.6	52.9	115.2	53.6
GM10002	NUHORIZON (hard white)	6				61.0	24.3	36.9	36.0	71.4	66.9		49.4	115.0	53.4
S94-4	CDC FALCON (P+)	7				66.0	26.4	38.9	30.4	69.3	62.3	58.9	50.3	112.2	52.2
BZ96-788	LEDGER	4							32.3	65.2	69.6	52.5	54.9	108.5	50.4
MTS0031	GENOU (sawfly resistant)(++)	5						32.6	28.7	68.7	63.8	54.7	49.7	108.3	50.3
GM10001	NUFRONTIER (hard white)	7				63.5	22.7	35.3	34.5	69.7	58.4	54.6	48.4	108.0	50.2
CI 17879	ROCKY (P+)	10	50.0	47.0	57.4	62.7	25.3	35.6	27.6	74.7	59.9	61.4	50.2	107.9	50.2
MT9426	PAUL (++)	8			70.0	65.4	21.8	33.6	33.3	65.0	54.8	57.8	50.2	107.8	50.1
QT 542	HYBRITECH 542 (P)	8	56.6	52.1	60.7	64.7	23.1	39.0	25.9	60.5			47.8	106.4	49.4
RH78W296	BIGHORN (P+)	9	48.8	44.8	76.7	58.0	18.4	32.5	30.2	66.1	57.1		48.1	105.8	49.2
ABOVE	ABOVE	5						28.1	34.5	70.6	54.5	53.9	48.3	105.3	48.9
PI586806	NUWEST (+)(hard white)	10	49.1	45.9	62.3	57.9	25.2	40.5	24.2	63.9	55.2	58.5	48.3	103.8	48.3
MTW9441	NUSKY (hard white)	8			61.1	59.7	25.3	42.5	28.1	63.4	49.4	56.8	48.3	103.6	48.1
PI584526	JUDITH	8	47.1	48.1	64.0	62.2	23.7	33.1	30.8	62.4			46.4	103.3	48.0
PI555458	PROMONTORY (+)	10	43.2	44.3	78.3	59.1	22.9	31.6	30.1	66.2	45.9	53.9	47.6	102.3	47.6
CI 17860	NEELEY	10	42.6	49.7	64.6	69.0	19.9	34.4	30.3	65.6	44.6	53.6	47.4	102.1	47.4
MT9432	BIGSKY (+)	10	45.8	50.8	65.6	54.5	21.1	32.5	29.6	64.3	49.0	58.6	47.2	101.5	47.2
PI593889	RAMPART (sawfly resistant)	10	45.2	50.0	51.9	55.8	22.4	36.8	32.4	63.2	60.6	49.0	46.7	100.5	46.7
PI517194	TIBER	10	46.8	45.1	59.1	61.8	22.5	32.1	26.8	65.5	49.1	55.9	46.5	100.0	46.5
JAGALENE	JAGALENE	4							22.5	68.0	58.4	50.6	49.9	98.6	45.8
ND9257	JERRY	6			49.1			42.9	25.5	60.6	48.6	55.9	47.1	98.0	45.5
PI593891	VANGUARD (sawfly resistant)	10	48.2	42.4	48.7	52.4	22.5	30.8	30.8	61.7	65.3	51.2	45.4	97.7	45.4
PI599336	MORGAN	10	49.4	44.9	59.5	56.3	20.7	37.5	26.8	58.1	44.0	56.0	45.3	97.6	45.3
UT94415	GOLDEN SPIKE	5				59.1	17.8	33.2	27.3	64.1			40.3	96.5	44.9
CI 17735	NORSTAR	9	42.5	53.4	36.0	49.0	20.9	40.2	19.0	47.4	46.3		39.4	86.8	40.3
MEANS (For Entries Listed)			47.3	47.6	60.3	60.5	22.5	36.0	29.4	65.6	55.9	56.5			48.6
April-July Precip. (in.)			6.18	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.20		
Total Annual Precip. (in.)			9.43	14.29	13.45	10.34	6.85	15.15	11.76	14.14	12.23	10.29	11.79		
Soil NO3 (lbs.) to SD at Planting			132	92	Pndg	Pndg	Pndg	110	150	418	138	390	204		
SD (Sampling Depth in Inches)			48	48	Pndg	Pndg	Pndg	48	48	48	48	48	48		
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)		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, ++ = PVP Title 5 or Title 5 Pending.

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. 1997-2006. (Exp# 3502-WW)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	AVE. for YEARS TESTED	% of CHECK TEST WT 3/	10-YR COMP. AVE. TEST WT 4/
GM10002	NUHORIZON (hard white)	6				63.9	60.7	60.2	62.4	62.9	62.9		62.2	102.2	63.1
JAGALENE	JAGALENE	4							60.7	62.4	62.1	64.2	62.4	101.8	62.8
CI 17879	ROCKY (P+)	10	64.83	64.57	62.1	62.4	60.0	59.7	62.1	62.4	61.6	65.4	62.5	101.3	62.5
PI555458	PROMONTORY (+)	10	64.4	64.2	64.0	62.6	61.0	59.9	61.4	60.9	61.3	64.1	62.4	101.1	62.4
BZ96-788	LEDGER	4							61.4	60.8	62.2	63.2	61.9	101.1	62.4
GM10001	NUFRONTIER (hard white)	7				63.6	61.3	57.7	62.1	62.3	60.8	63.9	61.7	100.9	62.3
PI517194	TIBER	10	63.5	64.4	61.5	61.3	60.7	60.7	61.7	59.7	61.0	62.6	61.7	100.0	61.7
MT9432	BIGSKY (+)	10	63.9	64.2	62.7	61.3	60.8	60.9	61.3	58.5	59.9	63.1	61.7	99.9	61.7
RH78W296	BIGHORN (P+)	9	63.8	63.6	62.5	62.2	60.0	58.3	61.9	59.5	61.1		61.4	99.7	61.5
MTW9441	NUSKY (hard white)	8			61.3	61.8	60.3	60.0	60.7	59.3	60.3	62.6	60.8	99.4	61.4
PI586806	NUWEST (+)(hard white)	10	63.0	62.6	61.4	61.7	59.9	60.0	60.2	60.0	60.3	63.1	61.2	99.2	61.2
ABOVE	ABOVE	5						57.9	59.6	61.6	61.0	62.9	60.6	99.1	61.1
MTS0031	GENOU (sawfly resistant)(++)	5						58.4	61.3	59.7	60.9	62.5	60.5	99.0	61.1
QT 542	HYBRITECH 542 (P)	8	63.1	64.1	62.2	61.2	58.9	59.0	60.1	59.5			61.0	98.9	61.0
PI593891	VANGUARD (sawfly resistant)	10	63.6	63.7	60.6	60.1	58.6	58.1	61.0	60.0	61.2	62.0	60.9	98.7	60.9
PI593889	RAMPART (sawfly resistant)	10	63.5	64.2	60.8	59.8	58.3	58.8	61.1	59.1	60.5	62.5	60.9	98.6	60.9
CI 17860	NEELEY	10	62.5	63.1	62.5	61.7	58.2	57.0	61.2	59.2	60.2	62.3	60.8	98.5	60.8
BZ9W96-919	PRYOR	7				61.8	59.1	58.8	61.9	58.4	59.3	62.1	60.2	98.5	60.8
CI 17735	NORSTAR	9	61.9	63.8	59.4	61.0	59.8	59.6	61.9	59.1	58.7		60.6	98.3	60.7
S94-4	CDC FALCON (P+)	7				61.5	57.4	57.7	59.8	60.7	60.3	63.1	60.1	98.3	60.7
PI599336	MORGAN	10	63.4	63.4	61.5	60.8	59.4	57.9	60.3	58.7	57.9	61.9	60.5	98.1	60.5
ND9257	JERRY	6			61.1			57.7	60.5	58.8	59.3	62.1	59.9	98.0	60.5
PI619098	WAHOO	5						57.5	60.6	59.5	59.0	62.3	59.8	97.7	60.3
MT00159	YELLOWSTONE	5						59.2	60.0	57.9	59.4	62.2	59.7	97.7	60.3
MT9426	PAUL (++)	8			61.5	60.6	57.8	57.9	61.2	57.0	58.1	61.8	59.5	97.3	60.0
PI584526	JUDITH	8	62.2	62.5	61.7	59.8	58.0	57.9	58.6	57.5			59.8	96.9	59.8
UT94415	GOLDEN SPIKE	5				61.2	58.9	55.6	60.7	57.2			58.7	96.5	59.6
MEANS (For Entries Listed)			63.4	63.7	61.7	61.5	59.5	58.7	60.9	59.7	60.4	62.9			61.2
April-July Precip. (in.)			6.18	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.20		
Total Annual Precip. (in.)			9.43	14.29	13.45	10.34	6.85	15.15	11.76	14.14	12.23	10.29	11.79		
Soil NO3 (lbs.) to SD at Planting			132	92	Pndg	Pndg	Pndg	110	150	418	138	390	204		
SD (Sampling Depth in Inches)			48	48	Pndg	Pndg	Pndg	48	48	48	48	48	48		
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)		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, ++ = PVP Title 5 or Title 5 Pending.

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. 2006. (Exp# 06-3102-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 %
MT 0249	ND695/MT9433	95.2	165.0	25.3	39.3	7.9	55.5	17.4	3.7
MT 0567	MTHW9710/MT9874	93.1	166.7	29.0	37.0	7.3	52.1	17.6	8.3
MT 0508	MCNEAL/MCNEAL/MN94200	97.6	165.0	26.9	36.8	7.4	52.3	17.6	16.7
MT 0245	VIDA	95.8	166.7	27.6	35.8	7.6	52.0	17.9	5.0
MT 0566	MT0013//SCHOLAR/WA7802	93.1	161.7	24.3	34.5	7.8	53.4	17.2	11.7
BZ996472	AGAWAM	94.5	160.7	24.0	34.0	8.7	58.6	16.0	1.0
MT 0415	MT9408/MT9406//REEDER	92.7	165.7	26.0	34.0	7.8	54.6	18.0	15.0
BZ902413	CONAN/AGAWAM	95.8	164.7	24.6	33.9	8.1	54.3	17.6	1.0
CI 13596	FORTUNA	99.0	165.3	28.2	33.8	8.1	56.0	16.5	3.7
BZ9M1044	HANK*4//IMI GRANDIN*4//TEA	91.3	164.0	20.2	33.7	8.2	55.5	17.5	6.7
MT 0260	MT9653/ND695	96.2	168.0	27.5	33.2	8.0	52.4	17.2	10.0
BZ9M1024	TRIANGLE*3//TEAL11-A	92.4	166.0	24.8	32.9	8.0	53.8	17.6	8.3
BZ992588	CONAN	91.7	166.7	22.3	32.9	8.1	54.6	18.0	3.7
MT 0535	MT9874//REEDER	98.3	165.3	24.5	32.9	7.9	55.4	17.7	10.0
MT 0412	REEDER//MCNEAL/MT9406	88.9	163.3	24.6	32.8	8.1	55.6	16.8	7.0
MT 0509	MCNEAL/MN94200//MCNEAL	95.1	165.0	24.5	32.5	7.3	52.4	17.8	16.7
PI633974	CHOTEAU	95.5	166.3	26.2	32.1	7.7	52.8	17.8	2.3
MT 0553	MT9929/ND709-9	92.7	167.3	26.1	32.0	8.1	53.3	17.4	2.3
MTHW0202	ID377S/MTHW9701	95.5	161.7	25.0	31.9	8.1	56.0	17.2	4.0
AGRIPRO3	FREYR	91.0	165.3	27.3	31.9	8.2	55.1	16.9	20.0
MT 0421	MT9802//MT9408/MT9406	93.1	166.3	22.8	31.7	7.7	52.7	18.2	3.7
BZ992322	HANK	91.3	163.7	22.7	31.7	7.9	53.7	17.7	6.7
MT 0544	MT9874//MCNEAL/MT8808	92.7	165.0	25.0	31.6	7.7	53.0	17.6	6.7
MT 0515	REEDER/MT9929	92.0	168.0	24.2	31.5	8.2	54.9	17.6	3.7
BZ999592	MCNEAL/906R	95.1	167.7	24.2	31.2	8.0	54.1	18.3	5.0
PI632252	OUTLOOK	97.2	170.0	26.5	31.2	7.2	51.3	18.4	16.7
MT 0517	REEDER/MT9929	97.2	163.0	25.1	31.1	8.0	55.4	17.5	10.0
MTHW0471	MTHW9701/MTHW9904	94.4	168.3	28.2	31.1	8.3	56.5	18.2	5.3
MT 0563	MT0013//BZ992632/MT9619	92.4	167.7	21.7	30.8	7.6	53.8	17.9	2.3
MT 0336	MT9609/MT9806	97.9	166.7	25.0	30.8	7.9	53.9	17.7	3.7
AGRIPRO6	KELBY	86.5	164.3	23.6	30.8	8.2	57.2	17.2	8.3
MT 0516	REEDER/MT9929	93.4	164.7	27.5	30.6	7.9	52.8	17.4	5.0
PI619086	EXPLORER	93.4	162.3	25.9	30.5	7.8	54.6	17.6	5.3
MT 0575	MCNEAL/WA7802//MCNEAL/MT8	91.7	164.0	18.0	30.5	7.4	51.5	17.8	16.7
MT 0534	MT9874/MCNEAL	97.2	166.3	23.4	30.4	7.7	53.8	17.1	15.0
MT 0519	REEDER/MT9929	91.0	164.7	28.4	30.4	8.2	55.7	17.6	8.3
BW781	BW 781	96.9	163.7	26.9	30.4	7.6	50.6	17.6	15.0
ND 695	REEDER	94.8	165.7	26.0	30.0	7.6	53.6	17.2	8.3
AGRIPRO1	NORPRO	99.0	165.7	25.2	30.0	7.8	51.9	17.5	13.3
MT 0502	MCNEAL/REEDER	92.7	169.0	25.8	29.7	7.9	52.0	18.5	10.0
MT 0416	REEDER//MT9410/MTRWA116	95.5	166.7	25.2	29.6	7.8	53.6	17.0	6.7
MT 0539	MT9874/MT0013	95.5	166.0	23.9	29.3	7.3	53.3	17.6	8.3
BZ996434	CORBIN	90.6	164.3	21.8	28.9	8.1	54.7	18.3	1.0

TABLE 4. Advanced Yield Spring Wheat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions. Northern Agricultural Research Center. Havre, Montana. 2006.
Continued **(Exp# 06-3102-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 %
MT 0414	MT9408/MT9406//REEDER	97.2	164.7	24.3	28.8	7.8	53.6	18.1	13.3
MT 0523	MCNEAL/MN94200//REEDER	92.7	165.0	24.7	28.8	7.6	52.8	17.8	13.3
MT 0405	REEDER/MT9806	97.6	165.3	27.4	28.8	7.6	52.8	17.8	8.3
MT 0550	MT9929/ND709-9	94.4	163.0	26.4	28.8	8.1	55.1	16.8	8.3
MT 0570	MCNEAL/MN94200//MT9929	94.5	164.0	26.8	28.7	7.7	52.8	17.7	6.7
MT 0266	ND695/MT9755	91.3	163.7	23.9	28.7	7.8	51.7	17.5	8.3
MT 0413	REEDER//MCNEAL/MT9406	93.1	164.7	25.8	28.6	8.3	55.1	17.5	4.0
ACS52610	WPB GERMANY	94.1	168.7	24.1	28.4	8.2	56.4	17.0	16.7
AGRIPRO2	KNUDSON	95.2	165.7	24.3	28.0	7.8	54.8	17.6	8.3
MT 0525	MCNEAL/MN94200//REEDER	89.6	164.7	24.7	27.2	8.1	56.0	16.8	10.0
PI574642	McNEAL	95.1	169.7	24.4	27.2	7.9	52.7	18.0	15.0
MT 0564	MT0013//BZ992632/MT9619	95.1	165.0	23.8	26.8	7.7	54.5	18.0	1.0
MT 0540	MT9874/MTHW0002	95.2	164.7	24.1	26.6	8.0	53.2	17.9	15.0
MT 0537	MT9929/MT9874	95.5	165.0	24.0	26.4	8.1	56.8	17.3	10.0
AGRIPRO7	98S0127-06	93.8	166.0	24.1	26.1	8.1	55.3	16.8	13.3
PI607557	SCHOLAR	95.5	170.0	25.9	26.0	8.2	55.8	18.5	13.3
MT 0562	MT0013//BZ992632/MT9619	92.7	169.7	23.8	25.5	8.0	53.8	17.7	3.7
PI592761	ERNEST	94.1	167.3	27.8	24.9	7.9	54.5	18.7	2.3
CI 10003	THATCHER	96.2	167.7	30.9	24.9	7.6	51.1	18.7	10.0
ND 747	GLENN	93.4	162.3	26.5	24.8	8.2	56.9	17.4	6.7
MT 0551	MT9929/ND709-9	93.4	169.0	25.3	22.7	8.1	53.0	17.4	3.7
EXPERIMENTAL MEANS		94.2	165.6	25.1	30.4	7.9	54.1	17.6	8.3
LSD (0.05)		5.8	2.3	4.5	6.3	0.4	1.8	-	6.6
C.V.2: (S of MEAN / MEAN)*100		2.2	0.5	6.4	7.4	1.8	1.2	-	28.3

1/ No. of Days from January 1 (166 = June 15).

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# 06-3102-SW)						
Field	A-3-2	Soil Texture 0-6"	CL	Dry Surf Soil (in.) @ Plnt'g	0.25	
Quarter	NW	Soil Texture 6-24"	CL	2" Soil Temp (°F) @ Plnt'g	62F	
Section	33	Soil Texture 24-36"	CL	4" Soil Temp (°F) @ Plnt'g	57F	
Township	32N	Soil Texture 36-48"	CL	Fertilizer Formulation	Gran.Blend	
Range	15E	Ca (ppm)	3019	Fertilizer Placement	Bnd at Plntg	
Latitude	N48 29.614'	Init Zn (ppm) 0-6"	0.52	Fert. Rate (lbs/ac) N	70	
Longitude	W109 47.834'	Init Mn (ppm) 0-6"	4.42	Fert. Rate (lbs/ac) P2O5	40	
Soil Series	Joplin CL	Mg (ppm) 0-6"	465	Fert. Rate (lbs/ac) K2O	25	
pH 0-6"	8	Init Cu (ppm) 0-6"	1.12	Herbicide App. Date	n/a	
Org.Matter (%) 0-6"	1.5	Init Fe (ppm) 0-6"	11	Herbicide Product	n/a	
Init N (lbs/ac) 0-6"	24	CEC 0-6"	19.7	Herbicide Rate (/ac)	n/a	
Init N (lbs/ac) 6-24"	48	Init PAW (in.) 0-6"	1.13	Precip (in.) Plnt'g-Harvest	6.98	
Init N (lbs/ac) 24-36"	44	Init PAW (in.) 6-24"	3.55	Precip (>.1) Plnt'g-Harvest	6.57	
Init N (lbs/ac) 36-48"	44	Init PAW (in.) 24-36"	2.08	Harvest Date	7/27	
Init N (lbs/ac) 0-48"	160	Init PAW (in.) 36-48"	2.01	Rooting Depth (in.)	n/a	
Init P (ppm) Olsen 0-6"	24	Init PAW (in.) 0-48"	8.77	Post PAW (in.) 0-6"	0.24	
Init K (ppm) 0-6"	259	Cropping System	NT-ChmFlw	Post PAW (in.) 6-24"	0.42	
Init S (ppm) 0-24"	190	Previous Crop	Barley	Post PAW (in.) 24-36"	1.50	
Init Na (MEQ/100g) 0-6"	21	Planting Date	4/14	Post PAW (in.) 36-48"	n/a	
SaltHaz (MMHOS/cm) 0-6"	0.09	Planting Depth (in.)	1.5	Post PAW (in.) 0-48"	n/a	
SaltHaz(MMHOS/cm) 6-24"	n/a	Moist Soil Depth @ Plnt'g	48+	Precip (>.1) Hvst-Post	0.36	

TABLE 5. Ten-Year Yield Summary on Selected Entries from Dryland Advanced Spring Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 1997-2006. (Exp# 3102-SW)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	AVE. for YEARS TESTED	% of CHECK YIELD 3/	10-YR COMP. AVE. YIELD 4/
MT0245	VIDA	4							15.2	51.8	59.3	35.8	40.5	152.5	45.1
PI632252	OUTLOOK (+)	8			44.1	41.0	22.9	43.4	15.7	49.4	58.9	31.2	38.3	138.3	40.9
BZ996472	AGAWAM	8			44.7	37.8	18.6	37.7	11.5	52.6	53.8	34.0	36.4	131.1	38.8
ND695	REEDER (+)	8			49.1	43.3	22.5	34.9	13.0	40.3	51.9	30.0	35.6	128.5	38.0
PI574642	McNEAL	10	54.4	44.9	49.2	40.2	18.9	36.5	13.2	40.4	51.8	27.2	37.7	127.3	37.7
BZ992322	HANK (P+)	7				41.7	20.5	36.4	11.0	44.7	54.3	31.7	34.3	126.9	37.6
BZ992588	CONAN (P+)(sawfly tolerant)	9	48.0		47.8	36.0	20.4	33.7	13.9	42.7	57.1	32.9	37.0	126.8	37.5
PI633974	CHOTEAU (++) (sawfly res)	7				34.2	19.3	35.7	12.7	43.2	58.0	32.1	33.6	124.2	36.8
AGRIPRO1	NORPRO	5						35.5	8.9	39.9	50.3	30.0	32.9	123.8	36.6
PI607557	SCHOLAR (+)(mod sawfly res)	10	52.1	45.5	42.2	38.5	21.0	36.8	11.0	44.1	45.8	26.0	36.3	122.6	36.3
AGRIPRO3	FREYR	3								40.6	48.8	31.9	40.4	122.0	36.1
CI17430	NEWANA	8	52.1	39.3	45.9	35.6	21.5	38.5	12.1	35.7			35.1	121.1	35.8
BZ996434	CORBIN	5					20.0	35.4	10.3	48.6		28.9	28.6	119.7	35.4
PI549275	HI-LINE	8	45.0	40.0	45.3	37.6	19.7	36.0	11.1	40.7			34.4	118.8	35.2
PI619086	EXPLORER (hrd wht)(+)	6					19.8	36.7	13.1	35.8	47.2	30.5	30.5	115.2	34.1
AGRIPRO2	KNUDSON	5						31.6	7.6	38.8	46.7	28.0	30.5	114.9	34.0
PI592761	ERNEST (+)(sawfly res)	10	47.1	35.7	39.9	37.3	19.6	36.1	12.7	39.5	45.0	24.9	33.8	114.1	33.8
CI13596	FORTUNA (sawfly res)	10	44.0	40.1	35.9	35.9	16.7	29.9	9.5	42.0	49.7	33.8	33.8	114.0	33.8
WB926	WB 926 (P)	8	46.1	33.7	41.9	38.0	18.7	30.4	9.8	42.0			32.6	112.5	33.3
CI17429	LEW (sawfly resistant)	5	41.6	38.3	37.2	35.5	17.9						34.1	109.7	32.5
PI527682	AMIDON (mod sawfly res)	8	47.6	47.3	4.0	35.9	22.2	40.6	11.1	38.2			30.9	106.6	31.5
CI10003	THATCHER	10	40.5	33.6	32.5	30.4	18.4	34.2	6.9	35.2	39.3	24.9	29.6	100.0	29.6
MEANS (For Entries Listed)			47.1	39.8	40.0	37.4	19.9	35.8	11.5	42.2	51.1	30.2			35.9
April-July Precip. (in.)			6.18	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.20		
Total Annual Precip. (in.)			9.43	14.29	13.45	10.34	6.85	15.15	11.76	14.14	12.23	10.29	11.79		
Soil NO3 (lbs.) to SD at Planting			116	140	Pndg	Pndg	Pndg	98	44	86	142	119	106		
SD (Sampling Depth in Inches)			48	48	Pndg	Pndg	48	48	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 or 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. 1997-2006. (Exp# 3102-SW)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	AVE. for YEARS TESTED	% of CHECK TEST WT 3/	10-YR COMP. AVE. TEST WT 4/
BZ996472	AGAWAM	8			60.5	60.6	60.0	61.2	60.3	63.0	59.9	58.6	60.5	111.4	61.3
AGRIPRO3	FREYR	3								61.0	58.8	55.1	58.3	108.9	59.9
BZ996434	CORBIN	5					57.4	60.9	57.7	60.1		54.7	58.2	108.1	59.4
PI607557	SCHOLAR (+)(mod sawfly res)	10	61.3	62.3	58.1	60.7	59.4	61.3	57.3	58.7	58.3	55.8	59.3	107.9	59.3
BZ992588	CONAN (P+)(sawfly tolerant)	9	61.5		58.2	59.4	59.5	61.1	56.6	59.9	59.4	54.6	58.9	107.7	59.2
AGRIPRO2	KNUDSON	5						60.5	57.4	59.0	57.5	54.8	57.8	107.4	59.0
ND695	REEDER (+)	8			58.6	60.1	58.2	60.6	57.4	58.9	58.6	53.6	58.3	107.3	59.0
CI13596	FORTUNA (sawfly res)	10	60.4	62.6	57.9	59.2	57.2	59.2	56.8	59.2	59.2	56.0	58.8	106.9	58.8
PI592761	ERNEST (+)(sawfly res)	10	61.4	61.9	57.4	59.7	58.0	60.0	56.8	59.4	56.9	54.5	58.6	106.6	58.6
PI527682	AMIDON (mod sawfly res)	8	61.0	60.9	57.0	59.1	57.7	59.8	57.1	59.1			59.0	106.5	58.6
MT0245	VIDA	4							55.9	58.6	57.8	52.0	56.1	106.3	58.4
PI633974	CHOTEAU (++) (sawfly res)	7				58.5	57.0	60.2	57.8	59.5	58.7	52.8	57.8	106.2	58.4
PI619086	EXPLORER (hrd wht)(+)	6					58.0	60.3	56.8	58.5	56.7	54.6	57.5	106.2	58.4
AGRIPRO1	NORPRO	5						61.8	57.1	58.4	56.8	51.9	57.2	106.2	58.4
CI17430	NEWANA	8	60.2	60.5	55.0	57.7	59.6	62.0	56.2	58.8			58.8	106.1	58.4
WB926	WB 926 (P)	8	59.0	60.9	56.6	56.5	58.3	60.3	56.7	57.8			58.3	105.2	57.9
CI17429	LEW (sawfly resistant)	5	60.0	61.3	57.0	58.5	58.1						59.0	105.1	57.8
PI549275	HI-LINE	8	59.5	61.6	57.1	56.0	56.4	60.7	56.6	56.9			58.1	104.9	57.7
BZ992322	HANK (P+)	7				57.3	57.7	59.6	56.5	58.3	55.2	53.7	56.9	104.6	57.5
PI632252	OUTLOOK (+)	8			56.6	56.9	56.9	59.9	54.3	57.6	58.0	51.3	56.4	103.9	57.1
PI574642	McNEAL	10	58.7	59.1	56.6	57.4	57.7	60.1	54.0	57.0	57.3	52.7	57.1	103.8	57.1
CI10003	THATCHER	10	57.7	57.5	53.8	55.9	55.5	58.3	50.3	53.8	55.8	51.1	55.0	100.0	55.0
MEANS (For Entries Listed)			60.1	60.9	57.2	58.3	57.9	60.4	56.5	58.7	57.8	54.0			58.4
April-July Precip. (in.)			6.18	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.20		
Total Annual Precip. (in.)			9.43	14.29	13.45	10.34	6.85	15.15	11.76	14.14	12.23	10.29	11.79		
Soil NO3 (lbs.) to SD at Planting			116	140	Pndg	Pndg	Pndg	98	44	86	142	119	106		
SD (Sampling Depth in Inches)			48	48	Pndg	Pndg	48	48	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 or 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. 2006. (Exp# 06-9802-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 %
18	MT02DH82	95.5	169.3	27.7	32.2	7.1	54.7	17.1	2.3
23	MT01695	97.6	168.0	22.8	32.1	6.9	55.0	15.2	1.0
20	MT02302	95.8	167.3	21.3	31.8	7.0	54.6	17.4	0.7
24	MT02298	95.9	171.0	22.8	31.5	6.8	55.1	16.9	0.7
3	STRONGFIELD	97.6	170.3	28.0	31.2	7.3	57.3	19.0	0.7
12	AVONLEA	92.7	168.3	26.7	31.2	7.2	56.2	17.0	1.0
14	MT01649	96.2	165.0	20.5	31.0	6.8	54.6	17.5	0.7
9	ALZADA	95.5	164.3	26.2	30.6	6.9	53.8	16.0	1.0
11	KYLE	96.5	172.3	31.6	30.2	6.9	55.2	17.6	5.3
10	MAIER	95.8	169.7	26.2	29.9	6.9	55.8	18.0	2.3
22	MT03012	94.1	164.0	22.7	29.9	7.0	55.4	16.6	1.0
7	GRENORA	96.9	169.7	23.7	29.7	7.2	55.7	17.6	2.3
2	PLAZA	93.4	171.3	23.1	29.6	7.1	56.1	17.7	1.0
15	MT02525	96.9	164.7	19.8	29.2	7.0	55.4	17.5	1.0
19	MT02DH71	93.4	169.3	26.7	29.0	7.1	55.8	17.8	2.3
17	MT02DH55	96.5	171.3	26.5	28.6	7.0	56.0	18.1	1.0
21	MT03108	92.4	168.7	25.3	28.0	7.0	54.7	17.2	1.0
13	MT01617	95.5	169.7	21.8	28.0	6.8	54.4	17.9	1.0
4	DIVIDE	97.6	170.3	24.3	27.1	7.2	55.5	17.7	0.7
6	ALKABO	96.2	168.3	27.1	27.1	7.2	54.6	17.8	2.3
16	MT02DH32	91.0	165.7	25.1	26.5	6.7	54.3	17.5	1.0
1	MOUNTRAIL	96.9	171.7	25.6	25.8	7.0	55.0	18.3	2.3
5	PIERCE	98.6	170.3	24.5	25.3	6.9	54.6	17.8	1.0
8	DILSE	96.5	171.3	29.1	25.2	7.0	55.4	18.0	2.3
EXPERIMENTAL MEANS		95.6	168.8	25.0	29.2	7.0	55.2	17.5	1.5
LSD (0.05)		4.0	2.0	3.9	5.8	0.5	2.6	-	2.3
C.V.2: (S of MEAN / MEAN)*100		1.5	0.4	5.5	6.9	2.7	1.6	-	54.9

1/ No. of Days from January 1 (169 = June 18).

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# 06-9802-SW)						
Field	A-3-2	Soil Texture 0-6"	CL	Dry Surf Soil (in.) @ Plnt'g	0.25	
Quarter	NW	Soil Texture 6-24"	CL	2" Soil Temp (°F) @ Plnt'g	61F	
Section	33	Soil Texture 24-36"	CL	4" Soil Temp (°F) @ Plnt'g	57F	
Township	32N	Soil Texture 36-48"	CL	Fertilizer Formulation	Gran.Blend	
Range	15E	Ca (ppm)	3019	Fertilizer Placement	Bnd at Plntg	
Latitude	N48 29.633'	Init Zn (ppm) 0-6"	0.52	Fert. Rate (lbs/ac) N	70	
Longitude	W109 47.834'	Init Mn (ppm) 0-6"	4.42	Fert. Rate (lbs/ac) P2O5	40	
Soil Series	Joplin CL	Init Mg (ppm) 0-6"	465	Fert. Rate (lbs/ac) K2O	25	
pH 0-6"	8	Init Cu (ppm) 0-6"	1.12	Herbicide App. Date	n/a	
Org.Matter (%) 0-6"	1.5	Init Fe (ppm) 0-6"	11	Herbicide Product	n/a	
Init N (lbs/ac) 0-6"	24	CEC 0-6"	19.7	Herbicide Rate (/ac)	n/a	
Init N (lbs/ac) 6-24"	48	Init PAW (in.) 0-6"	1.13	Precip (in.) Plnt'g-Harvest	6.98	
Init N (lbs/ac) 24-36"	44	Init PAW (in.) 6-24"	3.55	Precip (>.1) Plnt'g-Harvest	6.57	
Init N (lbs/ac) 36-48"	44	Init PAW (in.) 24-36"	2.08	Harvest Date	7/27	
Init N (lbs/ac) 0-48"	160	Init PAW (in.) 36-48"	2.01	Rooting Depth (in.)	n/a	
Init P (ppm) Olsen 0-6"	24	Init PAW (in.) 0-48"	8.77	Post PAW (in.) 0-6"	0.37	
Init K (ppm) 0-6"	259	Cropping System	NT-ChmFlw	Post PAW (in.) 6-24"	1.69	
Init S (ppm) 0-24"	190	Previous Crop	Barley	Post PAW (in.) 24-36"	n/a	
Init Na (MEQ/100g) 0-6"	21	Planting Date	4/14	Post PAW (in.) 36-48"	n/a	
SaltHaz (MMHOS/cm) 0-6"	0.09	Planting Depth (in.)	1.5	Post PAW (in.) 0-48"	n/a	
SaltHaz(MMHOS/cm) 6-24"	n/a	Moist Soil Depth @ Plnt'g	48+	Precip (>.1) Hvst-Post	0.36	

TABLE 8. Ten-Year Yield Summary on Selected Entries from Dryland Montana Spring Durum Nursery. Northern Agricultural Research Center. Havre, Montana. 1997-2006. (Exp# 9802-SW)

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/
		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
WPBLAKER LAKER	7	43.5	33.5	45.7	37.1	22.2	39.9	12.7				33.5	108.3	37.1
PI574642 McNEAL (HRSW check)	9	48.0	39.6	43.8	39.4	18.9	39.1	15.6	41.1	49.0		37.2	107.0	36.7
97DU2 UTOPIA	7	49.2	31.5	49.0	35.4	12.1	37.6	11.1				32.3	104.3	35.7
CANPLENTY PLENTY	4	48.9	33.1	35.8	32.9							37.7	102.6	35.2
PI510696 RENVILLE	7	45.2	35.1	38.0	32.9	21.5	37.8	11.6				31.7	102.6	35.1
DT433 MEDORA	6	43.5	34.7	40.1	34.8	16.5	39.5					34.8	102.4	35.1
CANKYLE KYLE	10	43.5	32.4	39.6	31.4	20.5	36.7	12.5	49.9	46.0	30.2	34.3	100.0	34.3
ACAVONLE AC AVONLEA (+)	6					21.4	40.3	8.1	44.7	49.9	31.2	32.6	99.9	34.2
D89135 MAIER (+)	8			45.2	34.3	15.7	39.0	10.0	43.5	48.5	29.9	33.3	99.7	34.2
D91080 PLAZA (+)	7				33.8	19.1	38.0	12.4	41.8	50.3	29.6	32.1	99.0	33.9
CI15892 WARD	6	43.2	32.4	37.1	32.8	18.3	37.9					33.6	98.8	33.9
D901313 MOUNTRAIL (+)	8			41.4	34.6	18.9	39.5	11.6	44.3	46.7	25.8	32.8	98.5	33.7
NDMUNICH MUNICH (+)	9	43.1	32.7	42.6	36.0	17.0	38.7	10.6	40.4	44.9		34.0	97.9	33.6
YU894-75 ALZADA	6					18.9	39.2	9.1	47.7	46.2	30.6	31.9	97.9	33.5
D901442 LEBSOCK (+)	6				35.1	16.3	35.2	10.5	46.7	46.6		31.7	96.7	33.1
PI478289 MONROE	9	45.5	28.8	40.0	35.0	16.9	33.7	7.1	43.4	47.8		33.1	95.4	32.7
D87130 BEN (+)	9	43.7	36.5	38.9	33.8	15.8	35.9	8.4	41.3	41.2		32.8	94.6	32.4
DT380 SCEPTRE	5		33.2	40.4	30.2	16.1	31.2					30.2	94.1	32.3
CI17789 VIC	9	43.1	34.3	36.4	33.2	19.1	35.3	10.9	35.7	44.6		32.5	93.6	32.1
DILSE DILSE	4							11.1	41.4	48.6	25.2	31.6	91.1	31.2
PIERCE PIERCE	4							11.6	40.6	41.9	25.3	29.8	86.1	29.5
MEANS (For Entries Listed)		45.0	33.7	40.9	34.3	18.1	37.5	10.9	43.0	46.6	28.5			33.6
April-July Precip. (in.)		6.18	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.20		
Total Annual Precip. (in.)		9.43	14.29	13.45	10.34	6.85	15.15	11.76	14.14	12.23	10.29	11.79		
Soil NO3 (lbs.) to SD at Planting		116	140	Pndg	Pndg	Pndg	98	46	86	142	160	113		
SD (Sampling Depth in Inches)		48	48	Pndg	Pndg	48	48	48	48	48	48	48		
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)	25	25	25	25	25	25	25	25	25	25	25		

Long-term check variety is Kyle.

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/ 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 Kyle for the same years, and z = 10-Yr average yield or test weight for the check variety Kyle.

TABLE 9. Ten-Year Test Weight Summary on Selected Entries from Dryland Montana Spring Durum Nursery. Northern Agricultural Research Center. Havre, Montana. 1997-2006. (Exp# 9802-SW)

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/
		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
WPBLAKER LAKER	7	61.3	59.8	60.4	60.2	62.4	62.3	58.3				60.7	101.2	60.1
C117789 VIC	9	60.1	60.3	60.0	60.5	60.2	62.2	58.1	61.5	58.9		60.2	100.7	59.7
D87130 BEN (+)	9	61.3	60.9	59.5	60.0	60.6	62.3	57.5	60.8	57.9		60.1	100.5	59.6
D901442 LEBSOCK (+)	6				60.4	61.2	62.3	58.2	61.4	58.2		60.3	100.5	59.6
DT433 MEDORA	6	61.3	60.7	58.3	60.7	59.7	61.3					60.3	100.0	59.4
CANKYLE KYLE	10	60.2	58.7	59.2	59.1	61.7	62.9	57.7	59.7	58.8	55.2	59.3	100.0	59.3
PI510696 RENVILLE	7	59.8	60.4	59.7	59.4	60.3	61.7	57.4				59.8	99.8	59.2
97DU2 UTOPIA	7	58.5	61.0	59.1	59.2	60.2	61.6	57.9				59.6	99.5	59.0
D89135 MAIER (+)	8			59.9	59.1	60.8	62.1	56.6	60.0	57.7	55.8	59.0	99.5	59.0
PIERCE PIERCE	4							57.4	60.8	57.5	54.6	57.6	99.5	59.0
ACAVONLE AC AVONLEA (+)	6					61.2	62.8	56.8	60.2	56.5	56.2	58.9	99.3	58.9
CANPLENTY PLENTY	4	59.6	57.9	58.5	59.4							58.8	99.2	58.9
DILSE DILSE	4							56.9	59.7	57.6	55.4	57.4	99.2	58.9
D91080 PLAZA (+)	7				59.3	61.5	62.0	57.1	59.7	56.3	56.1	58.8	99.2	58.9
C115892 WARD	6	61.2	60.1	55.5	59.8	60.3	61.6					59.7	99.1	58.8
PI478289 MONROE	9	59.4	60.3	58.6	59.9	59.2	61.0	56.7	59.8	56.6		59.1	98.8	58.6
D901313 MOUNTRAIL (+)	8			58.8	58.8	60.1	61.7	56.7	59.2	55.6	55.0	58.2	98.2	58.3
NDMUNICH MUNICH (+)	9	59.8	58.8	58.1	59.1	59.6	60.4	55.4	59.4	56.8		58.6	98.0	58.2
YU894-75 ALZADA	6					60.9	61.4	58.1	58.8	55.3	53.8	58.1	97.8	58.0
DT380 SCEPTRE	5		57.6	58.2	58.9	59.2	60.7					58.9	97.7	57.9
PI574642 McNEAL (HRSW check)	9	58.4	57.4	57.3	57.0	58.8	60.2	55.2	60.3	56.7		57.9	96.9	57.5
MEANS (For Entries Listed)		60.1	59.5	58.7	59.5	60.4	61.7	57.2	60.1	57.2	55.3			58.9
April-July Precip. (in.)		6.18	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.20		
Total Annual Precip. (in.)		9.43	14.29	13.45	10.34	6.85	15.15	11.76	14.14	12.23	10.29	11.79		
Soil NO3 (lbs.) to SD at Planting		116	140	Pndg	Pndg	Pndg	98	46	86	142	160	105		
SD (Sampling Depth in Inches)		48	48	Pndg	Pndg	48	48	48	48	48	48	48		
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)	25	25	25	25	25	25	25	25	25	25	25		

Long-term check variety is Kyle.

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/ 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 Kyle for the same years, and z = 10-Yr average yield or test weight for the check variety Kyle.

TABLE 10. Intrastate Spring Barley Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions at Northern Agricultural Research Center. Havre, MT. 2006. (Exp# 06-2102-SB)

ID	CULTIVAR or SELECTION	STAND %	1/		2/		MOIST %	TEST WT Lbs/Bu	PLUMP %	THIN %	3/ PROTEIN %
			HEAD DATE	PLNT HT Inches	YIELD Bu/Ac						
LR116 5	MT970116 LR 5	92.4	164.3	26.1	69.9	8.5	49.6	41.1	30.2	15.6	
MT040107	MT960101/MT970177	91.7	178.7	26.0	69.4	8.5	46.0	21.0	45.8	15.6	
MT970229	MT890021/Stark	93.1	167.3	26.1	68.8	8.4	48.2	34.2	28.8	15.3	
MT040024	GS 1750/MT950186	93.1	166.3	24.4	66.8	8.3	47.4	9.8	67.4	15.0	
6B952482	TRADITION	92.4	164.0	26.4	66.7	8.2	46.4	30.5	38.3	14.5	
MT040223	MT970086/MT950186	85.4	169.0	27.8	66.7	8.7	49.6	41.3	26.2	15.4	
MT040021	GS 1750/Baronesse	97.9	166.3	22.9	66.5	8.2	47.6	26.6	35.4	14.8	
MT040073	MT960045/Harrington	86.1	171.0	25.9	66.0	8.6	49.1	26.9	36.8	15.7	
MT040013	Baronesse/MT9600222	95.5	170.3	26.8	66.0	8.5	46.2	19.8	50.1	15.0	
MT020162	MT960225/H1851195	92.3	168.3	25.8	65.7	8.1	45.4	20.7	45.3	16.1	
MT040058	MT950155/MT950186	93.1	168.3	27.9	65.7	8.5	49.6	35.8	32.1	13.8	
MT040106	MT960101/MT970177	93.1	173.7	22.5	65.7	8.4	47.2	49.3	24.6	15.2	
MT020167	MT960225/H3860224	93.8	169.7	25.2	65.5	8.6	47.7	51.6	22.2	14.5	
MT960228	ESLICK	91.7	168.3	23.7	65.5	8.1	46.1	21.4	45.4	14.9	
BZ594-19	XENA	87.5	167.0	25.9	65.4	8.1	45.1	8.6	69.5	15.5	
MT010081	MT886610/H1851195	88.9	166.0	26.6	64.5	8.2	46.7	24.6	46.8	16.8	
MT030144	MTLB 5/Harrington	92.4	166.0	26.2	64.4	8.5	47.7	28.1	42.4	15.6	
MT000040	Chinook/MT920161	90.3	167.0	26.1	63.7	8.6	47.7	31.8	36.9	16.1	
SK 76333	HARRINGTON	85.4	167.7	25.7	63.6	8.2	44.6	22.3	44.5	15.9	
MT010158	MT920041/Harrington	86.1	167.7	25.7	63.2	8.2	46.9	28.7	33.2	16.7	
MT010162	MT920041/Harrington	90.3	170.0	23.0	63.1	8.2	44.9	12.6	59.8	17.0	
MT020064	MT910160/H1851195	87.5	169.3	25.8	63.0	8.0	47.0	44.6	25.6	16.4	
MT020155	MT960225/H1851195	91.7	165.0	24.9	62.3	7.9	45.6	32.9	35.6	14.7	
LR101 30	MT960101 LR-30	87.5	178.7	23.7	62.1	8.0	45.3	9.8	65.1	16.9	
MT040226	MT970086/MT950186	88.2	167.3	26.2	62.0	8.7	50.7	27.2	33.0	13.8	
MT030137	MTLB 2/MT940053	94.4	167.7	25.0	62.0	8.4	49.0	35.0	32.3	15.2	
BZ596117	BOULDER	91.0	167.7	25.4	61.8	8.2	48.7	38.5	27.8	16.0	
LR116 6	MT970116 LR 6	90.3	166.7	26.1	61.6	8.8	49.7	42.3	28.6	15.6	
MT040105	MT960101/MT970177	91.0	179.7	25.1	61.5	8.3	47.0	38.7	34.5	15.9	
MT040136	MT960101/WC 1304	88.2	168.3	25.7	61.5	8.6	50.5	42.0	27.7	15.0	
MT000125	MT910189/Lewis	87.5	171.0	24.4	61.2	8.5	46.5	27.6	36.3	14.9	
MT030079	MT950186/MT960225	93.8	168.0	26.5	61.2	8.4	48.0	16.9	48.3	15.0	
MT970116	Klages/Baronesse	91.0	166.0	25.5	61.2	8.5	48.8	42.6	28.5	14.9	
MT010160	MT920041/Harrington	89.2	171.7	26.5	60.8	8.4	45.5	19.2	42.9	16.1	
YU501385	Baronesse/Camas	91.7	166.0	25.3	60.7	8.5	48.4	17.1	53.1	14.0	
MT040231	MTLB 6/MT950186	79.2	166.0	25.8	60.1	8.4	47.6	19.5	45.4	15.7	
MT040216	MT970086/MT950186	89.6	172.3	23.9	60.0	8.5	49.2	20.6	45.7	15.3	
MT040130	MT960101/WC 1304	94.5	170.7	24.4	59.5	8.3	45.4	16.9	52.8	16.0	
MT040134	MT960101/WC 1304	92.4	171.0	25.3	59.5	8.3	46.1	25.1	42.4	15.2	
MT040104	MT960101/MT970177	91.7	171.3	24.0	59.4	8.2	48.0	35.2	35.2	15.3	
MT020205	MTLB 32/H1851195	89.6	166.0	26.8	58.6	8.5	47.1	32.6	39.5	15.8	
MT000138	MT920041/H1851195	93.1	165.0	28.6	58.5	8.5	49.1	52.1	19.3	15.5	
MT000047	Chinook/MT920161	91.0	165.0	25.7	58.0	8.3	46.4	19.8	48.6	15.7	

**TABLE 10. Intrastate Spring Barley Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland
Continued Fallow Conditions at Northern Agricultural Research Center. Havre, MT. 2006.
(Exp# 06-2102-SB)**

ID	CULTIVAR or SELECTION	STAND %	1/		2/		MOIST %	TEST WT Lbs/Bu	PLUMP %	THIN %	3/ PROTEIN %
			HEAD DATE	PLNT HT Inches	YIELD Bu/Ac						
MT040181	MT960228/MT920053	91.0	173.0	21.5	57.4	8.5	47.0	23.3	45.8	15.4	
MT950186	HAXBY	92.4	168.0	27.3	57.3	8.3	48.7	16.5	51.8	16.6	
MT040093	MT960082/Chinook	91.7	170.0	25.5	57.0	8.2	46.0	30.1	39.8	15.7	
MT040110	MT960101/MT970177	94.4	175.0	26.4	56.8	8.4	47.2	32.1	35.8	15.7	
MT010080	MT886610/H1851195	88.2	166.0	26.4	56.4	8.4	46.0	23.6	41.1	16.3	
2B965057	CONRAD	84.4	175.7	23.7	54.7	8.7	45.7	24.8	44.9	16.4	
MT020204	MTLB 32/H1851195	93.1	165.7	27.9	54.7	8.3	46.1	26.8	45.3	16.7	
LR101 21	MT960101 LR-21	93.7	178.7	24.9	54.6	8.0	45.1	13.2	60.5	15.7	
MT960101	Manley/Baronesse	95.1	172.3	22.8	53.9	8.3	45.0	12.5	62.5	16.7	
MT030042	MT910189/MT960099	94.5	169.0	24.4	53.4	8.5	47.2	20.5	52.3	15.1	
MT040220	MT970086/MT950186	93.1	172.3	24.1	52.8	7.9	43.8	12.4	59.0	16.5	
MT040129	MT960101/WC 1304	92.4	174.3	25.9	52.6	8.0	44.4	8.8	66.4	17.2	
2B992316	2B992316	93.8	171.3	25.2	52.5	7.9	43.7	23.9	40.7	15.9	
2B992657	2B992657	87.8	168.7	26.4	52.5	7.8	40.0	19.3	50.1	15.8	
MT040209	MT960228/MT950186	92.4	171.7	24.7	52.3	8.4	47.0	19.3	49.5	16.5	
MT040204	MT960228/GS 1750	97.9	172.7	24.2	52.1	7.9	44.4	13.6	60.1	15.1	
MT910189	ND 7293/Bearpaw	95.1	167.0	24.6	51.7	8.3	47.5	33.2	37.5	15.4	
TR232	METCALFE	88.9	167.0	26.4	51.4	8.0	45.3	18.0	48.1	18.1	
MT030063	MT950155/Harrington	86.8	174.7	26.8	50.6	8.3	47.9	25.1	36.5	15.4	
PI568246	BARONESSE	94.5	172.7	21.8	49.7	7.9	44.5	17.3	52.0	16.6	
MT040114	MT960101/GS 1750	91.0	170.3	24.4	48.9	8.2	45.9	16.3	55.5	15.9	
EXPERIMENTAL MEANS		91.1	169.6	25.4	60.0	8.3	46.8	26.2	42.9	15.7	
LSD (0.05)		7.0	4.7	3.8	14.8	0.4	1.7	-	-	-	
C.V.2: (S of MEAN / MEAN)*100		2.8	1.0	5.3	8.8	1.9	1.3	-	-	-	

1/ No. of Days from January 1 (170 = June 19).

2/ Volumetric yields are based on plot weights adjusted to uniform 12 percent grain moisture and 48 lbs/bu as the standard test weight for barley.

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

Site Resource & Management Data: (Exp# 06-2102-SB)						
Field	A-3-1	Soil Texture 0-6"	CL	Dry Surf Soil (in.) @ Plnt'g	0.25	
Quarter	NW	Soil Texture 6-24"	CL	2" Soil Temp (°F) @ Plnt'g	54	
Section	33	Soil Texture 24-36"	CL	4" Soil Temp (°F) @ Plnt'g	60	
Township	32N	Soil Texture 36-48"	CL	Fertilizer Formulation	Gran.Blend	
Range	15E	Ca (ppm)	2123	Fertilizer Placement	Bnd at Plntg	
Latitude	N48 29.688'	Init Zn (ppm) 0-6"	0.55	Fert. Rate (lbs/ac) N	70	
Longitude	W109' 47.837	Init Mn (ppm) 0-6"	5.11	Fert. Rate (lbs/ac) P2O5	40	
Soil Series	Telstad Loam	Init Mg (ppm) 0-6"	342	Fert. Rate (lbs/ac) K2O	25	
pH 0-6"	8	Init Cu (ppm) 0-6"	1.05	Herbicide App. Date	n/a	
Org.Matter (%) 0-6"	1.5	Init Fe (ppm) 0-6"	10.3	Herbicide Product	n/a	
Init N (lbs/ac) 0-6"	22	CEC 0-6"	14.5	Herbicide Rate (/ac)	n/a	
Init N (lbs/ac) 6-24"	66	Init PAW (in.) 0-6"	1.11	Precip (in.) Plnt'g-Harvest	5.54	
Init N (lbs/ac) 24-36"	96	Init PAW (in.) 6-24"	2.84	Precip (>.1) Plnt'g-Harvest	5.00	
Init N (lbs/ac) 36-48"	168	Init PAW (in.) 24-36"	2.68	Harvest Date	7/25	
Init N (lbs/ac) 0-48"	352	Init PAW (in.) 36-48"	3.29	Rooting Depth (in.)	n/a	
Init P (ppm) Olsen 0-6"	29	Init PAW (in.) 0-48"	9.92	Post PAW (in.) 0-6"	0.32	
Init K (ppm) 0-6"	390	Cropping System	NT-ChmFlw	Post PAW (in.) 6-24"	1.09	
Init S (ppm) 0-24"	62	Previous Crop	Barley	Post PAW (in.) 24-36"	n/a	
Init Na (MEQ/100g) 0-6"	18	Planting Date	4/12	Post PAW (in.) 36-48"	n/a	
SaltHaz (MMHOS/cm) 0-6"	0.08	Planting Depth (in.)	1.5	Post PAW (in.) 0-48"	n/a	
SaltHaz (MMHOS/cm) 6-24"	n/a	Moist Soil Depth @ Plnt'g	48+	Precip (>.1) Hvst-Post	0.49	

TABLE 11. Nine-Year Yield Summary on Selected Entries from Dryland Intrastate Spring Barley Nursery. Northern Agricultural Research Center. Havre, Montana. 1997-2006. (EXP# 2102-SB)

2/ VARIETY or SELECTION	No. of YEARS TESTED	1/ YIELD (Bushels Per Acre)										AVE. for YEARS TESTED	% of CHECK YIELD 4/	10-YR COMP. AVE. YIELD 5/	
		1997	1998	1999	2000	2001	2002	2003	2004 3/	2005	2006				
BZ596117 BOULDER	4					32.9	59.3				91.0	61.8	61.3	110.6	66.1
6B952482 TRADITION	4						54.5	8.8			81.3	66.7	52.8	103.9	62.1
MT960228 ESLICK (+)	7			80.6	63.5	28.1	59.7	11.2			77.2	65.5	55.1	100.6	60.1
PI568246 BARONESSE (P+)	9	83.8	70.6	85.3	62.5	32.2	57.2	14.2			82.4	49.7	59.8	100.0	59.8
MT950186 HAXBY (+)	9	89.1	77.0	65.9	66.0	28.9	54.0	12.0			83.7	57.3	59.3	99.3	59.3
BZ594-19 XENA (+)	7	85.0	77.3	65.2		29.0		10.7			73.6	65.4	58.0	97.1	58.1
MT981060 HAYS	3						55.1	12.1			79.9		49.1	95.7	57.2
PI605472 GARNET	3					32.9	50.5	13.6					32.4	93.7	56.0
PI610264 VALIER (+)	8	80.5	71.4	71.0	62.4	30.2	54.3	11.6			75.3		57.1	93.6	55.9
11231-11 LOGAN	4	79.3	72.0	66.1	63.7								70.3	93.0	55.6
PI491534 GALLATIN	8	76.4	68.5	63.8	65.5	31.6	52.9	11.3			82.0		56.5	92.6	55.3
ND13299 CONLON	3					30.1	54.6	10.8					31.8	92.2	55.1
SK76333 HARRINGTON	9	75.7	58.6	71.8	53.5	31.2	54.5	12.8			71.8	63.6	54.8	91.8	54.8
CI15856 LEWIS	5	78.1	66.6	64.9	60.1	33.3							60.6	90.6	54.2
PI591823 CHINOOK (+)	3	81.0	73.0	59.4									71.1	89.1	53.2
ND9866 STARK	5	77.2	75.3	59.5	54.9	25.8							58.5	87.5	52.3
2B914947 MERIT	8	67.1	60.0	71.9	54.9	28.5	49.0	12.1			61.6		50.6	83.0	49.6
6B932978 LEGACY	5				53.8	21.9	51.8	7.9			61.9		39.5	79.4	47.5
CI15773 MOREX	4		67.7	43.1	54.6	20.7							46.5	74.3	44.4
MEANS (For Entries Listed)		79.4	69.8	66.8	59.6	29.2	54.4	11.5			76.8	61.4			55.6
April-July Precip. (in.)		6.18	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	5.71		7.20		
Total Annual Precip. (in.)		9.43	14.29	13.45	10.34	6.85	15.15	11.76	14.14	12.23	10.29		11.79		
Soil NO3 (lbs.) to SD at Planting		130	114	172	Pndg	Pndg	Pndg	102	120	184	352		168		
SD (Sampling Depth in Inches)		48	48	48	Pndg	Pndg	48	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 Baronesse.

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, ++ = PVP Title 5 or Title 5 Pending.

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 Baronesse for the same years, and z = 9-Yr average yield or test weight for the check variety Baronesse.

TABLE 12. Nine-Year Test Weight Summary on Selected Entries from Dryland Intrastate Spring Barley Nursery. Northern Agricultural Research Center. Havre, Montana. 1997-2006. (EXP# 2102-SB)

2/ VARIETY or SELECTION	No. of YEARS TESTED	1/ TEST WEIGHT (Pounds Per Bushel)										AVE. for YEARS TESTED	% of CHECK TEST WT 4/	10-YR COMP. AVE. TEST WT 5/
		1997	1998	1999	2000	2001	2002	2003	2004 3/	2005	2006			
MT950186 HAXBY (+)	9	55.4	52.1	53.1	51.9	49.4	50.4	49.1		50.9	48.7	51.2	106.7	51.2
BZ596117 BOULDER	4					47.7	49.2			50.8	48.7	49.1	104.9	50.3
ND9866 STARK	5	54.3	51.1	51.9	51.1	49.4						51.6	104.5	50.1
CI15856 LEWIS	5	53.8	51.0	52.5	49.9	48.9						51.2	103.8	49.8
11231-11 LOGAN	5	53.9	50.2	51.9	50.1							51.5	103.8	49.8
PI591823 CHINOOK (+)	3	53.4	49.6	52.2								51.7	102.8	49.3
PI610264 VALIER (+)	8	54.6	49.5	51.4	49.0	48.5	49.8	46.8		46.9		49.6	102.3	49.1
ND13299 CONLON	3					48.1	48.5	49.7				48.8	102.3	49.1
PI491534 GALLATIN	8	53.5	49.1	51.5	49.0	48.1	48.5	47.7		48.6		49.5	102.3	49.1
MT960228 ESLICK (+)	7			51.4	49.3	47.7	49.6	46.3		47.1	46.1	48.2	101.6	48.8
BZ594-19 XENA (+)	7	53.0	48.9	51.3		48.4		45.8		45.6	45.1	48.3	100.8	48.4
PI568246 BARONESSE (P+)	9	52.8	47.0	51.2	47.6	48.1	48.9	46.0		45.8	44.5	48.0	100.0	48.0
6B952482 TRADITION	4						46.8	45.1		46.7	46.4	46.3	99.1	47.6
PI605472 GARNET	3					46.7	48.0	45.2				46.7	97.9	47.0
SK76333 HARRINGTON	9	50.7	46.0	49.1	46.8	46.2	48.4	45.5		44.9	44.6	46.9	97.7	46.9
CI15773 MOREX	4		49.4	48.3	45.4	43.5						46.6	96.2	46.2
2B914947 MERIT	8	49.1	43.6	49.0	46.8	46.6	47.3	44.4		41.4		46.0	95.0	45.6
MT981060 HAYS	3						45.3	43.0		44.1		44.1	94.1	45.2
6B932978 LEGACY	5				43.4	44.7	45.2	45.9		43.3		44.5	94.1	45.2
MEANS (For Entries Listed)		53.1	49.0	51.1	48.4	47.5	48.1	46.2		46.3	46.3			48.2
April-July Precip. (in.)		6.18	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.20		
Total Annual Precip. (in.)		9.43	14.29	13.45	10.34	6.85	15.15	11.76	14.14	12.23	10.29	11.79		
Soil NO3 (lbs.) to SD at Planting		130	114	172	Pndg	Pndg	Pndg	102	120	184	352	167.71		
SD (Sampling Depth in Inches)		48	48	48	Pndg	Pndg	48	48	48	48	48	48.00		
Fertilizer Applied (# N)		70	70	70	70	70	70	70	70	70	70	70.00		
(# P ₂ O ₅)		40	40	40	40	40	40	40	40	40	40	40.00		
(# K ₂ O)		25	25	25	25	25	25	25	25	25	25	25.00		

Long-term check variety is Baronesse.

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, ++ = PVP Title 5 or Title 5 Pending.

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 Baronesse for the same years, and z = 9-Yr average yield or test weight for the check variety Baronesse.

TABLE 13. Montana Spring Oat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions. Northern Agricultural Research Center. Havre, Montana. 2006. (Exp# 06-0402-OA)

ID	CULTIVAR or SELECTION	STAND %	1/ HEAD DATE	PLNT HT Inches	3/ YIELD Bu/Ac	MOISTURE %	TEST WT Lbs/Bu	4/ PROTEIN %
CI483126	Monida/75Ab861	98.6	172.0	32.1	88.2	6.3	27.9	13.4
ND930122	KILLDEER	97.2	169.3	29.5	85.9	6.5	30.1	13.1
OT373	CDC DANCER	97.9	171.0	31.6	83.4	6.4	31.7	13.8
OT351	CDC PACER	95.8	169.7	32.1	82.7	6.3	30.0	12.8
87AB5632	Monida/75Ab861	97.9	169.7	27.5	80.9	6.1	27.5	13.6
CI 9252	OTANA	84.7	170.7	31.4	80.0	6.3	30.8	14.4
96AB8796	81Ab5792/82Ab248	98.6	170.3	24.5	77.6	6.1	26.6	14.5
94AB5943	86Ab1867/87Ab5597	99.3	171.7	26.7	72.0	6.4	29.0	13.9
OT382	OT349/J775-1	94.5	169.3	31.1	71.9	6.3	28.0	13.7
98AB6491	90Ab1322/Ogle	95.1	168.0	26.4	70.3	5.8	27.7	13.4
ABSP 9-2	MONICO	97.9	169.7	28.3	68.5	6.4	30.7	14.2
90AB1322	MAVERICK	98.6	170.3	23.4	68.1	5.9	26.5	14.9
98AB6646	IAH61-3-3/90Ab1322	97.9	171.3	27.1	67.4	6.3	28.4	14.2
96AB8597	Otana/87Ab4983	98.6	169.7	27.0	65.9	6.1	28.0	12.5
EXPERIMENTAL MEANS		96.6	170.2	28.5	75.9	6.2	28.8	13.7
LSD (0.05)		8.5	2.2	4.2	17.1	0.7	1.7	-
C.V.2: (S of MEAN / MEAN)*100		3.0	0.4	5.1	7.8	3.6	2.0	-

1/ No. of Days from January 1 (170 = June 19).

2/ Lodging Score: 0 = No Lodging, 9 = 100% Lodging.

3/ 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.

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

Site Resource & Management Data: (Exp# 06-0402-OA)					
Field	A-3-1	Soil Texture 0-6"	SL	Dry Surf Soil (in.) @ Plnt'g	0.25
Quarter	NW	Soil Texture 6-24"	SL	2" Soil Temp (°F) @ Plnt'g	53
Section	33	Soil Texture 24-36"	SL-	4" Soil Temp (°F) @ Plnt'g	59
Township	32N	Soil Texture 36-48"	SL-	Fertilizer Formulation	Gran.Blend
Range	15E	Ca (ppm)	1636	Fertilizer Placement	Bnd at Plntg
Latitude	N48 29.724'	Init Zn (ppm) 0-6"	0.56	Fert. Rate (lbs/ac) N	70
Longitude	W109 47.835'	Init Mn (ppm) 0-6"	6.35	Fert. Rate (lbs/ac) P2O5	40
Soil Series	FrBntn FSL	Init Mg (ppm) 0-6"	499	Fert. Rate (lbs/ac) K2O	25
pH 0-6"	7.2	Init Cu (ppm) 0-6"	1.04	Herbicide App. Date	n/a
Org.Matter (%) 0-6"	1.2	Init Fe (ppm) 0-6"	16.3	Herbicide Product	n/a
Init N (lbs/ac) 0-6"	16	CEC 0-6"	13.2	Herbicide Rate (/ac)	n/a
Init N (lbs/ac) 6-24"	45	Init PAW (in.) 0-6"	1.06	Precip (in.) Plnt'g-Harvest	5.46
Init N (lbs/ac) 24-36"	26	Init PAW (in.) 6-24"	3.24	Precip (>.1) Plnt'g-Harvest	5.00
Init N (lbs/ac) 36-48"	32	Init PAW (in.) 24-36"	2.26	Harvest Date	7/24
Init N (lbs/ac) 0-48"	119	Init PAW (in.) 36-48"	2.20	Rooting Depth (in.)	30"
Init P (ppm) Olsen 0-6"	29	Init PAW (in.) 0-48"	8.76	Post PAW (in.) 0-6"	0.38
Init K (ppm) 0-6"	286	Cropping System	NT-ChmFlw	Post PAW (in.) 6-24"	1.77
Init S (ppm) 0-24"	78	Previous Crop	Barley	Post PAW (in.) 24-36"	1.69
Init Na (MEQ/100g) 0-6"	26	Planting Date	4/13	Post PAW (in.) 36-48"	1.77
SaltHaz (MMHOS/cm) 0-6"	0.11	Planting Depth (in.)	1.5	Post PAW (in.) 0-48"	5.62
SaltHaz (MMHOS/cm) 6-24"	n/a	Moist Soil Depth @ Plnt'g	48+	Precip (>.1) Hvst-Post	0.49

TABLE 14. Ten-Year Yield Summary on Selected Entries from Dryland Northwestern State Oat Nursery. Northern Agricultural Research Center. Havre, Montana. 1997-2006. (Exp# 0402-OA)

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/
		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
OT351 CDC PACER	6					37.5	72.3	24.3	77.4	110.3	82.7	67.4	108.7	81.6
ND930122 KILLDEER	7				79.1	35.8	64.5	24.1	75.5	109.8	85.9	67.8	106.5	79.9
OT373 CDC DANCER	5						68.1	19.9	69.3	115.7	83.4	71.3	105.4	79.1
90AB1322 MAVERICK	10	99.2	98.4	106.1	72.5	37.5	78.0	29.0	77.7	116.0	68.1	78.2	104.2	78.2
81AB5792 RIO GRANDE	8	97.0	103.1	97.4	81.0	36.3	65.2	26.1	83.5			73.7	103.4	77.6
CI483126 MONIDA	10	93.9	97.9	103.8	80.5	37.7	70.5	24.2	73.9	104.1	88.2	77.5	103.2	77.5
ABSP9-2 MONICO	10	92.4	93.0	111.3	73.0	29.7	72.5	25.3	72.3	117.9	68.5	75.6	100.7	75.6
CI9252 OTANA	10	95.9	100.2	108.7	73.9	33.6	67.3	21.1	69.6	100.3	80.0	75.1	100.0	75.1
PI583735 CELSIA	8	97.8	89.4	103.4	75.5	32.1	66.1	26.7	69.5			70.1	98.3	73.8
ND870258 WHITESTONE	6	98.1	99.1	94.3	75.6	36.6	63.1					77.8	97.3	73.1
PI537463 AJAY	8	90.3	87.3	98.0	66.0	34.5	66.4	23.9	66.1			66.6	93.4	70.1
MEANS (For Entries Listed)		95.6	96.0	102.9	75.2	35.1	68.5	24.5	73.5	110.6	79.5			76.5
April-July Precip. (in.)		6.18	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.20		
Total Annual Precip. (in.)		9.43	14.29	13.45	10.34	6.85	15.15	11.76	14.14	12.23	10.29	11.79		
Soil NO3 (lbs.) to SD at Planting		130	114	172	Pndg	Pndg	Pndg	102	184	8	119	118		
SD (Sampling Depth in Inches)		48	48	48	Pndg	Pndg	Pndg	48	48	48	48	48		
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)	25	25	25	25	25	25	25	25	25	25	25		

Long-term check variety is Otana.

1/ See MCES Bulletin 1096 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. Ten-Year Test Weight Summary on Selected Entries from Dryland Northwestern State Oat Nursery. Northern Agricultural Research Center. Havre, Montana. 1997-2006. (Exp# 0402-OA)

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/
		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006			
OT373 CDC DANCER	5					35.5	27.3	33.3	30.1	31.7	31.6	101.2	33.0	
81AB5792 RIO GRANDE	8	32.0	29.7	31.8	37.2	34.0	30.3	30.8	29.3		31.9	100.0	32.6	
CI9252 OTANA	10	33.4	31.6	33.1	35.3	36.8	33.5	30.9	31.9	29.0	32.6	100.0	32.6	
ABSP9-2 MONICO	10	33.8	30.8	33.5	34.6	37.0	34.6	30.2	31.4	27.5	32.4	99.3	32.4	
ND930122 KILLDEER	7				35.7	35.0	33.0	30.3	32.7	28.8	30.1	32.2	98.8	32.2
PI537463 AJAY	8	33.1	28.4	30.6	32.9	35.5	31.0	29.2	28.3		31.1	97.6	31.8	
ND870258 WHITESTONE	6	32.8	29.4	31.7	36.3	36.2	31.7				33.0	97.2	31.7	
PI583735 CELSIA	8	30.9	28.0	30.0	33.9	32.2	29.7	29.3	28.3		30.3	95.0	31.0	
OT351 CDC PACER	6					36.0	32.8	26.5	29.9	26.2	30.0	30.2	94.0	30.7
CI483126 MONIDA	10	30.2	28.6	29.3	33.4	35.9	32.0	30.3	28.6	24.5	27.9	30.1	92.2	30.1
90AB1322 MAVERICK	10	30.6	27.6	29.1	33.1	36.1	31.9	28.1	28.4	25.3	26.5	29.7	90.9	29.7
MEANS (For Entries Listed)		32.1	29.3	31.1	34.7	35.5	32.4	29.3	30.2	27.3	29.7		31.6	
April-July Precip. (in.)		6.18	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.20		
Total Annual Precip. (in.)		9.43	14.29	13.45	10.34	6.85	15.15	11.76	14.14	12.23	10.29	11.79		
Soil NO3 (lbs.) to SD at Planting		130	114	172	Pndg	Pndg	Pndg	102	184	8	119	118		
SD (Sampling Depth in Inches)		48	48	48	Pndg	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 Otana.

1/ See MCES Bulletin 1096 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 16. Montana Safflower Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions at Northern Agricultural Research Center. Havre, Montana. 2006. (Exp# 06-7702-SA)

ENTRY	CULTIVAR or SELECTION	STAND %	1/ FLWR PLNT HT		YIELD Lbs/Ac	MOIST %	TEST WT Lbs/Bu	OIL %		OIL Lbs/Ac
			DATE	Inches				0%Mois.	8%Mois.	
26	HYBRID 9049 20#/ac	91.2	195.0	25.5	1463.5	5.1	44.1	33.4	30.7	448.6
27	HYBRID 9049 15#/ac	90.3	195.0	26.8	1433.7	5.1	44.1	33.7	31.0	443.7
32	CENTENNIAL	94.9	195.3	27.2	1257.3	4.7	42.4	43.4	39.9	501.6
19	03B 4024	95.3	194.3	24.8	1246.9	4.9	43.4	37.3	34.3	427.8
21	03B 4765	95.6	194.3	21.9	1213.9	4.5	41.2	39.2	36.1	438.1
30	MT 2004	99.1	192.7	22.5	1158.3	4.7	42.5	36.8	33.9	392.5
24	03B 6748	94.9	196.7	22.4	1140.2	4.3	37.7	41.3	38.0	434.5
23	03B 6673	84.2	200.3	23.1	1123.1	4.8	42.3	38.4	35.3	396.5
20	03B 4098	92.8	194.7	23.5	1104.7	4.8	42.5	38.7	35.6	393.4
6	01B 2159	96.5	200.0	25.6	1096.9	4.9	43.3	37.5	34.5	377.3
34	FINCH	91.7	196.7	25.7	1082.4	4.9	44.8	38.6	35.5	384.4
36	S-541	97.2	195.3	25.4	1068.3	4.6	42.1	43.1	39.7	422.7
10	01B 9104	97.9	197.0	24.7	1027.0	5.1	42.0	36.1	33.3	342.1
18	03B 1118	98.1	194.7	22.1	1018.7	4.1	37.4	43.3	39.8	405.9
28	MT 2000	99.5	194.3	22.8	1018.2	4.6	40.0	38.8	35.7	363.5
33	MORLIN	99.3	197.3	23.5	1013.9	4.6	41.8	40.1	36.9	373.8
17	02B 8628	93.7	196.0	24.0	1013.3	4.8	43.5	37.5	34.5	351.1
2	95B 7446	94.2	197.7	23.8	1000.4	4.8	42.4	36.9	33.9	343.3
16	02B 8599	96.8	196.7	24.5	997.8	5.0	42.4	35.5	32.6	327.0
7	01B 7113	96.3	197.0	22.5	982.3	4.3	37.0	41.7	38.4	377.7
9	01B 8553	96.5	198.7	24.2	973.2	5.0	44.5	36.6	33.7	328.4
11	02B 6081	100.0	195.0	24.4	968.1	4.7	42.1	38.1	35.0	339.6
8	01B 7353	98.1	197.0	25.9	963.9	4.9	43.5	37.5	34.5	333.6
3	97B 1286	96.1	196.7	24.2	962.8	4.6	40.7	40.2	37.0	357.4
14	02B 7619	99.1	197.3	24.2	942.3	4.9	42.6	36.3	33.4	315.7
12	02B 6381	95.8	189.7	22.7	891.8	4.0	38.4	38.1	35.1	318.8
1	95B 3538	97.4	197.3	26.4	886.4	4.9	42.8	35.1	32.2	295.0
29	MT 2003	98.1	195.3	24.4	882.8	4.7	41.8	37.9	34.8	308.6
25	04B 6184	98.8	197.3	24.6	866.4	4.9	41.9	36.9	33.9	295.5
4	97B 1744	97.9	197.0	26.6	833.9	4.8	43.8	34.5	31.8	282.6
13	02B 6655	97.7	186.7	22.7	826.6	4.4	38.9	41.1	37.8	312.9
35	NUTRA SAFF	91.6	195.3	26.4	823.9	3.9	38.7	47.0	43.2	356.1
31	ERLIN	96.3	193.3	22.2	817.4	4.9	40.6	39.3	36.2	296.0
22	03B 5085	96.5	194.7	23.8	798.6	4.1	38.3	42.5	39.1	312.4
15	02B 8350	97.2	199.3	23.8	767.2	4.8	41.9	33.9	31.2	240.0
5	00B 8206	96.3	197.3	24.4	755.2	5.0	41.5	35.4	32.5	245.9
EXPERIMENTAL MEANS		95.9	195.8	24.3	1011.7	4.7	41.6	38.4	35.3	357.9
LSD (0.05)		4.2	4.8	3.0	294.1	0.3	1.5	4.1	3.8	118.4
C.V.2: (S of MEAN / MEAN)*100		1.6	0.9	4.3	10.3	2.0	1.3	3.8	3.8	11.7

1/ No. of Days from January 1 (196 = July 15).

Site Resource & Management Data: (Exp# 06-7702-SA)							
Field	An-3-5		Soil Texture 0-6"	CL-		Dry Surf Soil (in.) @ Plnt'g	1
Quarter	NW		Soil Texture 6-24"	CL		2" Soil Temp (°F) @ Plnt'g	71
Section	33		Soil Texture 24-36"	CL		4" Soil Temp (°F) @ Plnt'g	67
Township	33N		Soil Texture 36-48"	CL		Fertilizer Formulation	Gran.Blend
Range	15E		Ca (ppm)	2529		Fertilizer Placement	Bnd at Plntg
Latitude	N48 29.437'		Init Zn (ppm) 0-6"	0.4		Fert. Rate (lbs/ac) N	0
Longitude	W109 47.834'		Init Mn (ppm) 0-6"	4.3		Fert. Rate (lbs/ac) P2O5	40
Soil Series	unk		Init Mg (ppm) 0-6"	333.0		Fert. Rate (lbs/ac) K2O	0
pH 0-6"	8.2		Init Cu (ppm) 0-6"	1.0		Herbicide App. Date	4/10
Org.Matter (%) 0-6"	1.3		Init Fe (ppm) 0-6"	9.7		Herbicide Product	Treflan EC
Init N (lbs/ac) 0-6"	28		CEC 0-6"	16.3		Herbicide Rate (/ac)	24 oz
Init N (lbs/ac) 6-24"	45		Init PAW (in.) 0-6"	n/a		Precip (in.) Plnt'g-Harvest	5.73
Init N (lbs/ac) 24-36"	24		Init PAW (in.) 6-24"	n/a		Precip (>.1) Plnt'g-Harvest	5.66
Init N (lbs/ac) 36-48"	60		Init PAW (in.) 24-36"	n/a		Harvest Date	10/9
Init N (lbs/ac) 0-48"	157		Init PAW (in.) 36-48"	n/a		Rooting Depth (in.)	n/a
Init P (ppm) Olsen 0-6"	20		Init PAW (in.) 0-48"	n/a		Post PAW (in.) 0-6"	n/a
Init K (ppm) 0-6"	299		Cropping System	CT-ChmFlw		Post PAW (in.) 6-24"	n/a
Init S (ppm) 0-24"	70		Previous Crop	Wntr Wheat		Post PAW (in.) 24-36"	n/a
Init Na (MEQ/100g) 0-6"	22.00		Planting Date	4/29		Post PAW (in.) 36-48"	n/a
SaltHaz (MMHOS/cm) 0-6"	0.10		Planting Depth (in.)	1		Post PAW (in.) 0-48"	n/a
SaltHaz (MMHOS/cm) 6-24"	n/a		Moist Soil Depth @ Plnt'g	48+		Precip (>.1) Hvst-Post	n/a

TABLE 17. Nine-Year Yield Summary on Selected Entries from Dryland Safflower Nursery. Northern Agricultural Research Center. Havre, Montana. 1997-2006. (Exp# 7702-SA)

VARIETY or SELECTION	No. of YEARS TESTED	YIELD (Lbs Per Acre)										AVE. for YEARS TESTED	% of CHECK YIELD 2/	9-YR COMP. AVE. YIELD 3/	
		1997	1998	1999	2000	2001 1/	2002	2003	2004	2005	2006				
S-518	WILL 95FI	6	560.8	1044.3	1180.9	1569.6		1870.3	630.0				1142.6	111.0	1201.9
95B7181	99MTDSVT 228/107	7	597.2	1079.6	1245.5	1902.9		1541.5	676.7	1046.5			1155.7	110.7	1198.9
95B7174	99MTDSVT 222/106	6	540.2	1066.3	1176.9	1666.0		1691.4	688.2				1138.2	110.6	1197.2
91B2166	99DL1 212/106	4	567.6	876.9				1552.8		1059.8			1014.3	109.1	1181.5
95B7446	99MTDSVT 218/108	7			1366.8	1496.5		1950.3	692.8	1229.7	1222.9	1000.4	1279.9	108.4	1173.8
00B8208	01DOL4 4126	4						1754.2	595.8	1343.8	1085.6		1194.8	105.0	1137.5
97B1744	99DLI2 319/107	6				1941.9		1785.7	451.7	1298.9	1150.4	833.9	1243.8	103.2	1117.5
MORLIN	011-2180	9	466.6	937.3	1342.4	1313.2		1839.9	495.0	1359.6	1194.4	1013.9	1106.9	102.2	1106.9
MONT2004	WILL	5						1617.1	448.8	1257.3	1392.6	1158.3	1174.8	101.2	1095.3
FINCH	WILL 95FI	9	470.0	1033.4	1267.5	1516.3		1383.7	564.1	1276.5	1214.2	1082.4	1089.8	100.6	1089.8
95B3538	99MTDSVT 104	8		835.1	1160.7	1588.2		1832.6	480.4	1113.7	1215.6	886.4	1139.1	100.4	1087.7
CENTENNIAL	WILL	9	673.5	806.6	1034.6	1423.6		1744.7	493.5	1130.6	1181.1	1257.3	1082.8	100.0	1082.8
97B1286	99MTDSVT 311/120	7			1347.7	1036.8		1791.8	447.3	1326.0	1261.8	962.8	1167.7	98.9	1070.9
02B 8599	02B 8599	3								1040.4	1453.4	997.8	1163.8	97.8	1059.3
02B 6081	02B 6081	3								1175.4	1344.9	968.1	1162.8	97.7	1058.4
00B7627	01DOL4 4115	4						1562.6	497.2	1265.8	1089.5		1103.8	97.0	1050.8
S-541	WILL	5						1848.6	413.9	1202.1	1061.7	1068.3	1118.9	96.3	1043.2
MONT2001	991-122-6503	7	315.9	854.2	1060.0	1571.6		1605.3	516.6	1074.0			999.7	95.8	1037.0
00B6878	01DOL3 3110	4						1666.2	413.4	1210.1	1038.1		1081.9	95.1	1030.0
MONT2000	WILL	9	452.3	920.1	1152.1	1163.5		1787.3	479.2	1113.7	1160.5	1018.2	1027.4	94.9	1027.4
98B1475	99DLI2 316/130	3						1406.1	545.8	1206.0			1052.6	93.7	1015.1
00B1027	01DLI2 7107	3						1545.2	307.3	1288.8			1047.1	93.3	1009.7
MONT2003	WILL WOMA2003	9	574.7	917.5	1311.4	758.9		1715.2	468.2	1110.2	1226.1	882.8	996.1	92.0	996.1
96B6054	99MTDSVT 109	5			1027.1	1112.1		1503.9	468.2	993.1			1020.9	87.6	948.6
00B6144	01DOL2 2124	3						1293.2	452.4	1133.2			959.6	85.5	925.4
NUTRASAF	91B3842	9	484.2	740.8	879.4	833.1		1585.8	211.2	1048.9	1036.2	823.9	849.3	78.4	849.3
ERLIN	99MTDSVT 224/130	9	421.2	565.1	882.3	759.0		1262.5	360.4	1376.7	828.3	817.4	808.1	74.6	808.1
MEANS (For Entries Listed)			510.3	898.2	1162.4	1353.3		1645.5	491.6	1187.2	1175.4	984.8			1059.3
April-July Precip. (in.)			6.18	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.20		
Total Annual Precip. (in.)			9.43	14.29	13.45	10.34	6.85	15.15	11.76	14.14	12.23	10.29	11.79		
Soil NO3 (lbs.) to SD at Planting			248	n/a	n/a	n/a	n/a	n/a	78	214	708	157	281		
SD (Sampling Depth in Inches)			48	48	Pndg	Pndg	n/a	48	48	48	48	48	48		
Fertilizer Applied															
	(# N)		70	70	70	70	n/a	70	70	70	50	0	60		
	(# P2O5)		40	40	40	40	n/a	40	40	40	20	40	38		
	(# K2O)		25	25	25	25	n/a	25	25	25	10	0	21		

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/ 9-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 = 9-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 18. Eight-Year Percent Oil Summary on Selected Entries from Dryland Safflower Nursery. Northern Agricultural Research Center. Havre, Montana. 1997-2006. (Exp# 06-7702-SA)

VARIETY or SELECTION	No. of YEARS TESTED	Oil (%)										AVE. for YEARS TESTED	% of CHECK OIL 2/	8-YR COMP. AVE. OIL 3/
		1997	1998	1999 1/	2000	2001 1/	2002	2003	2004	2005	2006			
00B1027	01DLI2 7107						41.0	43.5	43.8			42.8	109.3	42.8
NUTRASAF	91B3842	8	40.5	36.9		41.6	39.4	46.2	44.9	43.8	43.2	42.0	107.4	42.0
00B6144	01DOL2 2124	3					37.9	43.3	42.1			41.1	105.1	41.1
S-541	WILL	5					37.0	41.2	40.5	39.5	39.7	39.6	100.6	39.4
CENTENNIAL	WILL	8	38.7	36.5		41.3	37.2	40.1	40.1	39.5	39.9	39.1	100.0	39.1
96B6054	99MTDSVT 109	4				38.5	38.3	42.5	39.1			39.6	99.8	39.1
S-518	WILL95FI	5	39.3	37.5		42.5	33.2	38.9				38.3	98.8	38.7
MONT2000	WILL	8	36.6	36.2		37.5	32.7	38.7	37.3	37.9	35.7	36.6	93.4	36.6
97B1286	99MTDSVT 311/120	6				39.5	34.7	36.0	37.6	36.5	37.0	36.9	92.9	36.4
ERLIN	99MTDSVT 224/130	8	34.5	34.6		39.7	34.7	36.4	37.7	37.3	36.2	36.4	92.9	36.4
00B6878	01DOL3 3110	4					33.5	39.7	35.6	36.5		36.3	92.7	36.3
MORLIN	011-2180	8	34.8	34.4		38.9	33.8	37.3	37.1	36.4	36.9	36.2	92.4	36.2
MONT2003	WILL WOMA2003	7	37.8	36.5		36.7	32.4	37.8	34.9	36.2		36.1	92.3	36.1
95B7174	99MTDSVT 222/106	5	37.9	34.2		35.3	32.3	38.9				35.7	92.2	36.1
00B7627	01DOL4 4115	4					33.6	39.3	35.5	35.2		35.9	91.5	35.8
MONT2001	991-122-6503	6	34.4	35.9		35.7	33.1	39.1	35.5			35.6	91.4	35.8
91B2166	99DLI1 212/106	4	34.1	33.0			34.3		37.1			34.6	90.9	35.6
02B 6081	02B 608	3							35.7	36.6	35.0	35.8	89.9	35.2
98B1475	99DLI2 316/130	3					33.1	36.1	35.9			35.0	89.5	35.0
95B7181	99MTDSVT 228/107	6	35.6	34.4		34.7	32.4	37.9	34.2			34.9	89.5	35.0
MONT2004	WILL	5					32.0	37.2	35.5	35.5	33.9	34.8	88.5	34.6
FINCH	WILL 95FI	8	33.3	33.6		37.5	32.4	34.5	34.5	35.0	35.5	34.5	88.2	34.5
95B7446	99MTDSVT 218/108	6				35.5	31.7	37.8	34.8	34.8	33.9	34.7	87.6	34.3
95B3538	99MTDSVT 104	7		34.3		36.5	32.7	35.2	34.8	33.8	32.2	34.2	87.3	34.2
00B8208	01DOL4 4126	4					30.6	36.4	33.6	33.6		33.6	85.6	33.5
97B1744	99DLI2 319/107	6				36.3	32.3	34.6	34.9	33.8	31.8	33.9	85.6	33.5
02B 8599	02B 8599	3							33.6	34.2	32.6	33.5	84.0	32.9
MEANS (For Entries Listed)			36.4	35.2		38.0		34.3	38.7	37.1	36.4	36.0		36.5
April-July Precip. (in.)			6.18	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.20	
Total Annual Precip. (in.)			9.43	14.29	13.45	10.34	6.85	15.15	11.76	14.14	12.23	10.29	11.79	
Soil NO3 (lbs.) to SD at Planting			248	n/a	n/a	n/a	n/a	n/a	78	214	708	157	281	
SD (Sampling Depth in Inches)			48	48	Pndg	Pndg	n/a	48	48	48	48	48	48	
Fertilizer Applied														
	(# N)		70	70	70	70	n/a	70	70	70	50	0	60	
	(# P2O5)		40	40	40	40	n/a	40	40	40	20	40	38	
	(# K2O)		25	25	25	25	n/a	25	25	25	10	0	21	

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/ 8-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 = 8-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.