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INTRODUCTION

Content:

This preliminary draft report is intended to serve as a popularized 2005 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 23 percent of NARC-Agronomy's total research project effort on-station at Havre, and approximately 25 percent of the cereal and oilseed variety evaluation effort on-station. The remaining 75 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 90 years beginning in 1916.

Detailed data pertaining to multiple performance characters, along with associated climatic and management inputs are presented for 2005. 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.

2005 Data:

It should be noted that 2005 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 2005 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://plantsciences.montana.edu/MTproducerInfo.htm

Summary of climatic data by months for the 2004-2005 crop year (September to August) and averages for the period 1916-2005 at the Northern Agricultural Research Center, Havre, Montana.

Month Year	Sep 2004	Oct 2004	Nov 2004	Dec 2004	Jan 2005	Feb 2005	Mar 2005	Apr 2005	May 2005	Jun 2005	Jul 2005	Aug 2005	Crop Year
Precipitation (inches)													**Total**
Current Year	1.51	0.71	0.16	0.18	0.19	0.01	0.89	0.66	0.98	5.16	0.57	0.88	11.90
90-Year Average (1916 to 2004-05)	1.16	0.66	0.42	0.45	0.44	0.32	0.56	0.97	1.78	2.65	1.57	1.22	12.20
Mean Temperature (^{o}F)													**Average**
Current Year	57.4	43.3	34.8	27.9	12.0	29.7	35.2	46.7	52.5	61.7	71.2	67.2	45.0
90-Year Average (1916 to 2004-05)	56.7	46.3	30.2	19.9	15.3	20.2	30.2	44.1	54.7	62.5	70.7	68.8	43.3

Last killing frost in spring*

2005 _____ **May 24th**
Ave. 1916-2005 _____ **May 15th**

First killing frost in fall*

2005 _____ **September 24th**
Ave. 1916-2005 _____ **September 21st**

Frost free period

2005 _____ **123 days**
Ave. 1916-2005 _____ **129 days**

Growing degree days (base 50)

May 1-Oct 31, 2005 _____ **2271.7**
Ave. 1951-2005 _____ **2383.7**

Maximum summer temperature _____ **103^{o} on August 1, 2005**
Minimum winter temperature _____ **-31^{o} on January 14, 2005**

*In this summary 32^{o} 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. 2005. (Exp# 05-3502-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 %
BOND	BOND CL	76.4	158.0	30.3	74.1	8.1	61.4	11.4	35.0
BZ96-788	LEDGER	73.6	163.3	29.8	69.6	8.1	62.2	11.7	21.7
GM10002	NUHORIZON	70.8	160.3	27.7	66.9	8.2	62.9	11.4	18.3
PI593891	VANGUARD (sawfly resistant)	79.9	165.7	34.3	65.3	8.3	61.2	12.4	6.7
MTS0031	GENOU (sawfly resisstant)	76.0	166.7	28.2	63.8	8.3	60.9	12.3	10.0
BZ96-919	PRYOR	67.4	164.3	29.3	63.6	8.0	59.3	13.0	8.3
BZ022060	BZ022060	70.5	162.0	26.8	63.1	8.1	62.0	11.7	13.3
MTCL0316	BigSky/IMMIBC304-6	72.6	158.3	34.4	62.8	7.9	63.2	11.4	21.7
MT02113	Karl 92/UT190	63.5	163.3	27.2	62.6	8.1	59.9	10.7	35.0
S94-4	CDC FALCON	71.2	162.0	29.3	62.3	8.1	60.3	11.4	33.3
MT0383	Karl 92/UT190	74.0	162.3	30.5	61.8	7.8	60.2	13.7	46.7
MTW02111	KarL 92/UT190	72.6	166.3	31.1	60.9	8.1	59.8	12.0	23.3
PI593889	RAMPART (sawfly resistant)	78.5	165.3	33.0	60.6	7.9	60.5	13.7	8.3
CI 17879	ROCKY	71.2	162.0	33.5	59.9	8.1	61.6	12.2	28.3
MT00159	YELLOWSTONE	71.9	165.3	28.2	58.7	7.8	59.4	12.7	40.0
JAGALENE	Jagalene	71.5	159.0	28.1	58.4	7.8	62.1	12.7	55.0
GM10001	NUFRONTIER	59.0	161.7	29.1	58.4	8.1	60.8	12.0	16.7
MT0097	Erhardt//Judith/Kestrel	72.9	162.3	31.8	57.7	8.0	60.6	13.4	33.3
MT03177	KS93WGRC27/2*Judith	71.5	163.0	34.9	57.5	7.7	57.7	12.9	41.7
RH78W296	BIGHORN	76.4	164.7	28.2	57.1	7.8	61.1	13.2	23.3
MT02136	NE92522/MT9418	70.8	162.3	31.6	56.9	8.0	58.6	12.4	43.3
MTW01133	NuWest/SD88191	69.8	160.7	27.4	56.5	7.8	59.9	13.7	26.7
MT01148	Judith/Blizzard	69.4	165.3	28.6	56.5	7.6	59.3	13.9	73.3
PI586806	NUWEST	70.5	165.0	33.6	55.2	8.1	60.3	12.8	60.0
WA7936	WA7936	75.7	170.7	30.6	55.0	7.8	56.7	13.8	15.0
MT9426	PAUL	76.4	164.0	29.6	54.8	7.5	58.1	13.5	75.0
PI619098	WAHOO	70.8	160.7	29.3	54.7	8.0	59.0	11.9	26.7
ABOVE	ABOVE	68.1	154.0	28.3	54.5	8.1	61.0	13.0	35.0
MT998265	MT9982-65 = Promontory/Ju	68.0	166.7	32.5	54.4	7.7	59.5	13.1	45.0
WA7939	WA7939	75.7	169.7	28.9	54.4	8.1	57.8	12.6	5.0
MTS0360	Rampart/Mironovskaya 61	63.9	166.7	32.6	54.3	7.5	57.4	14.6	8.3
MT03176	KS93WGRC27/2*Judith	67.7	163.0	29.1	54.0	7.9	58.4	12.7	50.0
MTCL0306	MTW9727//Fidel/NuWest	69.4	161.7	34.1	53.5	7.9	61.0	12.6	40.0
HATCHER	HATCHER	67.7	158.7	24.8	53.2	7.8	60.4	11.7	28.3
MTI01159	Fidel/Tiber	63.9	162.7	28.3	52.6	7.5	60.0	12.4	8.3
PI613099	MILLENIUM	64.9	161.7	28.4	52.2	8.2	61.8	13.6	36.7
MT998253	MT9982-53 = Promontory/Ju	65.3	168.0	29.6	51.1	7.7	59.3	13.9	53.3
QT 542	QUANTUM 542	61.8	161.3	33.6	50.5	8.3	60.8	13.5	31.7
MTCL0318	Rampart/Fidel//Kestrel (sawfly res.)	67.7	162.3	31.3	49.9	8.1	61.5	13.9	15.0
MTW9441	NUSKY	70.5	166.3	36.1	49.4	8.1	60.3	11.7	35.0
PI517194	TIBER	71.9	163.3	37.2	49.1	8.0	61.0	12.7	31.7
MT 9432	BIGSKY	73.3	163.3	35.6	49.0	8.0	59.9	14.3	30.0
MTS0333	Kestrel/2*Rampart	70.8	167.0	32.7	48.9	7.7	59.5	14.2	5.0

TABLE 1. Continued **Intrastate Winter Wheat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions. Northern Agricultural Research Center. Havre, Montana. 2005. (Exp# 05-3502-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 %
ND9257	JERRY	71.2	163.7	34.1	48.6	7.8	59.3	14.0	45.0
CI 17735	NORSTAR	76.7	167.3	39.8	46.3	8.0	58.7	13.2	60.0
PI555458	PROMONTORY	59.3	164.0	27.3	45.9	8.2	61.3	13.0	41.7
CI 17860	NEELEY	71.2	163.7	30.4	44.6	7.8	60.2	14.0	56.7
PI599336	MORGAN	69.5	165.7	35.6	44.0	7.3	57.9	14.3	53.3
GM10006	GM10006	55.9	162.3	24.3	43.2	8.2	63.0	12.9	28.3
EXPERIMENTAL MEANS		70.2	163.4	30.8	55.9	7.9	60.2	12.9	32.3
LSD (0.05)		10.5	2.6	4.9	14.3	0.5	2.0	-	24.9
C.V.2: (S of MEAN / MEAN)*100		5.3	0.6	5.6	9.1	2.3	1.2	-	27.5

1/ No. of Days from January 1 (163 = June 12)
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# 05-3502-WW)							
Field	B-1-4		Soil Texture 0-6"	CL		2" Soil Temp (^{o}F) @ Plnt'g	70
Quarter	NE		Soil Texture 6-24"	CL		4" Soil Temp (^{o}F) @ Plnt'g	65
Section	32		Soil Texture 24-36"	CL		Fertilizer Formulation	Gran.Blend
Township	32N		Soil Texture 36-48"	SCL		Fertilizer Placement	Bnd at Plntg
Range	15E		Init Zn (ppm) 0-6"	0.7		Fert. Rate (lbs/ac) N	70
Latitude	N48 29.459'		Init Mn (ppm) 0-6"	4.3		Fert. Rate (lbs/ac) P2O5	40
Longitude	W109 48.021'		Init Cu (ppm) 0-6"	0.8		Fert. Rate (lbs/ac) K2O	25
Soil Series	Telstad Loam		Init Fe (ppm) 0-6"	9.4		Herbicide App. Date	4/26
pH 0-6"	7		CEC 0-6"	21.8		Herbicide Product	Bronate Adv
Org.Matter (%) 0-6"	0.9		Init PAW (in.) 0-6"	0.96		Herbicide Rate (/ac)	20 oz
Init N (lbs/ac) 0-6"	26		Init PAW (in.) 6-24"	3.46		Precip (in.) Plnt'g-Harvest	7.53
Init N (lbs/ac) 6-24"	36		Init PAW (in.) 24-36"	2.05		Precip (>.1) Plnt'g-Harvest	6.74
Init N (lbs/ac) 24-36"	32		Init PAW (in.) 36-48"	1.68		Harvest Date	8/8
Init N (lbs/ac) 36-48"	44		Init PAW (in.) 0-48"	8.14		Rooting Depth (in.)	31"
Init P (ppm) Olsen 0-6"	29		Cropping System	NT-ChmFlw		Post PAW (in.) 0-6"	0.30
Init K (ppm) 0-6"	277		Previous Crop	Wntr Wheat		Post PAW (in.) 6-24"	1.26
Init S (ppm) 0-24"	20		Planting Date	4/22		Post PAW (in.) 24-36"	1.03
Init Na (MEQ/100g) 0-6"	0.09		Planting Depth (in.)	1.50		Post PAW (in.) 36-48"	1.47
SaltHaz (MMHOS/cm) 0-6"	0.64		Moist Soil Depth @Plnt'g	48+		Post PAW (in.) 0-48"	4.06
SaltHaz(MMHOS/cm)6-24"	0.76		Dry Surf Soil (in.) @Plnt'g	0.25		Precip (>.1) Hvst-Post	0.28

TABLE 2. Ten-Year Yield Summary on Selected Entries from Dryland Intrastate Winter Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 1996-2005. (Exp# 05-3502-WW)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	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	**53.4**
GM10002	NUHORIZON (hard white)	6					61.0	24.3	36.9	36.0	71.4	66.9	49.4	115.0	**52.5**
MT00159	YELLOWSTONE	4							39.6	30.2	70.3	58.7	49.7	114.6	**52.3**
S94-4	CDC FALCON (P+)	6					66.0	26.4	38.9	30.4	69.3	62.3	48.9	113.7	**51.9**
PI619098	WAHOO	4							39.8	28.5	72.8	54.7	49.0	112.9	**51.5**
MTS0031	GENOU (sawfly resistant) (++)	4							32.6	28.7	68.7	63.8	48.5	111.7	**51.0**
GM10001	NUFRONTIER (hard white)	6					63.5	22.7	35.3	34.5	69.7	58.4	47.4	110.2	**50.3**
MT9426	PAUL (++)	7				70.0	65.4	21.8	33.6	33.3	65.0	54.8	49.1	108.5	**49.5**
ABOVE	ABOVE	4							28.1	34.5	70.6	54.5	46.9	108.2	**49.4**
CI 17879	ROCKY (P+)	10	48.6	50.0	47.0	57.4	62.7	25.3	35.6	27.6	74.7	59.9	48.9	107.1	**48.9**
QT 542	HYBRITECH 542 (P)	9	51.2	56.6	52.1	60.7	64.7	23.1	39.0	25.9	60.5		48.2	106.6	**48.6**
RH78W296	BIGHORN (P+)	10	49.4	48.8	44.8	76.7	58.0	18.4	32.5	30.2	66.1	57.1	48.2	105.7	**48.2**
PI555458	PROMONTORY (+)	10	52.9	43.2	44.3	78.3	59.1	22.9	31.6	30.1	66.2	45.9	47.5	104.0	**47.5**
MTW9441	NUSKY (hard white)	7				61.1	59.7	25.3	42.5	28.1	63.4	49.4	47.1	104.0	**47.4**
PI586806	NUWEST (+) (hard white)	10	49.1	49.1	45.9	62.3	57.9	25.2	40.5	24.2	63.9	55.2	47.3	103.7	**47.3**
PI584526	JUDITH	9	46.6	47.1	48.1	64.0	62.2	23.7	33.1	30.8	62.4		46.4	102.7	**46.8**
CI 17860	NEELEY	10	47.7	42.6	49.7	64.6	69.0	19.9	34.4	30.3	65.6	44.6	46.8	102.7	**46.8**
MT9432	BIGSKY (+)	10	50.2	45.8	50.8	65.6	54.5	21.1	32.5	29.6	64.3	49.0	46.3	101.6	**46.3**
JAGALENE	JAGALENE	3								60.7	62.4	62.1	61.7	101.5	**62.7**
BZ96-788	LEDGER	3								61.4	60.8	62.2	61.5	101.1	**62.4**
PI593889	RAMPART (sawfly resistant)	10	38.6	45.2	50.0	51.9	55.8	22.4	36.8	32.4	63.2	60.6	45.7	100.1	**45.7**
PI517194	TIBER	10	47.4	46.8	45.1	59.1	61.8	22.5	32.1	26.8	65.5	49.1	45.6	100.0	**45.6**
PI599336	MORGAN	10	48.4	49.4	44.9	59.5	56.3	20.7	37.5	26.8	58.1	44.0	44.6	97.7	**44.6**
ND9257	JERRY	5				49.1			42.9	25.5	60.6	48.6	45.3	97.5	**44.5**
PI593891	VANGUARD (sawfly resistant)	10	38.9	48.2	42.4	48.7	52.4	22.5	30.8	30.8	61.7	65.3	44.2	96.8	**44.2**
UT94415	GOLDEN SPIKE	5					59.1	17.8	33.2	27.3	64.1		40.3	96.5	**44.0**
CI 17735	NORSTAR	10	44.9	42.5	53.4	36.0	49.0	20.9	40.2	19.0	47.4	46.3	40.0	87.6	**40.0**
MEANS (For Entries Listed)			47.2	47.3	47.6	60.3	60.5	22.5	36.0	31.9	65.3	55.4			49.0
April-July Precip. (in.)			5.57	6.20	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	7.19		
Tot.Annual Precip. (in.)			10.20	12.06	12.17	14.30	10.27	8.83	13.29	11.54	14.43	11.87	11.90		
Soil NO3(lbs) to SD@Pltg			130	132	92	Pndg	Pndg	Pndg	110	150	418	138	167		
SD (Smplng Depth inches)			48	48	48	Pndg	Pndg	Pndg	48	48	48	48	48		
Fertilizer Applied (# N)	(# N)		70	70	70	70	70	70	70	70	70	70	70		
	(# P_2O_5)		40	40	40	40	40	40	40	40	40	40	40		
	(# K_2O)		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 selecton 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. 1996-2005. (Exp# 05-3502-WW)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	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	3								60.7	62.4	62.1	61.7	101.5	**62.7**
BZ96-788	LEDGER	3								61.4	60.8	62.2	61.5	101.1	**62.4**
PI555458	PROMONTORY (+)	10	62.8	64.4	64.2	64.0	62.6	61.0	59.9	61.4	60.9	61.3	62.3	100.8	**62.3**
CI 17879	ROCKY (P+)	10	62.4	64.8	64.6	62.1	62.4	60.0	59.7	62.1	62.4	61.6	62.2	100.8	**62.2**
GM10001	NUFRONTIER (hard white)	6					63.6	61.3	57.7	62.1	62.3	60.8	61.3	100.7	**62.2**
PI517194	TIBER	10	62.8	63.5	64.4	61.5	61.3	60.7	60.7	61.7	59.7	61.0	61.7	100.0	**61.7**
MT9432	BIGSKY (+)	10	62.8	63.9	64.2	62.7	61.3	60.8	60.9	61.3	58.5	59.9	61.6	99.8	**61.6**
RH78W296	BIGHORN (P+)	10	62.2	63.8	63.6	62.5	62.2	60.0	58.3	61.9	59.5	61.1	61.5	99.6	**61.5**
MTW9441	NUSKY (hard white)	7				61.3	61.8	60.3	60.0	60.7	59.3	60.3	60.5	99.3	**61.3**
PI586806	NUWEST (+) (hard white)	10	62.1	63.0	62.6	61.4	61.7	59.9	60.0	60.2	60.0	60.3	61.1	99.0	**61.1**
QT 542	HYBRITECH 542 (P)	9	62.0	63.1	64.1	62.2	61.2	58.9	59.0	60.1	59.5		61.1	98.9	**61.0**
MTS0031	GENOU (sawfly resistant) (++)	4							58.4	61.3	59.7	60.9	60.1	98.8	**61.0**
ABOVE	ABOVE	4							57.9	59.6	61.6	61.0	60.0	98.7	**61.0**
BZ9W96-919	PRYOR	5					61.8	59.1	58.8	61.9	58.4		60.0	98.6	**60.9**
PI593891	VANGUARD (sawfly resistant)	10	61.5	63.6	63.7	60.6	60.1	58.6	58.1	61.0	60.0	61.2	60.8	98.5	**60.8**
PI593889	RAMPART (sawfly resistant)	10	61.6	63.5	64.2	60.8	59.8	58.3	58.8	61.1	59.1	60.5	60.8	98.4	**60.8**
CI 17735	NORSTAR	10	62.0	61.9	63.8	59.4	61.0	59.8	59.6	61.9	59.1	58.7	60.7	98.4	**60.7**
CI 17860	NEELEY	10	61.4	62.5	63.1	62.5	61.7	58.2	57.0	61.2	59.2	60.2	60.7	98.3	**60.7**
PI599336	MORGAN	10	61.9	63.4	63.4	61.5	60.8	59.4	57.9	60.3	58.7	57.9	60.5	98.0	**60.5**
S94-4	CDC FALCON (P+)	6					61.5	57.4	57.7	59.8	60.7	60.3	59.6	97.9	**60.4**
ND9257	JERRY	5				61.1			57.7	60.5	58.8	59.3	59.5	97.7	**60.3**
MT00159	YELLOWSTONE	4							59.2	60.0	57.9	59.4	59.1	97.3	**60.1**
PI619098	WAHOO	4							57.5	60.6	59.5	59.0	59.1	97.3	**60.1**
MT9426	PAUL (++)	7				61.5	60.6	57.8	57.9	61.2	57.0	58.1	59.1	97.1	**59.9**
PI584526	JUDITH	9	60.8	62.2	62.5	61.7	59.8	58.0	57.9	58.6	57.5		59.9	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)			62.0	63.4	63.7	61.7	61.5	59.5	58.7	60.9	59.7	60.4			61.1
April-July Precip. (in.)			5.57	6.20	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	7.19		
Tot.Annual Precip. (in.)			10.20	12.06	12.17	14.30	10.27	8.83	13.29	11.54	14.43	11.87	11.90		
Soil NO3(lbs) to SD@Pltg			130	132	92	Pndg	Pndg	Pndg	110	150	418	138	167		
SD (Smplng Depth inches)			48	48	48	Pndg	Pndg	Pndg	48	48	48	48	48		
Fertilizer Applied (# N)	(# N)		70	70	70	70	70	70	70	70	70	70	70		
	(# P_2O_5)		40	40	40	40	40	40	40	40	40	40	40		
	(# K_2O)		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 selecton 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. 2005. (Exp# 05-3102-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	94.1	175.3	29.1	60.0	10.0	58.2	13.5	0.0
BZ9M1044	HANK*4/IMI GRANDIN*4//TEA	88.5	175.3	26.6	59.9	10.1	59.9	12.9	0.0
MT 0411	REEDER//MCNEAL/MT9406	91.7	173.0	28.5	59.6	10.2	58.6	11.9	5.0
MT 0245	MT9433/ND695	93.8	177.7	34.1	59.3	10.0	57.8	13.4	0.0
MT 0405	REEDER/MT9806	94.1	175.3	28.8	59.1	10.0	59.3	12.8	6.7
PI632252	OUTLOOK	96.2	177.3	29.5	58.9	9.5	58.0	12.7	3.3
BZ998447	SPILLMAN/906R	89.2	174.7	29.2	58.8	9.6	55.4	13.0	8.3
MT 0336	MT9609/MT9806	92.4	176.3	29.9	58.5	10.2	59.4	12.5	3.3
MT 0260	MT9653/ND695	91.7	179.0	31.4	58.3	10.0	58.6	12.8	5.0
PI633974	CHOTEAU (sawfly resistant) (P+)	92.3	176.3	29.3	58.0	10.3	58.7	12.9	3.3
MT 0412	REEDER//MCNEAL/MT9406	89.9	172.7	28.1	57.6	10.0	58.6	13.1	5.0
BZ992592	MCNEAL/906R	92.7	178.0	26.0	57.2	10.0	58.8	13.6	3.3
BZ992588	CONAN (swfly tolerant)	87.5	177.3	28.0	57.1	9.8	59.4	13.7	1.7
MT 0342	MT9719/MT9715	92.4	177.0	27.7	56.1	10.4	60.2	12.1	1.7
MT 0408	REEDER/MT9850	90.7	178.3	33.4	55.0	10.2	58.5	11.8	10.0
MT 0416	REEDER//MT9410/MTRWA116	93.0	176.0	30.0	54.5	9.9	57.7	12.7	8.3
BZ992322	HANK	87.2	174.7	28.7	54.3	9.6	55.2	14.4	6.7
MT 0423	MT9802//MT9408/MT9406	85.4	174.3	30.5	54.1	10.1	58.3	13.4	8.3
MT 0460	MT9954/REEDER	89.2	176.0	30.8	54.1	9.6	58.8	13.9	11.7
MT 0433	MT9806//MCNEAL/MT9406	88.5	173.7	28.6	54.0	10.1	58.2	12.1	6.7
BZ996472	AGAWAM	90.6	173.7	28.4	53.8	10.3	59.9	12.7	3.3
MT 0345	MT9754/SCHOLAR	95.1	177.7	31.4	53.2	9.8	57.4	14.1	1.7
MT 0431	MT9806//MCNEAL/MT9406	90.6	172.7	26.1	53.1	10.1	59.3	12.9	8.3
ACS52610	WPB GERMANY	89.9	179.7	27.2	53.0	10.3	60.1	13.1	16.7
BZ9M1024	TRIANGLE*3/TEAL11-A	92.4	175.0	27.1	52.9	9.9	57.6	13.7	1.7
MT 0417	REEDER//MT9410/MTRWA116	92.7	173.7	29.8	52.8	9.9	57.6	13.8	8.3
ALSEN	ALSEN	91.7	174.0	29.8	52.8	10.1	58.8	13.8	8.3
MT 0476	MTHW9520/MTHW9417//MCNEAL	91.7	178.7	30.5	52.4	10.1	56.0	12.5	1.7
MT 0464	MCNEAL/MT9406/3/REDWIN/LE	90.6	172.0	33.8	52.1	10.5	59.0	12.6	18.3
ND 695	REEDER	91.0	176.0	30.6	51.9	9.8	58.6	13.4	5.0
MT 0465	REDWIN/LEW//MT9406/3/MCNE	91.7	172.3	32.3	51.9	10.1	60.3	13.2	8.3
MT 0425	MT9802//MT9408/MT9406	93.1	173.3	30.7	51.8	9.7	56.7	13.1	6.7
PI574642	McNEAL	93.0	178.0	28.6	51.8	9.7	57.3	14.2	6.7
MTHW0202	ID377S/MTHW9701	89.6	172.3	29.4	51.7	10.0	58.3	13.5	8.3
BZ996444	TRIPLE IV	91.0	173.7	29.4	51.4	10.1	57.6	12.5	5.0
MT 0421	MT9802//MT9408/MT9406	88.5	177.3	26.4	51.0	9.4	56.4	13.8	3.3
TRIGEN1	BANTON	86.1	171.7	29.8	51.0	10.1	60.7	13.9	20.0
TRIGEN2	BUCK PRONTO	87.1	173.3	29.2	50.7	9.9	57.5	13.6	6.7
AGRIPRO1	NORPRO	92.7	176.7	27.5	50.3	9.8	56.8	12.7	8.3
MT 0413	REEDER//MCNEAL/MT9406	91.7	173.3	29.9	49.9	10.1	58.1	12.9	8.3
CI 13596	FORTUNA (sawfly resistant)	95.5	175.0	34.3	49.7	10.4	59.2	13.0	6.7
MT 0318	MT9609/SCHOLAR	88.9	175.0	31.1	49.5	10.2	58.7	13.1	6.7
MT 0414	MT9408/MT9406//REEDER	91.3	174.7	30.0	48.8	9.8	57.3	14.0	11.7

TABLE 4. Continued **Advanced Yield Spring Wheat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions. Northern Agricultural Research Center. Havre, Montana. 2005. (Exp# 05-3102-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 %
AGRIPRO3	FREYR	80.5	177.0	28.9	48.8	10.0	58.8	12.7	16.7
MT 0315	MT9609/SCHOLAR	91.7	178.0	33.4	48.7	9.9	57.2	13.3	5.0
MT 0266	ND695/MT9755	88.9	174.7	29.8	48.6	9.6	54.3	14.2	11.7
MT 0410	MT9904/REEDER	94.1	176.7	29.5	47.9	9.8	57.9	14.2	8.3
AGRIPRO5	01II 27-20-1 CL	91.7	175.7	32.4	47.7	10.2	58.2	13.7	8.3
MT 0401	MCNEAL//MT9410/MTRWA116	90.3	173.7	28.7	47.7	9.7	58.7	14.4	8.3
MT 0459	MT9954/REEDER	85.8	176.0	30.3	47.3	10.2	59.5	13.7	8.3
PI619086	EXPLORER (hrd wht) (+)	93.1	173.7	26.7	47.2	9.6	56.7	14.5	5.0
MT 0418	REEDER//MT9410/MTRWA116	92.7	173.7	29.8	46.9	9.7	56.4	14.3	8.3
AGRIPRO2	KNUDSON	93.1	177.7	27.2	46.7	9.8	57.5	14.4	6.7
MTHW0471	MTHW9701/MTHW9904	85.8	179.3	32.0	46.6	10.1	58.9	14.4	6.7
PI607557	SCHOLAR (mod. Sawfly resistant)	93.1	179.0	33.1	45.8	9.8	58.3	15.3	13.3
PI592761	ERNEST (sawfly resistant)	94.4	176.3	32.6	45.0	9.9	56.9	13.1	5.0
MT 0415	MT9408/MT9406//REEDER	90.3	175.3	29.6	43.6	9.8	58.0	14.4	11.7
MT 0325	MT9609/SCHOLAR	94.8	176.3	33.6	43.4	10.0	59.1	13.9	8.3
MT 0313	MT9609/SCHOLAR	93.1	178.0	28.9	42.8	9.9	56.8	13.7	5.0
MT 0319	MT9609/SCHOLAR	90.6	175.7	30.6	41.9	9.8	56.5	14.1	8.3
MT 0461	MT9954/MT9904	83.7	177.7	31.3	41.7	9.8	58.0	14.0	11.7
MT 0432	MT9806//MCNEAL/MT9406	93.7	175.7	32.9	40.9	9.5	55.8	14.4	6.7
SX1504B	SEEDEX 1504B	82.6	180.0	26.1	40.9	9.6	56.9	13.5	15.0
CI 10003	THATCHER	95.5	177.3	37.9	39.3	9.8	55.8	14.2	11.7
EXPERIMENTAL MEANS		90.9	175.7	30.0	51.3	9.9	58.0	13.4	7.3
LSD (0.05)		6.6	1.9	4.9	7.8	0.3	1.7	-	5.8
C.V.2: (S of MEAN / MEAN)*100		2.6	0.4	5.9	5.5	1.0	1.1	-	28.4

1/ No. of Days from January 1 (176 = June 25))
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# 05-3102-SW)							
Field	B-1-2		Soil Texture 0-6"	CL		2" Soil Temp (^{o}F) @ Plnt'g	56F
Quarter	NE		Soil Texture 6-24"	CL		4" Soil Temp (^{o}F) @ Plnt'g	51F
Section	32		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 29.617'		Init Mn (ppm) 0-6"	24.5		Fert. Rate (lbs/ac) P2O5	40
Longitude	W109 48.024'		Init Cu (ppm) 0-6"	1.2		Fert. Rate (lbs/ac) K2O	25
Soil Series	Joplin L Cal		Init Fe (ppm) 0-6"	11.8		Herbicide App. Date	6/21
pH 0-6"	7		CEC 0-6"	21.8		Herbicide Product	Bronate Adv.
Org.Matter (%) 0-6"	1.5		Init PAW (in.) 0-6"	0.96		Herbicide Rate (/ac)	18 oz
Init N (lbs/ac) 0-6"	16		Init PAW (in.) 6-24"	3.56		Precip (in.) Plnt'g-Harvest	6.95
Init N (lbs/ac) 6-24"	42		Init PAW (in.) 24-36"	1.98		Precip (>.1) Plnt'g-Harvest	6.24
Init N (lbs/ac) 24-36"	32		Init PAW (in.) 36-48"	1.96		Harvest Date	8/17
Init N (lbs/ac) 36-48"	52		Init PAW (in.) 0-48"	8.47		Rooting Depth (in.)	33"
Init P (ppm) Olsen 0-6"	27		Cropping System	NT-ChmFlw		Post PAW (in.) 0-6"	0.24
Init K (ppm) 0-6"	232		Previous Crop	Wntr Wht		Post PAW (in.) 6-24"	1.41
Init S (ppm) 0-24"	15		Planting Date	4/22		Post PAW (in.) 24-36"	1.00
Init Na (MEQ/100g) 0-6"	0.07		Planting Depth (in.)	1.5		Post PAW (in.) 36-48"	1.40
SaltHaz (MMHOS/cm) 0-6"	0.35		Moist Soil Depth @Plnt'g	48+		Post PAW (in.) 0-48"	4.05
SaltHaz(MMHOS/cm)6-24"	0.45		Dry Surf Soil (in.) @Plnt'g	0.25		Precip (>.1) Hvst-Post	0.64

TABLE 5. Ten-Year Yield Summary on Selected Entries from Dryland Advanced Spring Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 1996-2005. (Exp# 05-3102-SW)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	AVE. for YEARS TESTED	% of CHECK YIELD 3/	**10-YR COMP. AVE. YIELD 4/**
MT 0245	MT9433/ND695	3								15.2	51.8	59.3	42.1	155.3	**46.9**
PI632252	OUTLOOK (+)	7				44.1	41.0	22.9	43.4	15.7	49.4	58.9	39.4	139.9	**42.3**
BZ996472	AGAWAM	7				44.7	37.8	18.6	37.7	11.5	52.6	53.8	36.7	130.4	**39.4**
ND695	REEDER (+)	7				49.1	43.3	22.5	34.9	13.0	40.3	51.9	36.4	129.5	**39.1**
PI574642	McNEAL	10	36.6	54.4	44.9	49.2	40.2	18.9	36.5	13.2	40.4	51.8	38.6	127.8	**38.6**
BZ992322	HANK (P+)	6					41.7	20.5	36.4	11.0	44.7	54.3	34.8	126.9	**38.3**
BZ992588	CONAN (P+) sawfly tolerant)	9	36.7	48.0		47.8	36.0	20.4	33.7	13.9	42.7	57.1	37.4	125.3	**37.9**
PI607557	SCHOLAR (+) (mod sawfly res)	10	38.5	52.1	45.5	42.2	38.5	21.0	36.8	11.0	44.1	45.8	37.5	124.3	**37.5**
PI633974	CHOTEAU (++) (sawfly resistant)	6					34.2	19.3	35.7	12.7	43.2	58.0	33.8	123.5	**37.3**
PI549275	HI-LINE	9	45.8	45.0	40.0	45.3	37.6	19.7	36.0	11.1	40.7		35.7	122.2	**36.9**
CI17430	NEWANA	9	39.0	52.1	39.3	45.9	35.6	21.5	38.5	12.1	35.7		35.5	121.7	**36.7**
BZ996434	BORDER/CONAN	4						20.0	35.4	10.3	48.6		28.6	120.6	**36.4**
AGRIPRO1	NORPRO	4							35.5	8.9	39.9	50.3	33.6	116.4	**35.2**
PI592761	ERNEST (+) (sawfly res)	10	35.7	47.1	35.7	39.9	37.3	19.6	36.1	12.7	39.5	45.0	34.9	115.4	**34.9**
PI619086	EXPLORER (hrd wht) (+)	5						19.8	36.7	13.1	35.8	47.2	30.5	113.9	**34.4**
WB926	WB 926 (P)	9	33.9	46.1	33.7	41.9	38.0	18.7	30.4	9.8	42.0		32.7	112.1	**33.9**
CI13596	FORTUNA (sawfly resistant)	10	33.6	44.0	40.1	35.9	35.9	16.7	29.9	9.5	42.0	49.7	33.7	111.7	**33.7**
MTHW0002	MTHW9520/MTHW9427	5					33.0	18.3	31.7	11.0	42.0		27.2	108.6	**32.8**
AGRIPRO2	KNUDSON	4							31.6	7.6	38.8	46.7	31.2	107.9	**32.6**
PI527682	AMIDON (mod sawfly res)	9	35.3	47.6	47.3	4.0	35.9	22.2	40.6	11.1	38.2		31.4	107.4	**32.4**
PI612605	MTHW9420 (hrd wht)	6				35.6	38.7	16.4	30.8	7.9	38.5		28.0	106.5	**32.2**
CI10003	THATCHER	10	31.0	40.5	33.6	32.5	30.4	18.4	34.2	6.9	35.2	39.3	30.2	100.0	**30.2**
MEANS (For Entries Listed)			36.6	47.7	40.0	39.9	37.4	19.8	35.4	11.3	42.1	51.3			36.3
April-July Precip. (in.)			5.17	5.65	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	7.09		
Tot.Annual Precip. (in.)			10.2	12.06	12.17	14.3	10.27	8.83	13.29	11.54	14.43	11.87	11.90		
Soil N (lbs) to SD @PLtg			130	116	140	Pndg	Pndg	Pndg	98	44	86	142	108		
SD (Smplng Depth 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 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 selecton 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. 1996-2005. (Exp# 05-3102-SW)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	AVE. for YEARS TESTED	% of CHECK TEST WT 3/	**10-YR COMP. AVE. TEST WT 4/**
BZ996472	AGAWAM	7				60.5	60.6	60.0	61.2	60.3	63.0	59.9	60.8	111.0	**61.8**
BZ996434	BORDER/CONAN	4						57.4	60.9	57.7	60.1		59.0	108.4	**60.3**
MT0245	MT9433/ND695	3								55.9	58.6	57.8	57.4	107.8	**60.0**
PI607557	SCHOLAR (+) (mod sawfly res)	10	61.8	61.3	62.3	58.1	60.7	59.4	61.3	57.3	58.7	58.3	59.9	107.6	**59.9**
BZ992588	CONAN (P+) (sawfly tolerant)	9	61.6	61.5		58.2	59.4	59.5	61.1	56.6	59.9	59.4	59.7	107.6	**59.9**
ND695	REEDER (+)	7				58.6	60.1	58.2	60.6	57.4	58.9	58.6	58.9	107.6	**59.9**
AGRIPRO2	KNUDSON	4							60.5	57.4	59.0	57.5	58.6	107.4	**59.8**
AGRIPRO1	NORPRO	4							61.8	57.1	58.4	56.8	58.5	107.3	**59.7**
PI633974	CHOTEAU (++) (sawfly resistant)	6					58.5	57.0	60.2	57.8	59.5	58.7	58.6	106.7	**59.4**
CI13596	FORTUNA (sawfly resistant)	10	62.2	60.4	62.6	57.9	59.2	57.2	59.2	56.8	59.2	59.2	59.4	106.7	**59.4**
PI592761	ERNEST (+) (sawfly res)	10	62.0	61.4	61.9	57.4	59.7	58.0	60.0	56.8	59.4	56.9	59.3	106.6	**59.3**
PI527682	AMIDON (mod sawfly res)	9	61.2	61.0	60.9	57.0	59.1	57.7	59.8	57.1	59.1		59.2	106.4	**59.2**
PI619086	EXPLORER (hrd wht) (+)	5						58.0	60.3	56.8	58.5	56.7	58.1	106.1	**59.1**
CI17430	NEWANA	9	61.0	60.2	60.5	55.0	57.7	59.6	62.0	56.2	58.8		59.0	106.0	**59.0**
WB926	WB 926 (P)	9	61.3	59.0	60.9	56.6	56.5	58.3	60.3	56.7	57.8		58.6	105.3	**58.6**
PI549275	HI-LINE	9	60.3	59.5	61.6	57.1	56.0	56.4	60.7	56.6	56.9		58.3	104.8	**58.3**
BZ992322	HANK (P+)	6					57.3	57.7	59.6	56.5	58.3	55.2	57.4	104.6	**58.2**
PI632252	OUTLOOK (+)	7				56.6	56.9	56.9	59.9	54.3	57.6	58.0	57.2	104.4	**58.1**
PI612605	MTHW9420 (hrd wht)	6				54.5	57.1	57.0	60.6	55.8	54.4		56.6	103.6	**57.7**
MTHW0002	MTHW9520/MTHW9427	5					55.3	56.7	59.8	55.5	56.0		56.7	103.5	**57.6**
PI574642	McNEAL	10	57.8	58.7	59.1	56.6	57.4	57.7	60.1	54.0	57.0	57.3	57.6	103.4	**57.6**
CI10003	THATCHER	10	58.2	57.7	57.5	53.8	55.9	55.5	58.3	50.3	53.8	55.8	55.7	100.0	**55.7**
MEANS (For Entries Listed)			60.8	60.1	60.8	57.0	58.1	57.8	60.4	56.4	58.3	57.8			59.0
April-July Precip. (in.)			5.17	5.65	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	7.09		
Tot.Annual Precip. (in.)			10.2	12.06	12.17	14.3	10.27	8.83	13.29	11.54	14.43	11.87	11.90		
Soil N (lbs) to SD @PLtg			130	116	140	Pndg	Pndg	Pndg	98	44	86	142	108		
SD (Smplng Depth 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 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 selecton 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. 2005. (Exp# 05-9802-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 %
D91080	PLAZA	86.5	179.7	26.9	50.3	9.0	56.3	16.4	0.0
ACAVONLE	AC AVONLEA	92.4	178.3	34.5	49.9	8.6	56.5	17.8	0.0
PI574642	McNEAL (hrsw check)	93.8	178.3	30.6	49.0	8.7	56.7	15.9	5.0
DILSE	DILSE	91.3	179.0	34.6	48.6	9.0	57.6	18.3	1.7
D89135	MAIER	92.4	179.7	31.7	48.5	9.0	57.7	16.7	3.3
PI478289	MONROE	90.6	174.0	35.3	47.8	9.0	56.6	17.9	5.0
D901313	MOUNTRAIL	91.0	180.3	33.4	46.7	8.8	55.6	18.2	0.0
D901442	LEBSOCK	94.5	177.3	33.0	46.6	9.1	58.2	17.0	3.3
YU894-75	ALZADA	90.3	174.0	27.2	46.2	8.5	55.3	16.5	0.0
CANKYLE	KYLE	91.3	180.0	31.5	46.0	9.3	58.8	17.0	1.7
NDMUNICH	MUNICH	94.8	179.7	31.1	44.9	9.0	56.8	17.1	1.7
CI 17789	VIC	89.9	178.0	35.9	44.6	9.2	58.9	16.9	1.7
PIERCE	PIERCE	88.9	179.0	33.2	41.9	8.9	57.5	17.8	1.7
D87130	BEN	88.9	179.0	36.1	41.2	9.0	57.9	18.3	0.0
EXPERIMENTAL MEANS		91.2	178.3	32.5	46.6	8.9	57.2	17.3	1.8
LSD (0.05)		6.1	1.5	4.5	8.7	0.3	1.8	-	3.9
C.V.2: (S of MEAN / MEAN)*100		2.3	0.3	4.8	6.4	1.1	1.1	-	75.5

1/ No. of Days from January 1 (178 = June 27)
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# 05-9802-SW)							
Field	B-1-2		Soil Texture 0-6"	CL		2" Soil Temp (^{o}F) @ Plnt'g	69F
Quarter	NE		Soil Texture 6-24"	CL		4" Soil Temp (^{o}F) @ Plnt'g	61F
Section	32		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 29.632'		Init Mn (ppm) 0-6"	24.5		Fert. Rate (lbs/ac) P2O5	40
Longitude	W109 48.023		Init Cu (ppm) 0-6"	1.2		Fert. Rate (lbs/ac) K2O	25
Soil Series	Joplin L Cal		Init Fe (ppm) 0-6"	11.8		Herbicide App. Date	6/21
pH 0-6"	7		CEC 0-6"	21.8		Herbicide Product	Bronate Adv.
Org.Matter (%) 0-6"	1.5		Init PAW (in.) 0-6"	0.96		Herbicide Rate (/ac)	18 oz
Init N (lbs/ac) 0-6"	16		Init PAW (in.) 6-24"	3.56		Precip (in.) Plnt'g-Harvest	6.95
Init N (lbs/ac) 6-24"	42		Init PAW (in.) 24-36"	1.98		Precip (>.1) Plnt'g-Harvest	6.24
Init N (lbs/ac) 24-36"	32		Init PAW (in.) 36-48"	1.96		Harvest Date	8/17
Init N (lbs/ac) 36-48"	52		Init PAW (in.) 0-48"	8.47		Rooting Depth (in.)	30"
Init P (ppm) Olsen 0-6"	27		Cropping System	NT-ChmFlw		Post PAW (in.) 0-6"	0.25
Init K (ppm) 0-6"	232		Previous Crop	Wntr Wht		Post PAW (in.) 6-24"	1.51
Init S (ppm) 0-24"	15		Planting Date	4/22		Post PAW (in.) 24-36"	1.15
Init Na (MEQ/100g) 0-6"	0.07		Planting Depth (in.)	1.25		Post PAW (in.) 36-48"	1.47
SaltHaz (MMHOS/cm) 0-6"	0.35		Moist Soil Depth @Plnt'g	48+		Post PAW (in.) 0-48"	4.38
SaltHaz(MMHOS/cm)6-24"	0.45		Dry Surf Soil (in.) @Plnt'g	0.25		Precip (>.1) Hvst-Post	0.64

TABLE 8. Ten-Year Yield Summary on Selected Entries from Dryland Montana Spring Durum Nursery. Northern Agricultural Research Center. Havre, Montana. 1996-2005. (Exp# 05-9802-SW)

VARIETY or SELECTION		No. of YEARS TESTED	1/ YIELD (Bushels Per Acre) 1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	AVE. for YEARS TESTED	% of CHECK YIELD 2/	**10-Yr COMP. AVE. YIELD 3/**
CANPLENTY	PLENTY	5	39.1	48.9	33.1	35.8	32.9						38.0	121.1	**39.6**
DT433	MEDORA	7	34.7	43.5	34.7	40.1	34.8	16.5	39.5				34.8	114.8	**37.6**
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	114.3	**37.4**
ACAVONLE	AC AVONLEA (+)	5						21.4	40.3	8.1	44.7	49.9	32.9	113.0	**37.0**
CI15892	WARD	7	34.4	43.2	32.4	37.1	32.8	18.3	37.9				33.7	111.2	**36.4**
DILSE	DILSE	3								11.1	41.4	48.6	33.7	110.9	**36.3**
YU894-75	ALZADA	5						18.9	39.2	9.1	47.7	46.2	32.2	110.7	**36.2**
WPBLAKER	LAKER	8	38.4	43.5	33.5	45.7	37.1	22.2	39.9	12.7			34.1	110.5	**36.2**
D901313	MOUNTRAIL (+)	7				41.4	34.6	18.9	39.5	11.6	44.3	46.7	33.9	110.1	**36.1**
D89135	MAIER (+)	7				45.2	34.3	15.7	39.0	10.0	43.5	48.5	33.7	109.7	**35.9**
D91080	PLAZA (+)	6					33.8	19.1	38.0	12.4	41.8	50.3	32.6	109.3	**35.8**
CANKYLE	KYLE	10	38.1	43.5	32.4	39.6	31.4	20.5	36.7	12.5	49.9	46.0	35.1	107.1	**35.1**
D901442	LEBSOCK (+)	6					35.1	16.3	35.2	10.5	46.7	46.6	31.7	106.5	**34.9**
97DU2	UTOPIA	7		49.2	31.5	49.0	35.4	12.1	37.6	11.1			32.3	106.4	**34.8**
NDMUNICH	MUNICH (+)	10	35.2	43.1	32.7	42.6	36.0	17.0	38.7	10.6	40.4	44.9	34.1	104.2	**34.1**
PI510696	RENVILLE	8	35.3	45.2	35.1	38.0	32.9	21.5	37.8	11.6			32.2	104.2	**34.1**
PIERCE	PIERCE	3								11.6	40.6	41.9	31.4	103.2	**33.8**
PI478289	MONROE	10	35.5	45.5	28.8	40.0	35.0	16.9	33.7	7.1	43.4	47.8	33.4	101.9	**33.4**
D87130	BEN (+)	10	35.8	43.7	36.5	38.9	33.8	15.8	35.9	8.4	41.3	41.2	33.1	101.2	**33.1**
PI476211	LLOYD	4	33.0	41.6	36.1	38.9							37.4	100.7	**33.0**
CI17789	VIC	10	34.8	43.1	34.3	36.4	33.2	19.1	35.3	10.9	35.7	44.6	32.7	100.0	**32.7**
DT380	SCEPTRE	5			33.2	40.4	30.2	16.1	31.2				30.2	95.5	**31.3**
MEANS (For Entries Listed)			35.8	44.8	33.9	40.8	34.5	18.1	37.5	10.9	43.0	46.6			35.0
April-July Precip. (in.)			5.17	5.65	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	7.09		
Tot.Annual Precip. (in.)			10.20	12.06	12.17	14.30	10.27	8.83	13.29	11.54	14.43	11.87	11.90		
Soil NO3 (lbs.) to SD at Planting			130	116	140	Pndg	Pndg	Pndg	98	46	86	142	108		
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		
	(# P_2O_5)		40	40	40	40	40	40	40	40	40	40	40		
	(# K_2O)		25	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 selecton 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. Ten-Year Test Weight Summary on Selected Entries from Dryland Montana Spring Durum Nursery. Northern Agricultural Research Center. Havre, Montana. 1996-2005. (Exp# 05-9802-SW)

VARIETY or SELECTION		No. of YEARS TESTED	1/TEST WEIGHT (Pounds Per Bushel) 1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	AVE. for YEARS TESTED	% of CHECK TEST WT 2/	**10-YR COMP. AVE. TEST WT 3/**
WPBLAKER	LAKER	8	62.0	61.3	59.8	60.4	60.2	62.4	62.3	58.3			60.8	101.1	**60.8**
D87130	BEN (+)	10	62.1	61.3	60.9	59.5	60.0	60.6	62.3	57.5	60.8	57.9	60.3	100.2	**60.3**
D901442	LEBSOCK (+)	6					60.4	61.2	62.3	58.2	61.4	58.2	60.3	100.1	**60.2**
DT433	MEDORA	7	61.7	61.3	60.7	58.3	60.7	59.7	61.3				60.5	100.1	**60.2**
CI17789	VIC	10	60.1	60.1	60.3	60.0	60.5	60.2	62.2	58.1	61.5	58.9	60.2	100.0	**60.2**
PI510696	RENVILLE	8	60.5	59.8	60.4	59.7	59.4	60.3	61.7	57.4			59.9	99.6	**59.9**
CANKYLE	KYLE	10	60.7	60.2	58.7	59.2	59.1	61.7	62.9	57.7	59.7	58.8	59.9	99.5	**59.9**
CI15892	WARD	7	61.8	61.2	60.1	55.5	59.8	60.3	61.6				60.0	99.3	**59.7**
97DU2	UTOPIA	7		58.5	61.0	59.1	59.2	60.2	61.6	57.9			59.6	99.1	**59.6**
ACAVONLE	AC AVONLEA (+)	5						61.2	62.8	56.8	60.2	56.5	59.5	98.9	**59.5**
D89135	MAIER (+)	7				59.9	59.1	60.8	62.1	56.6	60.0	57.7	59.5	98.8	**59.5**
PI478289	MONROE	10	61.3	59.4	60.3	58.6	59.9	59.2	61.0	56.7	59.8	56.6	59.3	98.5	**59.3**
D91080	PLAZA (+)	6					59.3	61.5	62.0	57.1	59.7	56.3	59.3	98.5	**59.3**
PIERCE	PIERCE	3								57.4	60.8	57.5	58.5	98.4	**59.2**
CANPLENTY	PLENTY	5	60.4	59.6	57.9	58.5	59.4						59.2	98.3	**59.1**
PI476211	LLOYD	4	61.7	59.1	57.6	57.9							59.1	98.3	**59.1**
YU894-75	ALZADA	5						60.9	61.4	58.1	58.8	55.3	58.9	97.9	**58.9**
NDMUNICH	MUNICH (+)	10	60.2	59.8	58.8	58.1	59.1	59.6	60.4	55.4	59.4	56.8	58.8	97.6	**58.8**
DILSE	DILSE	3								56.9	59.7	57.6	58.1	97.6	**58.8**
D901313	MOUNTRAIL (+)	7				58.8	58.8	60.1	61.7	56.7	59.2	55.6	58.7	97.5	**58.7**
DT380	SCEPTRE	5			57.6	58.2	58.9	59.2	60.7				58.9	97.2	**58.5**
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	96.2	**57.9**
MEANS (For Entries Listed)			61.1	60.0	59.4	58.7	59.5	60.4	61.7	57.2	60.1	57.2			59.4
April-July Precip. (in.)			8.57	5.65	8.78	8.57	6.01	4.81	8.87	7.07	8.64	7.37	7.43		
Tot.Annual Precip. (in.)			14.30	12.06	12.17	14.30	10.27	8.83	13.29	11.54	14.43	11.87	12.31		
Soil NO3 (lbs.) to SD at Planting			130	116	140	Pndg	Pndg	Pndg	98	46	86	142	103		
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		
	(# P_2O_5)		40	40	40	40	40	40	40	40	40	40	40		
	(# K_2O)		25	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 selecton 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. Intrastate Spring Barley Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions at Northern Agricultural Research Center. Havre, Montana. 2005. (Exp# 05-2102-SB)

ID	CULTIVAR or SELECTION	STAND %	1/ HEAD DATE	PLNT HT Inches	2/ YIELD Bu/Ac	MOIST %	TEST WT Lbs/Bu	PLUMP %	THIN %	3/ PROTEIN %
MT030063	MT950155/Harrington	94.5	181.7	31.8	100.7	10.0	51.0	82.8	5.5	14.9
YU501385	Baronesse/Camas	93.1	179.3	31.4	94.4	10.1	50.9	68.5	9.7	13.9
MT020167	MT960225/H3860224	99.3	183.0	29.7	92.4	10.1	50.2	78.3	7.9	15.0
MT020064	MT910160/H1851195	95.1	179.0	30.3	92.4	9.9	50.3	82.0	6.4	16.2
MT030081	MT950186/MT960226	93.1	180.7	27.1	92.0	10.0	50.3	72.4	9.2	15.4
BZ596117	Boulder	98.6	188.0	29.3	91.0	10.0	50.8	80.3	7.9	15.7
MT030003	Harrington/MT950102	96.5	178.3	31.3	90.8	9.8	48.8	79.8	6.2	15.7
MT030039	Logan/MT960101	92.0	177.0	28.2	90.3	10.1	49.7	68.8	13.1	15.9
MT010081	MT886610/H1851195	94.4	179.0	29.8	89.0	10.0	48.7	57.8	14.2	16.7
P952R522	Spaulding (PB1-955-2R-522	94.8	182.7	27.9	88.2	9.8	47.2	31.6	31.1	15.1
MT020155	MT960225/H1851195	94.8	177.7	31.4	87.2	9.7	48.6	63.8	13.0	15.2
MT020204	MTLB 32/H1851195	96.2	180.0	31.0	87.2	10.2	50.5	69.1	12.3	16.1
MT020205	MTLB 32/H1851195	89.9	181.3	32.1	87.0	9.9	49.1	64.5	14.9	17.5
MT030182	MTLB 6/MT960222	92.4	186.7	27.2	86.4	10.0	48.3	48.3	18.9	17.5
MT000047	Chinook/MT920161	99.0	180.0	30.5	86.1	9.8	48.0	60.5	15.5	16.3
MT030079	MT950186/MT960225	97.2	180.7	30.3	86.1	9.8	49.7	50.7	18.5	15.3
MT030107	MT960101/MT960225	93.0	186.3	26.1	85.0	9.9	46.9	33.9	30.9	16.5
MT010080	MT886610/H1851195	89.6	179.7	29.0	84.3	10.0	48.7	67.6	13.3	16.8
MT970229	MT890021/Stark	91.0	185.7	29.3	84.2	9.9	50.5	77.7	7.3	15.8
MT000040	Chinook/MT920161	96.9	183.0	28.0	83.9	10.0	50.1	63.8	14.8	16.8
MT950186	Haxby	91.3	178.0	33.3	83.7	10.0	50.9	67.9	12.2	15.8
MT030042	MT910189/MT960099	97.9	183.3	28.0	83.1	10.0	47.5	29.5	34.3	16.1
MT030153	MTLB 5/MT940053	96.2	180.0	29.6	82.7	10.1	51.3	66.3	10.5	15.8
PI568246	Baronesse	98.6	188.0	27.4	82.4	9.7	45.8	49.4	23.0	16.7
YU587432	Baronesse/ORCA	97.6	182.0	26.4	82.3	9.8	48.1	35.5	27.1	15.5
MT020162	MT960225/H1851195	96.9	179.3	32.4	82.2	9.8	49.3	74.0	8.0	15.5
MT030051	MT910189/MTLB 06	96.5	184.3	28.2	82.0	10.0	49.2	53.0	18.2	16.7
PI491534	Gallatin	91.7	178.3	32.7	82.0	9.8	48.6	65.9	17.8	16.4
MT010213	MT920073/Logan	92.0	186.0	26.4	81.7	10.1	50.0	68.9	12.0	17.5
MT030137	MTLB 2/MT940053	97.2	183.3	29.4	81.5	10.0	49.1	64.4	15.9	17.2
MT000125	MT910189/Lewis	97.9	182.3	30.8	81.4	6.7	53.1	66.9	13.0	15.9
MT970116	Klages/Baronesse	86.8	179.3	35.1	81.4	9.9	50.7	74.6	9.5	16.0
MT030144	MTLB 5/Harrington	92.7	186.7	30.2	81.4	10.0	49.5	64.0	14.4	16.1
6B952482	Tradition	90.6	175.7	30.8	81.3	9.6	46.7	67.1	15.5	15.1
MT030188	MTLB 13/MT950102	95.1	180.3	28.9	80.9	9.7	50.2	65.1	14.1	15.6
MT020166	MT960225/H3860224	94.1	187.0	27.7	80.8	9.9	48.9	76.1	9.8	14.9
MT010158	MT920041/Harrington	93.4	184.0	30.9	80.7	10.0	50.9	83.7	5.9	16.7
MT030035	Logan/MT960099	89.2	184.0	27.8	80.4	9.8	47.1	62.1	15.3	15.5
MT000138	MT920041/H1851195	94.8	176.7	29.3	80.1	9.9	50.0	82.7	5.6	16.8
MT010160	MT920041/Harrington	83.3	181.0	30.0	80.0	9.9	49.1	66.7	12.8	17.3
MT981060	Hays	98.6	190.0	29.0	79.9	9.4	44.1	53.3	23.2	17.0
2B965057	Conrad	97.6	189.3	28.4	78.9	9.8	47.1	58.4	17.6	16.4
MT910189	ND 7293/Bearpaw	97.2	179.0	29.1	78.5	9.9	48.0	46.7	22.6	16.2

TABLE 10. Intrastate Spring Barley Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland
Continued **Fallow Conditions at Northern Agricultural Research Center. Havre, Montana. 2005.**
(Exp# 05-2102-SB)

ID	CULTIVAR or SELECTION	STAND %	1/ HEAD DATE	PLNT HT Inches	2/ YIELD Bu/Ac	MOIST %	TEST WT Lbs/Bu	PLUMP %	THIN %	3/ PROTEIN %
MT030036	Logan/MT960099	93.1	183.7	26.8	78.0	9.8	48.5	61.7	15.7	17.1
MT981210	MT910150/Stark	95.1	181.0	29.7	77.6	9.8	47.6	60.4	14.8	17.0
MT030173	MTLB 5/Manley	90.0	187.3	25.8	77.2	10.0	48.0	42.3	23.8	16.7
MT960228	Eslick	96.2	188.0	29.3	77.2	9.9	47.1	23.1	32.6	16.9
MT030093	MT960099/Harrington	93.1	187.3	30.2	76.7	9.7	47.0	47.4	21.5	16.5
MT960101	Manley/Baronesse	93.0	186.3	28.4	76.5	9.8	46.1	37.5	29.2	17.3
MT030160	MTLB 5/MT950155	96.5	186.3	27.7	75.8	9.9	46.2	23.6	36.5	16.8
MT010212	MT920073/Baronesse	93.4	182.7	29.6	75.6	10.0	46.2	52.1	21.3	16.2
PI610264	Valier	95.1	186.3	31.5	75.3	9.8	46.9	24.4	34.0	17.2
MT030152	MTLB 5/MT940053	97.2	186.7	30.0	74.9	9.9	46.7	18.9	33.7	17.3
BZ594-19	WB Xena	95.2	186.7	29.5	73.6	9.6	45.6	52.2	23.0	15.4
MT030047	MT910189/MT960101	96.9	187.7	28.8	72.3	9.7	44.3	40.6	27.9	16.9
SK 76333	Harrington	91.0	181.7	30.9	71.8	9.7	44.9	48.3	24.2	17.0
MT010191	MT920053/Harrington	91.7	186.3	30.8	71.7	9.8	46.2	50.1	22.2	17.5
MT030046	MT910189/MT960101	92.7	185.7	32.1	70.3	9.9	48.9	33.3	31.7	16.4
99373119	Shakira	95.5	190.3	25.9	70.0	9.3	43.3	31.8	30.5	16.5
MT030168	MTLB 5/MT960101	89.3	188.0	27.1	69.6	9.7	47.0	20.5	47.9	17.8
NORD2125	Marthe	93.0	190.0	27.1	67.4	9.5	42.8	42.9	25.5	17.6
MT010162	MT920041/Harrington	91.0	184.3	29.8	64.5	9.8	45.4	41.2	27.8	17.3
6B932978	Legacy	82.3	177.7	33.4	61.9	9.5	43.3	22.6	46.1	15.5
2B914947	Merit	97.6	182.3	30.0	61.6	9.3	41.4	24.0	25.6	18.8
EXPERIMENTAL MEANS		94.0	183.2	29.5	80.7	9.8	48.1	55.4	19.1	16.4
LSD (0.05)		9.0	3.6	4.2	13.7	1.2	2.8	-	-	-
C.V.2: (S of MEAN / MEAN)*100		3.4	0.7	5.1	6.1	4.4	2.1	-	-	-

1/ No. of Days from January 1 (183 = July 2)
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# 05-2102-SB)							
Field	B-1-1		Soil Texture 0-6"	CL		2" Soil Temp (^{o}F) @ Plnt'g	59
Quarter	NW		Soil Texture 6-24"	CL		4" Soil Temp (^{o}F) @ Plnt'g	53
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"	0.7		Fert. Rate (lbs/ac) N	70
Latitude	N48 29.696'		Init Mn (ppm) 0-6"	34.6		Fert. Rate (lbs/ac) P2O5	40
Longitude	W109' 48.024		Init Cu (ppm) 0-6"	1.2		Fert. Rate (lbs/ac) K2O	25
Soil Series	Joplin CLm		Init Fe (ppm) 0-6"	20.6		Herbicide App. Date	6/21
pH 0-6"	6.8		CEC 0-6"	21.8		Herbicide Product	Bronate Adv.
Org.Matter (%) 0-6"	1.6		Init PAW (in.) 0-6"	0.99		Herbicide Rate (/ac)	18 oz
Init N (lbs/ac) 0-6"	14		Init PAW (in.) 6-24"	3.41		Precip (in.) Plnt'g-Harvest	6.95
Init N (lbs/ac) 6-24"	42		Init PAW (in.) 24-36"	1.89		Precip (>.1) Plnt'g-Harvest	6.40
Init N (lbs/ac) 24-36"	44		Init PAW (in.) 36-48"	1.79		Harvest Date	8/16
Init N (lbs/ac) 36-48"	84		Init PAW (in.) 0-48"	8.07		Rooting Depth (in.)	41"
Init P (ppm) Olsen 0-6"	34		Cropping System	NT-ChmFlw		Post PAW (in.) 0-6"	0.24
Init K (ppm) 0-6"	391		Previous Crop	Wntr Wheat		Post PAW (in.) 6-24"	1.27
Init S (ppm) 0-24"	13		Planting Date	4/23		Post PAW (in.) 24-36"	0.95
Init Na (MEQ/100g) 0-6"	0.1		Planting Depth (in.)	1.25		Post PAW (in.) 36-48"	1.19
SaltHaz (MMHOS/cm) 0-6"	0.35		Moist Soil Depth @Plnt'g	48+		Post PAW (in.) 0-48"	3.65
SaltHaz(MMHOS/cm)6-24"	0.43		Dry Surf Soil (in.) @Plnt'g	0.25		Precip (>.1) Hvst-Post	0.64

TABLE 11. Ten-Year Yield Summary on Selected Entries from Dryland Intrastate Spring Barley Nursery. Northern Agricultural Research Center. Havre, Montana. 1996-2005. (EXP# 05-2102-SB)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1/ YIELD (Bushels Per Acre) 1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	AVE. for YEARS TESTED	% of CHECK YIELD 3/	**10-YR COMP. AVE. YIELD 4/**
MT960099	Manley/Baronesse	6			70.6	80.6	64.5	30.9	61.5	15.3			53.9	110.1	**62.6**
MT970229	MT890021/Stark	6				81.6	60.6	32.1	56.3	14.4		84.2	54.9	107.1	**60.9**
PI568246	BARONESSE (P+)	9	52.0	83.8	70.6	85.3	62.5	32.2	57.2	14.2		82.4	60.0	105.6	**60.0**
MT950186	HAXBY (+)	8		89.1	77.0	65.9	66.0	28.9	54.0	12.0		83.7	59.6	105.4	**60.0**
MT981212	MT910150/Stark	4					66.8	34.6	56.3	11.4			42.3	104.8	**59.6**
MT960228	Eslick (+)	6				80.6	63.5	28.1	59.7	11.2		77.2	53.4	104.3	**59.3**
MT970155	MT886610/MT140523	4					60.6	37.1	57.3	11.4			41.6	103.1	**58.6**
MT981210	MT910150/Stark	5					73.4	31.2	52.9	14.5		77.6	49.9	102.6	**58.3**
MT970148	MT861596/ND 11120	5				73.0	59.3	32.3	50.8	15.2			46.1	102.4	**58.2**
BZ594-19	WPB XENA (+)	6		85.0	77.3	65.2		29.0		10.7		73.6	56.8	102.1	**58.1**
MT970026	Baronesse/MT860756	5				64.8	62.8	32.5	60.1	9.3			45.9	101.9	**58.0**
MT981030	Baronesse/MT910160	4					62.9	33.0	53.5	13.9			40.8	101.2	**57.5**
MT960101	Manley/Baronesse	6				79.2	56.8	26.8	57.6	13.7		76.5	51.8	101.1	**57.5**
PI610264	VALIER (+)	8		80.5	71.4	71.0	62.4	30.2	54.3	11.6		75.3	57.1	101.0	**57.4**
MT981004	Baronesse/H2860224	4					61.4	35.0	52.8	13.4			40.7	100.8	**57.3**
PI491534	GALLATIN	9	59.6	76.4	68.5	63.8	65.5	31.6	52.9	11.3		82.0	56.9	100.0	**56.9**
MT981091	MT851195/MT140523	4					66.2	27.2	54.2	13.7			40.3	99.9	**56.8**
MT910189	ND 7293/Bearpaw	9	62.0	79.5	72.5	57.8	65.8	29.5	51.9	11.0		78.5	56.5	99.4	**56.5**
MT981238	ND112311/Lewis	4					63.6	32.2	49.3	11.8			39.2	97.3	**55.3**
MT981006	Baronesse/H2860224	4					58.7	28.2	54.7	13.5			38.8	96.1	**54.7**
MT970116	Klages/Baronesse (++)	5					55.5	29.4	53.1	12.1		81.4	46.3	95.1	**54.1**
SK76333	HARRINGTON	9	52.5	75.7	58.6	71.8	53.5	31.2	54.5	12.8		71.8	53.6	94.3	**53.6**
2B914947	MERIT	9	49.5	67.1	60.0	71.9	54.9	28.5	49.0	12.1		61.6	50.5	88.8	**50.5**
6B932978	LEGACY	5					53.8	21.9	51.8	7.9		61.9	39.5	81.1	**46.1**
MT990106	Apex/H1851195	3						33.8	55.3	13.3			34.1	68.3	**38.8**
PI605472	GARNET	3						32.9	50.5	13.6			32.4	64.7	**36.8**
MEANS (For Entries Listed)			55.1	79.7	69.6	72.3	61.8	30.8	54.5	12.5		76.3			55.5
April-July Precip. (in.)			11.80	5.18	5.65	8.78	8.57	6.01	4.81	8.87	8.64	7.37	7.57		
Tot.Annual Precip. (in.)			16.36	10.20	12.06	12.17	14.30	10.27	8.83	13.29	14.43	11.87	12.38		
Soil NO3(lbs) to SD@Pltg			54	130	114	172	Pndg	Pndg	Pndg	102	120	8.0727	100		
SD (Smplng Depth inches)			48	48	48	48	Pndg	Pndg	48	48	48	48	48		
Fertilizer Applied (# N)	(# 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 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 selecton 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/ 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 Gallatin for the same years, and z = 10-Yr average yield or test weight for the check variety Gallatin.

TABLE 12. Ten-Year Test Weight Summary on Selected Entries from Dryland Intrastate Spring Barley Nursery. Northern Agricultural Research Center. Havre, Montana. 1996-2005. (EXP# 05-2102-SB)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1/ TEST WEIGHT (Pounds Per Bushel) 1996	1997	1998	1999	2000	2001	2002	2003	3/ 2004	2005	AVE. for YEARS TESTED	% of CHECK TEST WT 4/	**10-YR COMP. AVE. TEST WT 5/**
MT950186	HAXBY (+)	8		55.4	52.1	53.1	51.9	49.4	50.4	49.1		50.9	51.5	104.1	**51.4**
MT970116	Klages/Baronesse (++)	5					50.8	49.7	50.5	48.8		50.7	50.1	103.5	**51.2**
MT981212	MT910150/Stark	4					51.5	50.0	49.2	48.5			49.8	103.0	**50.9**
MT970229	MT890021/Stark	6				52.3	50.6	49.2	50.2	47.4		50.5	50.0	102.3	**50.6**
MT981238	ND112311/Lewis	4					51.4	49.4	49.2	47.5			49.4	102.1	**50.5**
MT981091	MT851195/MT140523	4					50.8	48.2	49.7	48.5			49.3	102.0	**50.4**
MT910189	ND 7293/Bearpaw	9	51.2	50.1	53.6	52.5	50.2	48.2	49.7	49.3		48.0	50.3	101.8	**50.3**
MT970026	Baronesse/MT860756	5				52.0	50.0	49.8	49.7	47.4			49.8	101.6	**50.2**
MT981210	MT910150/Stark	5					50.1	49.0	49.4	48.3		47.6	48.9	101.0	**49.9**
PI610264	VALIER (+)	8		54.6	49.5	51.4	49.0	48.5	49.8	46.8		46.9	49.6	100.1	**49.5**
PI491534	GALLATIN	9	48.7	53.5	49.1	51.5	49.0	48.1	48.5	47.7		48.6	49.4	100.0	**49.4**
MT981030	Baronesse/MT910160	4					48.9	49.1	48.8	46.5			48.3	100.0	**49.4**
MT970155	MT886610/MT140523	4					48.6	49.0	48.7	46.4			48.2	99.7	**49.3**
MT960228	ESLICK (+)	6				51.4	49.3	47.7	49.6	46.3		47.1	48.6	99.3	**49.1**
MT990106	Apex/H1851195	3						46.5	48.2	47.4			47.4	98.5	**48.7**
MT970148	MT861596/ND 11120	5				50.9	47.9	46.5	47.1	47.8			48.0	98.1	**48.5**
MT960101	Manley/Baronesse	6				49.0	47.3	48.6	49.1	47.1		46.1	47.9	97.9	**48.4**
PI568246	BARONESSE (P+)	9	47.2	52.8	47.0	51.2	47.6	48.1	48.9	46.0		45.8	48.3	97.7	**48.3**
MT981004	Baronesse/H2860224	4					47.5	47.0	48.3	45.8			47.2	97.6	**48.2**
BZ594-19	WPB XENA (+)	6		53.0	48.9	51.3		48.4		45.8		45.6	48.8	97.3	**48.1**
MT960099	Manley/Baronesse	6			46.5	49.1	47.6	47.3	48.8	46.2			47.6	97.1	**48.0**
MT981006	Baronesse/H2860224	4					46.8	47.4	47.8	45.7			46.9	97.1	**48.0**
PI605472	GARNET	3						46.7	48.0	45.2			46.7	97.0	**47.9**
SK76333	HARRINGTON	9	46.5	50.7	46.0	49.1	46.8	46.2	48.4	45.5		44.9	47.1	95.3	**47.1**
2B914947	MERIT	9	43.4	49.1	43.6	49.0	46.8	46.6	47.3	44.4		41.4	45.7	92.5	**45.7**
6B932978	LEGACY	5					43.4	44.7	45.2	45.9		43.3	44.5	92.0	**45.4**
MEANS (For Entries Listed)			47.4	52.4	48.5	51.0	48.9	48.1	48.8	47.0		47.0			49.0
April-July Precip. (in.)			11.80	5.18	5.65	8.78	8.57	6.01	4.81	8.87	8.64	7.37	7.57		
Tot.Annual Precip. (in.)			16.36	10.20	12.06	12.17	14.30	10.27	8.83	13.29	14.43	11.87	12.38		
Soil NO3(lbs) to SD@Pltg			54	130	114	172	Pndg	Pndg	Pndg	102	120	8.0727	100.01		
SD (Smplng Depth inches)			48	48	48	48	Pndg	Pndg	48	48	48	48	48.00		
Fertilizer Applied (# N)	(# N)		70	70	70	70	70	70	70	70	70	70	70.00		
	(# P_2O_5)		40	40	40	40	40	40	40	40	40	40	40.00		
	(# K_2O)		25	25	25	25	25	25	25	25	25	25	25.00		

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

TABLE 13. Montana Spring Oat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions. Northern Agricultural Research Center. Havre, Montana. 2005. (Exp# 05-0402-OA)

ID	CULTIVAR or SELECTION	STAND %	1/ HEAD DATE	PLNT HT Inches	2/ LODGING Score	3/ YIELD Bu/Ac	MOISTURE %	TEST WT Lbs/Bu	4/ PROTEIN %
96AB8796	81Ab5792/82Ab248	100.0	186.7	32.9	0.0	119.0	5.3	26.4	15.3
ABSP 9-2	Monico	98.8	183.7	33.9	1.7	117.9	5.8	27.5	15.1
90AB1322	Maverick	100.0	184.7	32.1	0.0	116.0	5.6	25.3	15.8
OT373	CDC Dancer	99.7	183.7	41.7	1.0	115.7	5.9	30.1	14.7
87AB5632	Monida/75Ab861	99.7	184.7	35.8	1.0	114.5	5.5	26.6	13.4
OT382	OT349/J775-1	99.1	182.3	41.1	0.3	113.9	6.5	29.5	15.1
94AB5943	86Ab1867/87Ab5597	98.7	184.7	36.4	0.0	113.5	5.7	28.0	15.2
OT351	CDC Pacer	100.0	181.7	39.6	1.0	110.3	5.7	26.2	13.5
ND930122	Killdeer	99.1	180.0	36.8	2.3	109.8	5.5	28.8	15.4
96AB8597	Otana/87Ab4983	99.4	185.7	35.9	0.0	109.5	5.7	26.4	14.2
CI483126	Monida	98.4	187.0	39.4	6.3	104.1	5.5	24.5	14.8
98AB6646	IAH61-3-3/90Ab1322	99.4	185.7	36.0	0.0	104.0	5.7	27.8	15.4
98AB6491	90Ab1322/Ogle	99.4	184.0	34.7	0.0	103.2	5.5	27.4	15.6
CI 9252	Otana	99.7	179.3	42.5	3.3	100.3	5.9	29.0	15.7
EXPERIMENTAL MEANS		99.4	183.8	37.1	1.2	110.8	5.7	27.4	14.9
LSD (0.05)		1.4	2.9	2.2	2.2	17.6	0.5	1.6	-
C.V.2: (S of MEAN / MEAN)*100		0.5	0.5	2.0	62.5	5.5	3.0	2.0	-

1/ No. of Days from January 1 (184 = July 3)
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# 05-0402-OA)							
Field	B-1-1		Soil Texture 0-6"	CL		2" Soil Temp (°F) @ Plnt'g	66
Quarter	NW		Soil Texture 6-24"	CL		4" Soil Temp (°F) @ Plnt'g	61
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"	0.7		Fert. Rate (lbs/ac) N	70
Latitude	N48 29.725'		Init Mn (ppm) 0-6"	34.6		Fert. Rate (lbs/ac) P2O5	40
Longitude	W109 48.025'		Init Cu (ppm) 0-6"	1.2		Fert. Rate (lbs/ac) K2O	25
Soil Series	Joplin CLm		Init Fe (ppm) 0-6"	20.6		Herbicide App. Date	6/21
pH 0-6"	6.8		CEC 0-6"	21.8		Herbicide Product	Bronate Adv.
Org.Matter (%) 0-6"	1.6		Init PAW (in.) 0-6"	0.99		Herbicide Rate (/ac)	18 oz
Init N (lbs/ac) 0-6"	14		Init PAW (in.) 6-24"	3.41		Precip (in.) Plnt'g-Harvest	7.60
Init N (lbs/ac) 6-24"	42		Init PAW (in.) 24-36"	1.89		Precip (>.1) Plnt'g-Harvest	5.91
Init N (lbs/ac) 24-36"	44		Init PAW (in.) 36-48"	1.79		Harvest Date	8/4
Init N (lbs/ac) 36-48"	84		Init PAW (in.) 0-48"	8.07		Rooting Depth (in.)	37"
Init P (ppm) Olsen 0-6"	34		Cropping System	NT-ChmFlw		Post PAW (in.) 0-6"	0.25
Init K (ppm) 0-6"	391		Previous Crop	Wntr Wheat		Post PAW (in.) 6-24"	1.38
Init S (ppm) 0-24"	13		Planting Date	4/23		Post PAW (in.) 24-36"	0.91
Init Na (MEQ/100g) 0-6"	0.1		Planting Depth (in.)	1.25		Post PAW (in.) 36-48"	1.53
SaltHaz (MMHOS/cm) 0-6"	0.35		Moist Soil Depth @Plnt'g	48+		Post PAW (in.) 0-48"	4.07
SaltHaz(MMHOS/cm)6-24"	0.43		Dry Surf Soil (in.) @Plnt'g	0.25		Precip (>.1) Hvst-Post	0.64

TABLE 14. Ten-Year Yield Summary on Selected Entries from Dryland Northwestern State Oat Nursery. Northern Agricultural Research Center. Havre, Montana. 1996-2005. (Exp# 05-0402-OA)

VARIETY or SELECTION		No. of YEARS TESTED	1/ YIELD (Bushels Per Acre) 1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	AVE. for YEARS TESTED	% of CHECK YIELD 2/	**10-YR COMP. AVE. YIELD 3/**
87AB5632	MONIDA/75AB861	4							77.3	30.8	73.0	114.5	73.9	114.4	**86.7**
ABSP14-6	83/AB3119/MONIDA	3							72.2	24.2	83.9		60.1	114.1	**86.5**
OT351	CDC PACER	5						37.5	72.3	24.3	77.4	110.3	64.3	110.2	**83.5**
94AB5543	83AB3119/86AB1867A	3							62.6	26.4		113.5	67.5	107.3	**81.3**
ND930122	KILLDEER	6					79.1	35.8	64.5	24.1	75.5	109.8	64.8	106.3	**80.6**
ABSP19-9	83/AB3083/MONIDA	6				109.5	77.0	36.7	69.3	27.9	76.2		66.1	106.0	**80.3**
OT373	CDC DANCER	4							68.1	19.9	69.3	115.7	68.3	105.7	**80.1**
90AB1322	MAVERICK	10	77.0	99.2	98.4	106.1	72.5	37.5	78.0	29.0	77.7	116.0	79.1	104.4	**79.1**
81AB5792	RIO GRANDE	9	86.0	97.0	103.1	97.4	81.0	36.3	65.2	26.1	83.5		75.1	102.7	**77.9**
ABSP9-2	MONICO	9		92.4	93.0	111.3	73.0	29.7	72.5	25.3	72.3	117.9	76.4	102.5	**77.7**
CI483126	MONIDA	10	88.4	93.9	97.9	103.8	80.5	37.7	70.5	24.2	73.9	104.1	77.5	102.2	**77.5**
98AB6646	IAH61-3-3/90AB1322	3								23.2	65.4	104.0	64.2	100.8	**76.4**
CI9252	OTANA	10	87.4	95.9	100.2	108.7	73.9	33.6	67.3	21.1	69.6	100.3	75.8	100.0	**75.8**
PI583735	CELSIA	8		97.8	89.4	103.4	75.5	32.1	66.1	26.7	69.5		70.1	98.3	**74.5**
PI537463	AJAY	9	63.7	90.3	87.3	98.0	66.0	34.5	66.4	23.9	66.1		66.3	90.7	**68.7**
ND870258	WHITESTONE	7	88.3	98.1	99.1	94.3	75.6	36.6	63.1				79.3	97.9	**74.2**
MEANS (For Entries Listed)			81.8	95.6	96.0	103.6	75.4	35.3	69.0	25.1	73.8	110.6			78.8
April-July Precip. (in.)			11.80	4.57	5.46	8.79	8.57	6.01	4.81	8.87	8.64	7.37	7.49		
Tot.Annual Precip. (in.)			16.36	10.20	12.06	12.17	14.30	10.27	8.83	13.29	14.43	11.87	12.38		
Soil NO3 (lbs.) to SD at Planting			NA	130	114	172	Pndg	Pndg	Pndg	102	184	8	140		
SD (Sampling Depth in Inches)			0	48	48	48	Pndg	Pndg	Pndg	48	48	48	40		
Fertilizer Applied	(# N)		70	70	70	70	70	70	70	70	70	70	70		
	(# P_2O_5)		40	40	40	40	40	40	40	40	40	40	40		
	(# K_2O)		25	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 selecton 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. 1996-2005. (Exp# 05-0402-OA)

VARIETY or SELECTION		No. of YEARS TESTED	1/ TEST WEIGHT (Pounds Per Bushel) 1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	AVE. for YEARS TESTED	% of CHECK TEST WT 2/	**10-YR COMP. AVE. TEST WT 3/**
OT373	CDC DANCER	4							35.5	27.3	33.3	30.1	31.6	100.7	**33.1**
CI9252	OTANA	10	33.0	33.4	31.6	33.1	35.3	36.8	33.5	30.9	31.9	29.0	32.9	100.0	**32.9**
ABSP9-2	MONICO	9		33.8	30.8	33.5	34.6	37.0	34.6	30.2	31.4	27.5	32.6	99.3	**32.6**
ND930122	KILLDEER	6					35.7	35.0	33.0	30.3	32.7	28.8	32.6	99.0	**32.5**
98AB6646	IAH61-3-3/90AB1322	3								29.2	32.2	27.8	29.7	97.2	**31.9**
ND870258	WHITESTONE	7	31.3	32.8	29.4	31.7	36.3	36.2	31.7				32.8	96.9	**31.8**
ABSP14-6	83/AB3119/MONIDA	3							32.5	28.9	31.6		31.0	96.4	**31.7**
81AB5792	RIO GRANDE	9	31.3	32.0	29.7	31.8	37.2	34.0	30.3	30.8	29.3		31.8	95.6	**31.4**
94AB5543	83AB3119/86AB1867A	3							33.7	27.6		28.0	29.8	95.6	**31.4**
ABSP19-9	83/AB3083/MONIDA	6				30.8	35.7	37.0	31.6	27.3	29.6		32.0	95.3	**31.3**
87AB5632	MONIDA/75AB861	4							33.2	28.5	29.8	26.6	29.5	94.2	**30.9**
PI537463	AJAY	9	31.1	33.1	28.4	30.6	32.9	35.5	31.0	29.2	28.3		31.1	93.5	**30.7**
OT351	CDC PACER	5						36.0	32.8	26.5	29.9	26.2	30.3	93.3	**30.7**
CI483126	MONIDA	10	29.3	30.2	28.6	29.3	33.4	35.9	32.0	30.3	28.6	24.5	30.2	92.0	**30.2**
90AB1322	MAVERICK	10	29.2	30.6	27.6	29.1	33.1	36.1	31.9	28.1	28.4	25.3	29.9	91.2	**29.9**
PI583735	CELSIA	8		30.9	28.0	30.0	33.9	32.2	29.7	29.3	28.3		30.3	90.9	**29.9**
MEANS (For Entries Listed)			30.9	32.1	29.3	31.1	34.8	35.6	32.5	29.0	30.4	27.4			31.4
April-July Precip. (in.)			11.80	4.57	5.46	8.79	8.57	6.01	4.81	8.87	8.64	7.37	7.49		
Tot.Annual Precip. (in.)			16.36	10.20	12.06	12.17	14.30	10.27	8.83	13.29	14.43	11.87	12.38		
Soil NO3 (lbs.) to SD at Planting			NA	130	114	172	Pndg	Pndg	Pndg	102	184	8	140		
SD (Sampling Depth in Inches)			0	48	48	48	Pndg	Pndg	Pndg	48	48	48	40		
Fertilizer Applied	(# N)		70	70	70	70	70	70	70	70	70	70	70		
	(# P_2O_5)		40	40	40	40	40	40	40	40	40	40	40		
	(# K_2O)		25	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 selecton 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. 2005. (Exp# 05-7702-SA)

ENTRY	CULTIVAR or SELECTION	STAND %	1/ FLWR DATE	PLNT HT Inches	YIELD Lbs/Ac	MOIST %	TEST WT Lbs/Bu	OIL % 0%Mois.	OIL % 8%Mois.	OIL Lbs/Ac 8%Mois.
11	01B 7113	75.9	209.7	20.3	1227.9	7.4	36.2	44.1	40.6	498.9
19	02B 8599	74.6	211.0	23.4	1453.4	8.2	43.5	37.2	34.2	496.4
33	MT 2004	78.9	208.7	19.7	1392.6	8.0	42.3	38.6	35.5	493.8
15	02B 6081	80.6	209.0	20.8	1344.9	8.0	42.6	39.8	36.6	492.5
18	02B 6674	75.9	210.0	17.8	1231.9	7.2	35.5	43.4	40.0	492.2
27	HYBRID 9049	72.9	211.3	23.2	1509.9	8.3	43.7	34.7	31.9	482.1
23	03B 6789	73.6	211.3	20.2	1207.2	7.9	34.6	43.0	39.5	477.3
24	03B 6956	70.1	212.3	21.3	1204.5	8.1	40.3	43.0	39.6	476.7
22	03B 4098	79.9	210.7	21.0	1312.8	8.1	41.8	39.4	36.3	476.3
29	CENTENNIAL	74.5	210.7	24.6	1181.1	7.7	42.1	42.9	39.5	466.3
17	02B 6655	78.9	211.7	18.4	1155.0	7.6	36.0	43.4	39.9	461.3
4	97B 1286	80.1	211.0	23.4	1261.8	7.9	40.1	39.6	36.5	460.3
31	NUTRA SAFF	84.9	208.3	22.1	1036.2	6.9	38.1	47.6	43.8	453.9
32	MT 2003	81.7	208.7	21.0	1226.1	8.0	41.9	39.3	36.2	443.0
20	02B 8628	77.1	211.0	23.2	1274.5	7.7	42.2	37.7	34.7	442.3
30	MT 2000	82.2	209.0	19.8	1160.5	8.0	39.7	41.2	37.9	440.2
34	MORLIN	75.2	211.0	20.5	1194.4	7.9	40.5	39.6	36.4	435.3
25	03B 8069	80.8	210.7	22.0	1216.0	8.1	42.1	38.9	35.8	435.2
7	00B 1413	78.0	211.7	21.2	1124.1	7.7	38.6	41.1	37.8	425.8
2	95B 7446	77.8	211.7	21.7	1222.9	8.0	42.1	37.8	34.8	425.3
35	FINCH	85.4	208.7	21.6	1214.2	8.2	42.2	38.1	35.0	424.2
28	S-541	90.8	210.0	25.2	1061.7	7.5	41.5	43.0	39.5	419.7
3	96B 6170	65.8	211.3	22.6	1138.6	7.8	44.3	39.5	36.4	413.9
1	95B 3538	73.1	213.0	22.5	1215.6	7.8	42.3	36.8	33.8	411.4
5	97B 1744	80.1	209.3	20.4	1150.4	8.0	43.5	36.8	33.8	389.2
14	01B 9104	80.1	210.3	19.3	1150.6	8.2	41.1	36.7	33.8	388.9
9	00B 7627	80.6	210.0	21.4	1089.5	7.8	39.8	38.3	35.2	383.5
12	01B 7353	83.3	211.3	21.3	1066.3	7.9	43.3	38.8	35.7	380.5
6	00B 1397	69.2	210.7	23.0	1117.4	7.8	41.3	37.0	34.1	380.5
8	00B 6878	82.9	211.0	22.2	1038.1	7.5	43.0	39.7	36.5	379.5
16	02B 6204	77.5	211.0	19.2	1094.3	8.1	43.7	37.5	34.5	377.9
21	03B 1118	75.9	211.0	23.0	993.3	7.8	40.0	40.5	37.3	370.2
10	00B 8208	80.8	213.0	20.3	1085.6	7.7	42.4	36.6	33.6	364.9
13	01B 8553	84.3	210.3	19.2	1076.7	7.9	43.5	36.4	33.5	360.9
26	HYBRID 9022	74.8	213.0	25.3	1046.2	8.0	42.5	33.3	30.7	321.3
36	ERLIN	84.0	208.7	20.7	828.3	7.2	39.8	40.5	37.3	308.6
EXPERIMENTAL MEANS		78.4	210.6	21.5	1175.1	7.8	41.1	39.5	36.3	426.4
LSD (0.05)		13.3	1.2	3.2	194.9	0.5	1.1	0.8	0.7	72.1
C.V.2: (S of MEAN / MEAN)*100		6.0	0.2	5.3	5.9	2.3	0.9	0.7	0.7	6.0

1/ No. of Days from January 1 (211 = July 30)

Site Resource & Management Data: (Exp# 05-7702-SA)							
Field	An-4-5		Soil Texture 0-6"	CL		2" Soil Temp (^{o}F) @ Plnt'g	55
Quarter	NW		Soil Texture 6-24"	CL		4" Soil Temp (^{o}F) @ Plnt'g	57
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"	0.4		Fert. Rate (lbs/ac) N	50
Latitude	N48 29.443'		Init Mn (ppm) 0-6"	10.0		Fert. Rate (lbs/ac) P2O5	20
Longitude	W109 47.891'		Init Cu (ppm) 0-6"	1.2		Fert. Rate (lbs/ac) K2O	10
Soil Series	unk		Init Fe (ppm) 0-6"	5.4		Herbicide App. Date	4/19
pH 0-6"	8.1		CEC 0-6"	21.8		Herbicide Product	Treflan EC
Org.Matter (%) 0-6"	1.4		Init PAW (in.) 0-6"	0.96		Herbicide Rate (/ac)	24 oz
Init N (lbs/ac) 0-6"	32		Init PAW (in.) 6-24"	4.13		Precip (in.) Plnt'g-Harvest	9.19
Init N (lbs/ac) 6-24"	156		Init PAW (in.) 24-36"	1.75		Precip (>.1) Plnt'g-Harvest	8.14
Init N (lbs/ac) 24-36"	304		Init PAW (in.) 36-48"	1.81		Harvest Date	10/25
Init N (lbs/ac) 36-48"	216		Init PAW (in.) 0-48"	8.66		Rooting Depth (in.)	n/a
Init P (ppm) Olsen 0-6"	18		Cropping System	NT-ChmFlw		Post PAW (in.) 0-6"	pndg
Init K (ppm) 0-6"	255		Previous Crop	Wntr Wheat		Post PAW (in.) 6-24"	pndg
Init S (ppm) 0-24"	40		Planting Date	5/4		Post PAW (in.) 24-36"	pndg
Init Na (MEQ/100g) 0-6"	0.09		Planting Depth (in.)	1.5		Post PAW (in.) 36-48"	pndg
SaltHaz (MMHOS/cm) 0-6"	0.48		Moist Soil Depth @Plnt'g	48+		Post PAW (in.) 0-48"	pndg
SaltHaz(MMHOS/cm)6-24"	0.52		Dry Surf Soil (in.) @Plnt'g	1		Precip (>.1) Hvst-Post	pndg

TABLE 17. Ten-Year Yield Summary on Selected Entries from Dryland Safflower Nursery. Northern Agricultural Research Center. Havre, Montana. 1996-2005. (Exp# 05-7702-SA)

VARIETY or SELECTION		No. of YEARS TESTED	YIELD (Lbs Per Acre) 1996	1997	1998	1999	2000	2001 1/	2002	2003	2004	2005	AVE. for YEARS TESTED	% of CHECK YIELD 2/	**10-YR COMP. AVE. YIELD 3/**
95B7446	99MTDSVT 218/108	6				1366.8	1496.5		1950.3	692.8	1229.7	1222.9	1326.5	113.6	**1189.4**
S-518	Will 95FI	6		560.8	1044.3	1180.9	1569.6		1870.3	630.0			1142.6	111.0	**1162.5**
97B1744	99DLI2 319/107	5					1941.9		1785.7	451.7	1298.9	1150.4	1325.7	111.0	**1162.2**
95B7174	99MTDSVT 222/106	6		540.2	1066.3	1176.9	1666.0		1691.4	688.2			1138.2	110.6	**1158.0**
95B3538	99MTDSVT 104	7			835.1	1160.7	1588.2		1832.6	480.4	1113.7	1215.6	1175.2	105.3	**1102.5**
00B8208	01DOL4 4126	4							1754.2	595.8	1343.8	1085.6	1194.8	105.0	**1100.2**
MORLIN	011-2180	9	942.0	466.6	937.3	1342.4	1313.2		1839.9	495.0	1359.6	1194.4	1098.9	104.9	**1098.9**
95B7181	99MTDSVT 228/107	7		597.2	1079.6	1245.5	1902.9		1541.5	676.7	1046.5		1155.7	104.5	**1094.8**
FINCH	Will 95FI	9	1048.8	470.0	1033.4	1267.5	1516.3		1383.7	564.1	1276.5	1214.2	1086.1	103.7	**1086.1**
MONT2004	Will	4							1617.1	448.8	1257.3	1392.6	1179.0	103.6	**1085.5**
97B1286	99MTDSVT 311/120	6				1347.7	1036.8		1791.8	447.3	1326.0	1261.8	1201.9	102.9	**1077.7**
CENTENNIAL	Will	9	937.7	673.5	806.6	1034.6	1423.6		1744.7	493.5	1130.6	1181.1	1047.3	100.0	**1047.3**
96B6527	99MTDSVT 317/111	4				1345.4	1108.3		1701.4	519.7			1168.7	99.5	**1042.5**
S-541	Will	5	918.4						1848.6	413.9	1202.1	1061.7	1088.9	99.2	**1039.1**
MONT2000	Will	9	972.1	452.3	920.1	1152.1	1163.5		1787.3	479.2	1113.7	1160.5	1022.3	97.6	**1022.3**
00B7627	01DOL4 4115	4							1562.6	497.2	1265.8	1089.5	1103.8	97.0	**1016.3**
MONT2001	991-122-6503	8	922.7	315.9	854.2	1060.0	1571.6		1605.3	516.6	1074.0		990.0	96.1	**1006.1**
MONT2003	Will WOMA2003	8		574.7	917.5	1311.4	758.9		1715.2	468.2	1110.2	1226.1	1010.3	95.2	**997.2**
00B6878	01DOL3 3110	4							1666.2	413.4	1210.1	1038.1	1081.9	95.1	**996.2**
98B1475	99DLI2 316/130	3							1406.1	545.8	1206.0		1052.6	93.7	**981.8**
00B1027	01DLI2 7107	3							1545.2	307.3	1288.8		1047.1	93.3	**976.6**
91B2166	99DLI1 212/106	4		567.6	876.9				1552.8		1059.8		1014.3	93.2	**975.6**
96B6731	99DOL2 125	3					1415.5		1473.8	513.7			1134.4	92.9	**973.3**
96B6054	99MTDSVT 109	5				1027.1	1112.1		1503.9	468.2	993.1		1020.9	87.6	**917.5**
00B6144	01DOL2 2124	3							1293.2	452.4	1133.2		959.6	85.5	**895.0**
NUTRASAF	91B3842	8		484.2	740.8	879.4	833.1		1585.8	211.2	1048.9	1036.2	852.5	80.3	**841.4**
ERLIN	99MTDSVT 224/130	9	925.0	421.2	565.1	882.3	759.0		1262.5	360.4	1376.7	828.3	820.1	78.3	**820.1**
MEANS (For Entries Listed)			952.4	510.3	898.2	1173.8	1343.2		1641.2	493.5	1194.1	1147.4			1032.1
April-July Precip. (in.)			5.17	5.65	8.78	8.57	6.01		8.87	7.18	8.64	7.37	7.36		
Tot.Annual Precip. (in.)			10.20	12.06	12.17	14.30	10.27		13.29	12.05	14.43	11.90	12.30		
Soil N (lbs) to SD @ PLtg			88	248	n/a	n/a	n/a		n/a	78	214	708	267		
SD (Smplng Depth inches)			48	48	48	Pndg	Pndg		48	48	48	48	48		
Fertilizer Applied	(# N)		70	70	70	70	70		70	70	7	50	61		
	(# P2O5)		40	40	40	40	40		40	40	40	20	38		
	(# K2O)		25	25	25	25	25		25	25	25	10	23		

Long-term check variety is Centennial

1/ The 2001 nursery was destroyed in October due to extreme stand variablity caused by severe drough 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 18. Ten-Year Percent Oil Summary on Selected Entries from Dryland Safflower Nursery. Northern Agricultural Research Center. Havre, Montana. 1996-2005. (Exp# 05-7702-SA)

VARIETY or SELECTION		No. of YEARS TESTED	Oil (%) 1996	1997	1998	1999 1/	2000	2001 1/	2002	2003	2004	2005	AVE. for YEARS TESTED	% of CHECK OIL 2/	**10-YR COMP. AVE. OIL 3/**
00B1027	01DLI2 7107	3							41.0	43.5	43.8		42.8	109.3	**42.7**
NUTRASAF	91B3842	7		40.5	36.9		41.6		39.4	46.2	44.9	43.8	41.9	107.3	**41.9**
00B6144	01DOL2 2124	3							37.9	43.3	42.1		41.1	105.1	**41.0**
S-541	Will	5	40.6						37.0	41.2	40.5	39.5	39.8	101.5	**39.6**
CENTENNIAL	Will	8	39.0	38.7	36.5		41.3		37.2	40.1	40.1	39.5	39.0	100.0	**39.0**
96B6054	99MTDSVT 109	4					38.5		38.3	42.5	39.1		39.6	99.8	**39.0**
S-518	Will 95FI	5		39.3	37.5		42.5		33.2	38.9			38.3	98.8	**38.6**
MONT2000		8	40.2	36.6	36.2		37.5		32.7	38.7	37.3	37.9	37.1	95.1	**37.1**
ERLIN	99MTDSVT 224/130	8	35.9	34.5	34.6		39.7		34.7	36.4	37.7	37.3	36.3	93.1	**36.3**
97B1286	99MTDSVT 311/120	5					39.5		34.7	36.0	37.6	36.5	36.8	93.0	**36.3**
00B6878	01DOL3 3110	4							33.5	39.7	35.6	36.5	36.3	92.7	**36.2**
MONT2001		8	38.7	34.4	35.9		35.7		33.1	39.1	35.5		36.1	92.4	**36.1**
MONT2003		7		37.8	36.5		36.7		32.4	37.8	34.9	36.2	36.1	92.3	**36.0**
95B7174	99MTDSVT 222/106	5		37.9	34.2		35.3		32.3	38.9			35.7	92.2	**36.0**
MORLIN	011-2180	8	35.1	34.8	34.4		38.9		33.8	37.3	37.1	36.4	36.0	92.1	**36.0**
96B6731	99DOL2 125	3					35.9		33.3	39.4			36.2	91.6	**35.8**
00B7627	01DOL4 4115	4							33.6	39.3	35.5	35.2	35.9	91.5	**35.7**
91B2166	99DLI1 212/106	4		34.1	33.0				34.3		37.1		34.6	90.9	**35.5**
96B6527	99MTDSVT 317/111	3					37.1		32.2	37.4			35.6	89.9	**35.1**
98B1475	99DLI2 316/130	3							33.1	36.1	35.9		35.0	89.5	**34.9**
MONT2004		4							32.0	37.2	35.5	35.5	35.0	89.3	**34.9**
95B7181	99MTDSVT 228/107	7		35.6	34.4		34.7		32.4	37.9	34.2		34.9	89.3	**34.9**
95B3538	99MTDSVT 104	6			34.3		36.5		32.7	35.2	34.8	33.8	34.5	88.3	**34.5**
FINCH	Will 95FI	8	34.7	33.3	33.6		37.5		32.4	34.5	34.5	35.0	34.4	88.2	**34.4**
95B7446	99MTDSVT 218/108	5					35.5		31.7	37.8	34.8	34.8	34.9	88.1	**34.4**
97B1744	99DLI2 319/107	5					36.3		32.3	34.6	34.9	33.8	34.4	86.8	**33.9**
00B8208	01DOL4 4126	4							30.6	36.4	33.6	33.6	33.6	85.6	**33.4**
MEANS (For Entries Listed)			37.7	36.4	35.2		37.8		34.1	38.7	37.3	36.6			36.6
April-July Precip. (in.)			5.17	5.65	8.78	8.57	6.01		8.87	7.18	8.64	7.37	7.36		
Tot.Annual Precip. (in.)			10.20	12.06	12.17	14.30	10.27		13.29	12.05	14.43	11.90	12.30		
Soil N (lbs) to SD @ PLtg			88	248	n/a	n/a	n/a		n/a	78	214	708	267		
SD (Smplng Depth inches)			48	48	48	Pndg	Pndg		48	48	48	48	48		
Fertilizer Applied	(# N)		70	70	70	70	70		70	70	7	50	61		
	(# P2O5)		40	40	40	40	40		40	40	40	20	38		
	(# K2O)		25	25	25	25	25		25	25	25	10	23		

Long-term check variety is Centennial

1/ The 1999 oil results not reported. The 2001 nursery was destroyed in October due to extreme stand variablity caused by severe drough 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.