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## INTRODUCTION

### **Content:**

This report is intended to serve as a popularized 2009 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 18 percent of NARC-Agronomy’s total research project effort on-station at Havre, and approximately 24 percent of the cereal and oilseed variety evaluation effort on-station. The remaining 76 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 94 years beginning in 1916. Collection of sawfly stem cutting data was added beginning in 2003.

Detailed data pertaining to multiple performance characters, along with associated climatic and management inputs are presented for 2009. Abridged, multi-year summaries for each cereal trial are limited to three crop characters (yield, test weight and sawfly rating), while the safflower summary is limited to two crop characters (yield and oil content). 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.

### **2009 Data:**

It should be noted that 2009 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 2009 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)

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 2008-2009 crop year (September to August) and averages for the period 1916-2009 at the Northern Agricultural Research Center, Havre, Montana.

Month	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Crop Year
Year	2008	2008	2008	2008	2009	2009	2009	2009	2009	2009	2009	2009	
<b>Precipitation (inches)</b>													<b>Total</b>
Current Year	1.39	0.06	1.94	0.69	0.86	0.13	0.04	1.85	1.02	1.59	1.83	1.06	12.46
94-Year Average (1916 to 2008-09)	1.15	0.65	0.43	0.45	0.43	0.32	0.54	0.98	1.77	2.56	1.43	1.19	11.90
<b>Mean Temperature (°F)</b>													<b>Average</b>
Current Year	56.1	45.8	30.1	19.4	15.9	21.2	25.4	43.1	52.8	61.1	68.9	66.1	42.1
94-Year Average (1916 to 2008-09)	56.1	45.9	30.0	19.7	15.4	20.0	30.0	43.6	54.1	61.8	69.2	67.3	42.8

Last killing frost in spring\*

2009 \_\_\_\_\_ June 10th (32°)  
Ave. 1916-2009 \_\_\_\_\_ May 14th

First killing frost in fall\*

2009 \_\_\_\_\_ September 28th (27°)  
Ave. 1916-2009 \_\_\_\_\_ September 20th

Frost free period

2009 \_\_\_\_\_ 110 days  
Ave. 1916-2009 \_\_\_\_\_ 129 days

Growing degree days (base 50)

May 1-Oct 31, 2009 \_\_\_\_\_ 2384.0  
Ave. 1951-2009 \_\_\_\_\_ 2384.4

Maximum summer temperature \_\_\_\_\_ 98° July 26th and September 4th

Minimum winter temperature \_\_\_\_\_ -31° December 15th

\*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. 2009. (Exp# 09-3502-WW)**

ID	CULTIVAR or SELECTION	STAND %	1/ HEAD DATE	PLNT HT Inches	2/ YIELD Bu/Ac	MOIST %	TEST WT Lbs/Bu	3/ PROTEIN %	4/ SAWFLY %
MTS0031	GENOU	95.1	168.7	26.3	46.4	9.6	62.0	12.9	1.0
MTW9441	NuSky	94.8	170.0	27.4	43.1	9.9	62.0	13.7	18.3
MTS0713	MT9524/G14048//Rampart	88.2	169.7	23.9	42.4	9.8	62.2	13.9	4.0
OVERLAND	OVERLAND	94.8	165.7	24.1	42.3	9.4	61.4	13.9	20.0
MTCL0318	BYNUM	89.9	169.0	26.7	42.2	9.3	61.4	14.6	10.0
S94-4	CDC FALCON	92.4	168.3	24.4	42.1	9.6	61.8	13.9	13.3
DH001819	ACCIPITER	95.8	167.7	25.0	41.8	9.7	62.0	13.0	10.0
BZ96-919	PRYOR	91.7	170.3	24.5	41.1	9.7	61.7	12.1	13.3
MTS0705	93X312E14/NuHorizon	93.8	170.3	28.9	40.6	9.6	62.5	13.2	2.3
MT00159	YELLOWSTONE	94.5	168.3	26.3	39.7	9.9	61.7	13.2	23.3
MT0742	ID511/MT9514//MT9513	94.5	167.7	30.4	39.7	9.6	61.7	13.4	30.0
CI 17879	ROCKY	96.9	165.7	28.1	39.5	10.0	62.8	12.3	15.0
MTW0759	MT9524/Heyne//MTS9720	95.8	169.0	25.0	39.4	9.8	62.8	14.0	35.0
WENDY	WENDY	92.7	163.3	20.4	39.4	9.2	60.3	14.3	28.3
BZ96-788	LEDGER	95.5	167.7	24.5	39.3	9.6	60.4	12.7	11.7
MTS0532	L'Govskaya 167/Rmp//MT940	93.8	166.3	25.2	38.7	10.4	61.7	13.8	6.7
PI619098	WAHOO	94.8	165.0	25.8	38.5	9.7	61.4	13.7	23.3
MT0766	MT0057/Trego	95.5	169.0	23.2	38.4	9.6	60.7	14.2	41.7
MTS0721	DMS/Rmp//Pronghorn/3/2*Rm	93.8	168.0	21.1	38.4	9.5	61.1	13.5	4.0
ND9257	JERRY	95.8	167.3	26.8	38.3	9.6	60.5	12.9	40.0
CI 17860	NEELEY	91.7	170.3	26.3	38.2	9.7	61.2	13.0	21.7
BZ022060	CARTER	94.8	167.3	22.4	38.0	9.3	60.4	13.9	11.7
MT0495	MT9640/NB1133	94.1	167.3	25.2	37.9	9.4	61.3	12.5	28.3
BZ022051	BZ9W02-2051	95.8	168.3	26.5	37.8	9.6	61.5	13.2	38.3
PI593889	RAMPART	94.8	168.7	25.3	37.8	9.6	61.3	13.5	1.0
MT0552	N95L159/CDC Clair	95.1	166.0	25.2	37.3	9.5	61.5	14.8	16.7
MTCL0306	HYALITE	91.0	167.0	23.1	37.2	10.0	61.9	14.6	18.3
DH993710	PEREGRINE	97.6	167.3	29.7	37.2	9.7	61.7	12.0	38.3
PI555458	PROMONTORY	92.0	166.7	25.4	37.2	9.5	62.6	13.0	48.3
PI517194	TIBER	91.7	169.7	28.3	36.8	9.5	62.1	13.0	25.0
RADIANT	RADIANT	95.8	168.3	26.6	36.6	9.6	61.1	12.7	31.7
MT0754	MT98120/PI592500//MT9842	96.5	170.3	22.7	36.3	9.7	61.7	13.6	23.3
MTCL0316	NORRIS	94.8	164.7	24.3	36.2	9.5	62.6	13.4	18.3
NI04221	NI04221	98.6	162.3	24.5	36.0	9.5	62.2	12.9	28.3
UT932555	Golden Spike sib/3/Mng/R-	95.8	167.7	29.3	36.0	9.2	61.7	13.7	63.3
MT0861	MT0071//N95L1229/MT9834	96.9	166.3	24.7	35.9	10.1	63.3	14.1	25.0
MTS0531	L'Govskaya 167//Rmp//MT94	95.9	166.3	25.2	35.5	10.0	61.0	13.4	7.0
JAGALENE	JAGALENE	94.8	166.3	22.8	35.1	9.5	63.0	14.2	23.3
MTW0782	MT0057/Trego//MTW0047	94.5	168.7	23.3	34.9	9.8	60.8	13.4	45.0
MT06103	MT9409/W94-137	95.5	164.3	26.8	34.8	9.5	61.6	13.3	35.0
SETTLER	SETTLER CL	91.7	165.3	20.9	34.8	9.8	59.6	13.2	16.7
SD98102	DARRELL	94.8	167.3	25.3	34.5	9.5	61.2	14.1	26.7
AP503CL2	AP503 CL2	91.7	167.7	23.4	34.2	9.6	63.0	14.3	23.3

**TABLE 1. Intrastate Winter Wheat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland  
Continued Fallow Conditions. Northern Agricultural Research Center. Havre, Montana. 2009.  
(Exp# 09-3502-WW)**

ID	CULTIVAR or SELECTION	STAND %	1/	2/	YIELD Bu/Ac	MOIST %	TEST WT Lbs/Bu	3/	4/
			HEAD DATE	PLNT HT Inches				PROTEIN %	SAWFLY %
MTW0785	MT0057/Trego//MTW0047	97.3	168.0	23.8	34.2	9.7	61.5	13.5	41.7
MT0771	MT0051/G96047	98.3	168.3	23.0	33.7	9.6	62.2	15.7	20.0
MT0738	KS96HW10-3//MTW0047//MTS00	94.1	170.0	27.3	33.5	9.7	61.5	14.6	25.0
CO0016	RIPPER	96.2	164.3	20.2	32.2	9.3	61.1	14.1	25.0
SD97W609	ALICE	91.7	165.3	21.2	31.9	9.5	61.1	14.5	6.7
98X43515	HAWKEN	94.5	162.7	20.8	31.0	9.8	62.1	14.2	11.7
EXPERIMENTAL MEANS		94.4	167.4	24.9	37.6	9.6	61.6	13.6	22.4
LSD (0.05)		4.7	2.9	2.5	6.2	0.4	1.4	-	13.6
C.V.2: (S of MEAN / MEAN)*100		1.8	0.6	3.5	5.8	1.4	0.8	-	21.7

1/ No. of Days from January 1 (167 = June 16).

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# 09-3502-WW)					
Field	A-6-4	SaltHaz(MMHOS/cm) 6-24	0.31	Dry Surf Soil (in.) @ Plnt'g	0.25
Quarter	NW	S (ppm) 0-24	20	2" Soil Temp (°F) @ Plnt'g	75
Section	33	Zn (ppm) 0-6	0.51	4" Soil Temp (°F) @ Plnt'g	72
Tow nship	32N	Fe (ppm) 0-6	8.2	Fertilizer Formulation	Gran Blend
Range	15E	Mn (ppm) 0-6	3.16	Fertilizer Placement	Bnd at Plntg
Latitude	N48 29.463'	Cu (ppm) 0-6	1.34	Fert. Rate (lbs/ac) N	70
Longitude	W109 47.947'	CEC 0-6	30.5	Fert. Rate (lbs/ac) P2O5	40
Soil Series	TelstadCl-Lm	Soil Texture 0-6	n/a	Fert. Rate (lbs/ac) K2O	25
pH 0-6	8.2	Soil Texture 6-24	n/a	Herbicide App. Date	5/20
Org.Matter (%) 0-6	1.4	Soil Texture 24-36	n/a	Herbicide Product	Bromac
N (lbs/ac) 0-6	14	Soil Texture 36-48	n/a	Herbicide Rate (/ac)	19.2 oz
N (lbs/ac) 6-24	36	Init PAW (in.) 0-6"	1.08	Precip (in.) Plnt'g-Harvest	6.87
N (lbs/ac) 24-36	56	Init PAW (in.) 6-24"	3.67	Precip (>.1) Plnt'g-Harvest	5.94
N (lbs/ac) 36-48	66	Init PAW (in.) 24-36"	2.20	Harvest Date	8/12
N (lbs/ac) 0-48	172	Init PAW (in.) 36-48"	2.40	Rooting Depth (in.)	38"
P (ppm) Olsen 0-6	18	Init PAW (in.) 0-48"	9.34	Post PAW (in.) 0-6"	0.66
K (ppm) 0-6	342	Cropping System	NT-ChmFlw	Post PAW (in.) 6-24"	2.88
Ca (ppm)	5108	Previous Crop	Oilseeds	Post PAW (in.) 24-36"	1.81
Mg (ppm) 0-6	474	Planting Date	9/18	Post PAW (in.) 36-48"	1.90
Na (ppm) 0-6	32	Planting Depth (in.)	1.50	Post PAW (in.) 0-48"	7.26
SaltHaz(MMHOS/cm)0-6	0.31	Moist Soil Depth @ Plnt'g	48+	Precip (>.1) Hvst-Post	0.36

**TABLE 2. Ten-Year Yield Summary on Selected Entries from Dryland Intrastate Winter Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 2000-2009. (Exp# 3502-WW)**

2/ VARIETY or SELECTION	No. of YEARS TESTED	1/ YIELD (Bushels Per Acre)										AVE. for YEARS TESTED	% of CHECK YIELD 3/	10-YR COMP. AVE. YIELD 4/	
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009				
MT00159	YELLOWSTONE (++)	8		39.6	30.2	70.3	58.7	65.6	58.0	69.8	39.7	54.0	114.4	<b>52.8</b>	
PI619098	WAHOO (++)	8		39.8	28.5	72.8	54.7	69.0	54.4	73.5	38.5	53.9	114.2	<b>52.7</b>	
S94-4	CDC FALCON (P+)	10	66.0	26.4	38.9	30.4	69.3	62.3	58.9	61.4	68.2	42.1	52.4	113.4	<b>52.4</b>
BZ9W96-919	PRYOR (P+)	10	71.0	23.6	39.0	37.7	73.1	63.6	57.5	47.8	68.0	41.1	52.2	113.1	<b>52.2</b>
MTS0031	GENOU (++) (saw fly res)	8		32.6	28.7	68.7	63.8	54.7	57.0	61.0	46.4	51.6	109.4	<b>50.5</b>	
BZ96-788	LEDGER (P+)	7			32.3	65.2	69.6	52.5	61.1	57.9	39.3	54.0	109.3	<b>50.5</b>	
CI 17879	ROCKY (P)	10	62.7	25.3	35.6	27.6	74.7	59.9	61.4	49.9	64.4	39.5	50.1	108.4	<b>50.1</b>
MTCL0316	NORRIS (P, CL++)	5						62.8	54.0	56.0	64.6	36.2	54.7	108.0	<b>49.9</b>
GM10001	NUFRONTIER (HW, P+)	7	63.5	22.7	35.3	34.5	69.7	58.4	54.6				48.4	108.0	<b>49.9</b>
BZ022060	CARTER (P++)	5						63.1	48.3	57.2	65.8	38.0	54.5	107.6	<b>49.7</b>
MTCL0306	HYALITE (P, CL++)	5						53.5	53.2	56.4	67.3	37.2	53.5	105.7	<b>48.8</b>
ABOVE	ABOVE (CL+)	5			28.1	34.5	70.6	54.5	53.9				48.3	105.3	<b>48.7</b>
MTW9441	NUSKY (HW)	10	59.7	25.3	42.5	28.1	63.4	49.4	56.8	54.0	58.3	43.1	48.1	104.0	<b>48.1</b>
JAGALENE	JAGALENE (P+)	7			22.5	68.0	58.4	50.6	54.4	68.2	35.1	51.0	103.4	<b>47.8</b>	
ND9257	JERRY	8		42.9	25.5	60.6	48.6	55.9	52.9	59.9	38.3	48.1	101.8	<b>47.0</b>	
PI586806	NUWEST (HW, ++)	9	57.9	25.2	40.5	24.2	63.9	55.2	58.5	46.8	59.6		48.0	101.6	<b>46.9</b>
PI593889	RAMPART (saw fly res)	10	55.8	22.4	36.8	32.4	63.2	60.6	49.0	55.3	53.7	37.8	46.7	101.1	<b>46.7</b>
CI 17860	NEELEY	10	69.0	19.9	34.4	30.3	65.6	44.6	53.6	49.8	60.8	38.2	46.6	100.9	<b>46.6</b>
PI555458	PROMONTORY	10	59.1	22.9	31.6	30.1	66.2	45.9	53.9	50.7	66.5	37.2	46.4	100.5	<b>46.4</b>
MTCL0318	BYNUM (P, CL++) (sf res)	5						49.9	47.7	53.5	61.1	42.2	50.9	100.5	<b>46.4</b>
PI593891	VANGUARD (saw fly res)	9	52.4	22.5	30.8	30.8	61.7	65.3	51.2	57.5	53.8		47.3	100.2	<b>46.3</b>
PI517194	TIBER	10	61.8	22.5	32.1	26.8	65.5	49.1	55.9	52.3	59.1	36.8	46.2	100.0	<b>46.2</b>
MT9432	BIGSKY (++)	8	54.5	21.1	32.5	29.6	64.3	49.0	58.6	53.7			45.4	99.3	<b>45.9</b>
PI599336	MORGAN (P+)	8	56.3	20.7	37.5	26.8	58.1	44.0	56.0	53.2			44.1	96.3	<b>44.5</b>
CI 17735	NORSTAR	6	49.0	20.9	40.2	19.0	47.4	46.3					37.1	86.5	<b>39.9</b>
<b>MEANS (For Entries Listed)</b>			<b>59.9</b>	<b>23.0</b>	<b>36.4</b>	<b>29.1</b>	<b>65.8</b>	<b>55.6</b>	<b>55.5</b>	<b>54.2</b>	<b>63.1</b>	<b>39.3</b>			<b>48.3</b>
April-July Precip. (in.)			6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.43	8.09	6.29	7.03		
Total Annual Precip. (in.)			10.27	8.83	13.29	11.54	14.43	11.87	10.29	12.42	12.21	12.46	11.76		
Soil NO <sub>3</sub> (lbs.) to SD at Planting			Pndg	Pndg	110	150	418	138	390	416	275	172	259		
SD (Sampling Depth in Inches)			Pndg	Pndg	48	48	48	48	48	48	48	48	48		
Fertilizer Applied			(# N)	70	70	70	70	70	70	70	70	70	70		
			(# P <sub>2</sub> O <sub>5</sub> )	40	40	40	40	40	40	40	40	40	40		
			(# K <sub>2</sub> O)	25	25	25	25	25	25	25	25	25	25		

Long-term check variety is Tiber.

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

2/ P = Private Variety, + = Protected Variety, ++ = PVP Title 5 or Title 5 Pending, HW = Hard White Wheat, CL = Clearfield Line.

3/ Percent of Tiber yield 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 of a given entry for years tested, y = average yield for Tiber for the same years, and z = 10-Yr average yield 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. 2000-2009. (Exp# 3502-WW)**

2/ VARIETY or SELECTION	No. of YEARS TESTED	1/ TEST WEIGHT (Pounds Per Bushel)										AVE. for YEARS TESTED	% of CHECK TEST WT 3/	10-YR COMP. AVE. TEST WT 4/	
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009				
JAGALENE	JAGALENE (P+)	7				60.7	62.4	62.1	64.23	61.70	62.73	63.00	62.4	102.2	<b>62.4</b>
MTCL0316	NORRIS (P, CL++)	5						63.2	63.53	61.27	60.27	62.57	62.2	101.6	<b>62.0</b>
CI 17879	ROCKY (P)	10	62.4	60.0	59.7	62.1	62.4	61.6	65.37	61.27	59.90	62.83	61.8	101.2	<b>61.8</b>
P1555458	PROMONTORY	10	62.6	61.0	59.9	61.4	60.9	61.3	64.10	61.17	61.53	62.57	61.7	101.1	<b>61.7</b>
GM10001	NUFRONTIER (HW, P+)	7	63.6	61.3	57.7	62.1	62.3	60.8	63.90				61.7	100.9	<b>61.6</b>
MTCL0318	BYNUM (P, CL++) (sf res)	5						61.5	62.87	60.17	61.40	61.43	61.5	100.4	<b>61.3</b>
BZ96-788	LEDGER (P+)	7				61.4	60.8	62.2	63.20	60.63	60.10	60.40	61.3	100.3	<b>61.2</b>
MTCL0306	HYALITE (P, CL++)	5						61.0	63.17	60.47	60.37	61.87	61.4	100.3	<b>61.2</b>
PI517194	TIBER	10	61.3	60.7	60.7	61.7	59.7	61.0	62.63	60.00	60.20	62.13	61.0	100.0	<b>61.0</b>
MT9432	BIGSKY (++)	8	61.3	60.8	60.9	61.3	58.5	59.9	63.13	59.30			60.6	99.5	<b>60.7</b>
MTW9441	NUSKY (HW)	10	61.8	60.3	60.0	60.7	59.3	60.3	62.63	59.53	58.33	61.97	60.5	99.2	<b>60.5</b>
ABOVE	ABOVE (CL+)	5			57.9	59.6	61.6	61.0	62.87				60.6	99.1	<b>60.4</b>
P1586806	NUWEST (HW, ++)	9	61.7	59.9	60.0	60.2	60.0	60.3	63.13	59.23	58.10		60.3	99.0	<b>60.4</b>
BZ022060	CARTER (P++)	5						62.0	62.03	59.10	59.43	60.37	60.6	99.0	<b>60.4</b>
MTS0031	GENOU (++) (saw fly res)	8			58.4	61.3	59.7	60.9	62.53	59.67	58.67	62.00	60.4	99.0	<b>60.4</b>
CI 17735	NORSTAR	6	61.0	59.8	59.6	61.9	59.1	58.7					60.0	98.6	<b>60.2</b>
S94-4	CDC FALCON (P+)	10	61.5	57.4	57.7	59.8	60.7	60.3	63.07	59.00	60.23	61.83	60.2	98.6	<b>60.2</b>
PI593891	VANGUARD (saw fly res)	9	60.1	58.6	58.1	61.0	60.0	61.2	62.03	59.33	58.37		59.9	98.3	<b>60.0</b>
BZ9W96-919	PRYOR (P+)	10	61.8	59.1	58.8	61.9	58.4	59.3	62.07	57.43	59.37	61.67	60.0	98.3	<b>60.0</b>
P1593889	RAMPART (saw fly res)	10	59.8	58.3	58.8	61.1	59.1	60.5	62.50	58.57	59.07	61.30	59.9	98.2	<b>59.9</b>
CI 17860	NEELEY	10	61.7	58.2	57.0	61.2	59.2	60.2	62.33	59.17	57.10	61.23	59.7	97.9	<b>59.7</b>
PI619098	WAHOO (++)	8			57.5	60.6	59.5	59.0	62.27	58.63	58.37	61.43	59.7	97.8	<b>59.6</b>
MT00159	YELLOWSTONE (++)	8			59.2	60.0	57.9	59.4	62.20	58.27	57.50	61.73	59.5	97.6	<b>59.5</b>
P1599336	MORGAN (P+)	8	60.8	59.4	57.9	60.3	58.7	57.9	61.90	58.23			59.4	97.4	<b>59.4</b>
ND9257	JERRY	8			57.7	60.5	58.8	59.3	62.13	58.00	56.73	60.47	59.2	97.1	<b>59.2</b>
<b>MEANS (For Entries Listed)</b>			61.5	59.6	58.8	61.0	60.0	60.6	62.9	59.6	59.4	61.7			<b>60.6</b>
April-July Precip. (in.)			6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.43	8.09	6.29	7.03		
Total Annual Precip. (in.)			10.27	8.83	13.29	11.54	14.43	11.87	10.29	12.42	12.21	12.46	11.76		
Soil NO <sub>3</sub> (lbs.) to SD at Planting			Pndg	Pndg	110	150	418	138	390	416	275	172	259		
SD (Sampling Depth in Inches)			Pndg	Pndg	48	48	48	48	48	48	48	48	48		
Fertilizer Applied		(# N)	70	70	70	70	70	70	70	70	70	70	70		
		(# P <sub>2</sub> O <sub>5</sub> )	40	40	40	40	40	40	40	40	40	40	40		
		(# K <sub>2</sub> 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, HW = Hard White Wheat, CL = Clearfield Line.

3/ Percent of Tiber 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 test weight of a given entry for years tested, y = average test weight for Tiber for the same years, and z = 10-Yr average test weight for the check variety Tiber.

**TABLE 4. Seven-Year Saw fly Rating Summary on Selected Entries from Dryland Intrastate Winter Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 2003-2009. (Exp# 3502-WW)**

2/ VARIETY or SELECTION	No. of YEARS TESTED	1/ SAWFLY RATING (% Cut and Lodged)								AVE. for YEARS TESTED	% of CHECK SAWFLY 3/	7-YR COMP. AVE. SAWFLY 4/
		2003	2004	2005	2006	2007	2008	2009				
PI593889	RAMPART (saw fly res)	7	0.3	3.3	8.3	2.3	2.3	13.3	1.0	4.4	100.0	<b>4.4</b>
PI593891	VANGUARD (saw fly res)	6	0.2	1.7	6.7	8.3	6.7	13.3		6.1	122.9	<b>5.4</b>
MTS0031	GENOU (++) (saw fly res)	7	0.5	3.3	10.0	6.7	5.0	11.7	1.0	5.5	123.2	<b>5.5</b>
MTCL0318	BYNUM (P, CL++) (sf res)	5			15.0	8.3	6.7	13.3	10.0	10.7	195.2	<b>8.6</b>
BZ022060	CARTER (P++)	5			13.3	15.0	10.0	10.0	11.7	12.0	219.6	<b>9.7</b>
SD97W609	ALICE (HW++)	3					8.3	26.7	6.7	13.9	250.1	<b>11.1</b>
BZ96-919	PRYOR (P+)	7	0.7	3.3	8.3	20.0	35.0	13.3	13.3	13.4	303.4	<b>13.4</b>
98X43515	HAWKEN (P+)	3					21.7	23.3	11.7	18.9	340.2	<b>15.1</b>
CI 17879	ROCKY (P)	7	0.8	10.0	28.3	8.3	30.0	13.3	15.0	15.1	341.6	<b>15.1</b>
MTCL0316	NORRIS (P, CL++)	5			21.7	8.3	23.3	23.3	18.3	19.0	347.7	<b>15.4</b>
BZ96-788	LEDGER (P+)	7	0.2	10.0	21.7	36.7	13.3	46.7	11.7	20.0	452.6	<b>20.0</b>
S94-4	CDC FALCON (P+)	7	1.0	8.3	33.3	25.0	26.7	36.7	13.3	20.6	465.9	<b>20.6</b>
PI619098	WAHOO (++)	7	0.7	5.0	26.7	23.3	36.7	35.0	23.3	21.5	486.3	<b>21.5</b>
MT00159	YELLOWSTONE (++)	7	0.5	13.3	40.0	18.3	40.0	18.3	23.3	22.0	496.5	<b>22.0</b>
PI517194	TIBER	7	0.8	6.7	31.7	26.7	41.7	26.7	25.0	22.7	513.8	<b>22.7</b>
WENDY	WENDY (HW++)	4				11.7	20.0	38.3	28.3	24.6	517.7	<b>22.9</b>
MTCL0306	HYALITE (HW, P, CL++)	5			40.0	28.3	25.0	30.0	18.3	28.3	518.5	<b>22.9</b>
JAGALENE	JAGALENE (P+)	7	0.5	10.0	55.0	23.3	23.3	38.3	23.3	24.8	561.0	<b>24.8</b>
ND9257	JERRY	7	0.7	8.3	45.0	18.3	45.0	21.7	40.0	25.6	577.8	<b>25.6</b>
CI 17860	NEELEY	7	1.2	11.7	56.7	36.7	28.3	23.3	21.7	25.6	579.3	<b>25.6</b>
CO0016	RIPPER	3					33.3	41.7	25.0	33.3	600.3	<b>26.6</b>
MT 9432	BIGSKY (++)	5	1.2	5.0	30.0	50.0	15.0			20.2	608.0	<b>26.9</b>
SD98102	DARRELL (++)	3					41.7	35.0	26.7	34.4	620.3	<b>27.5</b>
PI555458	PROMONTORY	7	1.5	15.0	41.7	28.3	56.7	28.3	48.3	31.4	709.5	<b>31.4</b>
PI599336	MORGAN (P+)	5	0.7	8.3	53.3	36.7	26.7			25.1	755.1	<b>33.4</b>
MEANS (For Entries Listed)			0.7	7.7	29.3	21.0	24.9	25.3	19.0			<b>19.1</b>
April-July Precip. (in.)			7.1	8.6	7.4	5.7	7.4	8.1	6.3	7.2		
Total Annual Precip. (in.)			11.54	14.43	11.87	10.29	12.42	12.21	12.46	12.17		
Soil NO <sub>3</sub> (lbs.) to SD at Planting			150	418	138	390	416	275	172	280		
SD (Sampling Depth in Inches)			48	48	48	48	48	48	48	48		
Fertilizer Applied												
	(# N)		70	70	70	70	70	70	70	70		
	(# P <sub>2</sub> O <sub>5</sub> )		40	40	40	40	40	40	40	40		
	(# K <sub>2</sub> O)		25	25	25	25	25	25	25	25		

Long-term check variety is Rampart.

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

2/ P = Private Variety, + = Protected Variety, ++ = PVP Title 5 or Title 5 Pending, HW = Hard White Wheat, CL = Clearfield Line.

3/ Percent of Rampart saw fly rating for the same data years as those in which a given entry was tested.

4/ 7-Yr Comparable Average = (x/y) \* z where x = average saw fly rating of a given entry for years tested, y = average saw fly rating for Rampart for the same years, and z = 7-Yr average saw fly rating for the check variety Rampart.



**TABLE 5. Advanced Yield Spring Wheat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions. Northern Agricultural Research Center. Havre, Montana. 2009. (Exp# 09-3102-SW)**

ID	CULTIVAR or SELECTION	STAND %	1/ HEAD DATE	PLNT HT Inches	2/ YIELD Bu/Ac	MOIST %	TEST WT Lbs/Bu	3/ PROTEIN %	4/ SAWFLY %
PI642366	VIDA	92.7	178.3	26.4	55.6	9.2	58.8	14.2	8.7
AGRIPR10	BRENNAN	88.9	176.3	24.9	54.2	9.2	59.3	14.8	5.3
MT 0856	MT0249/MT0266	94.1	176.0	26.9	51.9	8.9	57.7	14.9	10.0
MT 0747	MT0223/MT0266	88.2	176.0	26.1	51.1	8.9	58.7	15.1	15.0
MT 0847	MT0245/NDSW0246	91.0	176.7	25.3	50.9	9.2	59.6	15.0	10.0
MT 0751	MT0220/MT0266	92.7	176.7	25.6	50.7	9.1	58.3	14.9	21.7
ND 695	REEDER	91.7	177.3	25.6	49.9	9.2	60.0	14.6	6.7
MT 0744	MT0223/MT0266	92.7	177.0	27.7	48.9	9.1	59.9	14.9	11.7
BZ999592	ONEAL	92.0	178.7	26.1	48.7	9.5	60.6	14.6	8.3
MT 0746	MT0223/MT0266	92.7	176.7	27.9	48.4	9.1	58.4	15.2	13.3
MT 0718	CHOTEAU/REEDER	89.3	177.7	23.5	48.3	9.0	58.8	14.6	3.7
AGRIPR11	CHOTEAU/3*NORPRO	92.4	178.3	24.3	48.0	9.2	59.0	15.2	13.3
MT 0855	MT0249/MT0266	92.0	177.3	25.9	47.9	9.0	57.8	15.2	8.3
MT 0814	HANK/MT0249	89.6	177.3	26.8	47.6	9.6	59.8	14.7	8.3
MT 0873	CHOTEAU/REEDER (0310019-2	94.5	178.7	25.7	46.9	9.3	58.8	14.5	10.0
MT 0745	MT0223/MT0266	93.8	176.0	25.5	46.8	9.2	59.9	14.8	10.0
MT 0801	MCNEAL/MT0245	92.3	176.0	27.3	46.7	9.1	58.1	15.1	23.3
BZ92413R	CONAN/AGAWAM	89.9	176.3	25.0	46.6	9.7	60.2	14.3	2.3
BZ92413W	CONAN/AGAWAM	92.4	176.0	24.7	46.5	9.6	60.3	14.3	2.3
MT 0816	HANK/MT0266	93.8	174.7	25.1	46.2	9.3	59.4	14.8	8.3
MT 0664	REEDER/MCNEAL//MCNEAL/WA7	92.0	178.0	26.1	46.1	9.2	59.2	14.4	16.7
CI 13596	FORTUNA	93.7	177.3	30.1	45.6	9.3	59.4	14.8	15.0
CI 10003	THATCHER	94.1	180.3	28.2	45.5	9.2	58.9	14.5	10.0
MT 0869	CHOTEAU/REEDER	95.2	176.7	25.6	45.5	9.1	59.2	14.8	18.3
MT 0862	MT0266/MT9955	91.0	177.0	23.6	45.5	9.2	59.0	14.8	11.7
NDSW0449	MOTT	93.8	179.0	27.0	45.3	8.9	58.0	15.1	1.0
BZ992322	HANK	86.4	177.7	24.3	45.3	9.3	58.8	14.6	10.0
MTHW0867	ID597/MTHW0201	92.7	179.0	24.9	45.3	9.3	58.7	14.9	8.3
AGRIPRO7	KUNTZ	91.0	178.7	25.2	45.2	9.0	58.4	14.2	10.0
MT 0414	MT9408/MT9406//REEDER	91.3	178.3	26.2	45.2	9.2	59.4	14.7	10.0
BZ996434	CORBIN	92.7	176.7	25.9	45.2	9.6	59.9	14.6	5.3
MT 0830	CHOTEAU/MT0249	92.0	176.3	24.4	45.1	9.1	59.2	14.8	10.0
MT 0853	MT0249/MT0266	88.9	176.3	25.8	45.1	9.1	58.4	15.3	13.3
AGRIPR12	CHOTEAU/4*NORPRO	92.7	177.7	23.7	44.8	9.4	59.4	13.7	6.7
MT 0824	CHOTEAU/MT0245	88.2	177.3	23.9	44.5	8.7	58.0	15.1	20.0
MT 0861	MT0249/SD3540	93.8	178.3	25.5	44.5	9.1	57.7	15.2	2.3
MT 0813	HANK/MT0249	89.6	173.7	28.1	44.3	9.5	59.6	14.7	18.3
MT 0802	MCNEAL/MT0266	94.8	180.3	27.3	44.3	9.0	58.8	14.9	28.3
MT 0755	MT0220/MT0266	92.7	175.7	26.2	44.2	9.1	58.8	15.0	28.3
AGRIPRO9	JENNA	87.1	181.0	25.1	44.1	8.9	57.5	14.9	10.0
BZ992588	CONAN	92.4	178.3	26.1	44.1	9.4	59.8	14.9	1.0
MT 0852	MT0249/CHOTEAU	93.4	178.0	25.2	43.8	9.1	58.6	15.4	4.0
MT 0735	CHOTEAU/HY369	91.0	175.7	26.7	43.5	9.1	57.3	15.5	18.3

**TABLE 5. Advanced Yield Spring Wheat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions. Northern Agricultural Research Center. Havre, Montana. 2009. (Exp# 09-3102-SW)**

ID	CULTIVAR or SELECTION	STAND %	1/ HEAD DATE	PLNT HT Inches	2/ YIELD Bu/Ac	MOIST %	TEST WT Lbs/Bu	3/ PROTEIN %	4/ SAWFLY %
MT 0849	MT0249/CHOTEAU	86.1	177.3	25.4	43.5	8.9	57.7	15.3	10.3
ACS52610	VOLT	91.0	179.7	25.5	43.4	9.2	59.8	14.2	15.0
AGRIPRO3	FREYR	95.1	177.3	28.7	43.2	9.2	59.4	14.4	13.3
LILLIAN	LILLIAN	95.5	180.0	27.6	43.2	9.1	57.3	16.1	15.0
PI632252	OUTLOOK	94.4	180.3	24.8	43.1	9.1	59.2	14.9	10.0
BZ9M1044	JEDD	93.1	177.3	22.1	42.9	9.3	59.7	15.0	5.0
AGRIPRO6	KELBY	94.1	176.0	25.6	42.4	9.3	59.5	15.0	7.0
MT 0832	CHOTEAU/MT0249	91.3	176.3	27.7	42.3	9.1	57.8	14.9	10.0
MT 0815	HANK/MT0249	91.3	176.3	26.1	42.3	9.3	60.6	15.2	13.3
PI633974	CHOTEAU	91.3	177.0	24.5	42.3	8.9	57.9	15.4	10.0
MT 0750	MT0220/MT0261	89.9	179.3	26.9	42.1	8.9	58.2	15.0	15.0
AGRIPRO8	AP604 CL	92.0	175.7	25.0	42.0	9.2	59.9	14.7	13.3
MT 0868	CHOTEAU/REEDER	95.1	176.7	24.6	41.9	9.2	59.1	15.3	16.7
PI574642	MCNEAL	92.7	180.0	24.3	41.9	8.9	58.5	15.0	18.3
MT 0808	WA7925/MCNEAL	90.3	173.7	25.5	41.9	9.3	58.8	14.4	33.3
MT 0829	CHOTEAU/MT0249	94.1	176.3	25.9	41.4	9.2	58.1	15.2	11.7
MT 0827	CHOTEAU/MT0249	95.1	176.7	26.9	41.3	9.3	59.5	15.1	8.3
MTHW0771	MTHW0202/CHOTEAU	93.4	174.0	22.7	40.9	9.5	59.7	14.8	20.0
BZ9M7106	CORBIN/BZ9M3-1024///9705-	88.2	183.7	22.5	40.8	8.4	55.2	16.3	1.0
MT 0807	WA7925/MCNEAL	95.1	173.7	27.5	40.4	9.6	60.9	14.8	18.3
MT 0826	CHOTEAU/MT0249	90.6	177.0	26.2	39.4	9.0	57.8	16.2	21.7
EXPERIMENTAL MEANS		92.0	177.3	25.7	45.3	9.2	58.9	14.9	11.9
LSD (0.05)		6.7	1.3	2.0	6.9	0.3	1.0	-	8.7
C.V.2: (S of MEAN / MEAN)*100		2.6	0.3	2.8	5.5	1.2	0.6	-	26.1

1/ No. of Days from January 1 (177 = June 26).

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# 09-3102-SW)							
Field	A-6-2		SaltHaz(MMHOS/cm) 6-24	0.35		Dry Surf Soil (in.) @ Plnt'g	0.25
Quarter	NW		S (ppm) 0-24	14		2" Soil Temp (°F) @ Plnt'g	72
Section	33		Zn (ppm) 0-6	0.4		4" Soil Temp (°F) @ Plnt'g	65
Tow nship	32N		Fe (ppm) 0-6	11.2		Fertilizer Formulation	Gran Blend
Range	15E		Mn (ppm) 0-6	3.95		Fertilizer Placement	Bnd at Plntg
Latitude	N48 29.613'		Cu (ppm) 0-6	1.35		Fert. Rate (lbs/ac) N	70
Longitude	W109 47.947'		CEC 0-6	26.3		Fert. Rate (lbs/ac) P2O5	40
Soil Series	TelstadCl-Lm		Soil Texture 0-6	n/a		Fert. Rate (lbs/ac) K2O	25
pH 0-6	8.1		Soil Texture 6-24	n/a		Herbicide App. Date	6/16
Org.Matter (%) 0-6	1.4		Soil Texture 24-36	n/a		Herbicide Product	Bronate Adv
N (lbs/ac) 0-6	22		Soil Texture 36-48	n/a		Herbicide Rate (/ac)	24 oz
N (lbs/ac) 6-24	63		Init PAW (in.) 0-6"	1.23		Precip (in.) Plnt'g-Harvest	6.79
N (lbs/ac) 24-36	30		Init PAW (in.) 6-24"	3.99		Precip (>.1) Plnt'g-Harvest	5.90
N (lbs/ac) 36-48	24		Init PAW (in.) 24-36"	2.77		Harvest Date	8/22
N (lbs/ac) 0-48	139		Init PAW (in.) 36-48"	2.33		Rooting Depth (in.)	28"
P (ppm) Olsen 0-6	23		Init PAW (in.) 0-48"	10.32		Post PAW (in.) 0-6"	0.66
K (ppm) 0-6	288		Cropping System	NT-ChmFlw		Post PAW (in.) 6-24"	3.06
Ca (ppm)	4251		Previous Crop	SW		Post PAW (in.) 24-36"	2.06
Mg (ppm) 0-6	506		Planting Date	4/21		Post PAW (in.) 36-48"	2.04
Na (ppm) 0-6	24		Planting Depth (in.)	1.5		Post PAW (in.) 0-48"	7.83
SaltHaz (MMHOS/cm) 0-6	0.38		Moist Soil Depth @ Plnt'g	48+		Precip (>.1) Hvst-Post	0

**TABLE 6. Ten-Year Yield Summary on Selected Entries from Dryland Advanced Spring Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 2000-2009. (Exp# 3102-SW)**

2/ VARIETY or SELECTION	No. of YEARS TESTED	1/ YIELD (Bushels Per Acre)										AVE. for YEARS TESTED	% of CHECK YIELD 3/	10-YR COMP. AVE. YIELD 4/
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009			
PI642366 VIDA (++)	7				15.2	51.8	59.3	35.8	42.4	55.3	55.6	45.1	146.8	<b>43.7</b>
BZ999592 ONEAL (P+)	6					54.9	57.2	31.2	33.6	52.2	48.7	46.3	133.6	<b>39.8</b>
BZ996472 AGAWAM (P++)(saw fly res)	7	37.8	18.6	37.7	11.5	52.6	53.8	34.03				35.2	130.0	<b>38.7</b>
PI632252 OUTLOOK (++)	10	41.0	22.9	43.4	15.7	49.4	58.9	31.2	35.7	45.2	43.1	38.7	129.8	<b>38.7</b>
BZ9M1044 JEDD (P+)	5						59.9	33.7	34.4	48.2	42.9	43.8	126.8	<b>37.8</b>
ND695 REEDER (+)	10	43.3	22.5	34.9	13.0	40.3	51.9	30.0	36.2	51.0	49.9	37.3	125.2	<b>37.3</b>
BZ992322 HANK (P+)	10	41.7	20.5	36.4	11.0	44.7	54.3	31.7	34.0	45.1	45.3	36.5	122.4	<b>36.5</b>
BZ992588 CONAN (P+)(saw fly tol)	10	36.0	20.4	33.7	13.9	42.7	57.1	32.9	36.1	46.6	44.1	36.4	122.0	<b>36.4</b>
BZ996434 CORBIN (P+)(saw fly res)	8		20.0	35.4	10.3	48.6		28.9	42.0	47.8	45.2	34.8	121.9	<b>36.3</b>
AGRIPRO1 NORPRO (P+)	7			35.5	8.9	39.9	50.3	30.0	35.9	45.0		35.1	120.6	<b>35.9</b>
PI633974 CHOTEAU (++) (saw fly res)	10	34.2	19.3	35.7	12.7	43.2	58.0	32.1	36.0	45.1	42.3	35.9	120.4	<b>35.9</b>
PI527682 AMIDON (mod saw fly res)	5	35.9	22.2	40.6	11.1	38.2						29.6	118.3	<b>35.2</b>
PI574642 McNEAL	10	40.2	18.9	36.5	13.2	40.4	51.8	27.2	35.4	45.9	41.9	35.1	117.9	<b>35.1</b>
PI607557 SCHOLAR (+)(mod saw fly res)	7	38.5	21.0	36.8	11.0	44.1	45.8	26.0				31.9	117.8	<b>35.1</b>
AGRIPRO6 KELBY (P+)	5					38.7		30.8	37.7	48.9	42.4	39.7	117.6	<b>35.0</b>
AGRIPRO3 FREYR (P+)	6					40.6	48.8	31.9	33.8	45.2	43.2	40.6	117.1	<b>34.9</b>
ACS52610 VOLT (P+)	5						53.0	28.4	35.1	42.4	43.4	40.5	117.1	<b>34.9</b>
PI549275 HI-LINE	5	37.6	19.7	36.0	11.1	40.7						29.0	115.9	<b>34.5</b>
PI619086 EXPLORER (HW, ++)	6		19.8	36.7	13.1	35.8	47.2	30.5				30.5	115.2	<b>34.3</b>
CI17430 NEWANA	5	35.6	21.5	38.5	12.1	35.7						28.7	114.6	<b>34.1</b>
CI13596 FORTUNA (saw fly res)	10	35.9	16.7	29.9	9.5	42.0	49.7	33.8	31.5	46.1	45.6	34.1	114.4	<b>34.1</b>
PI592761 ERNEST (+)(saw fly res)	8	37.3	19.6	36.1	12.7	39.5	45.0	24.9	32.5			30.9	112.9	<b>33.6</b>
AGRIPRO2 KNUDSON (P+)	5			31.6	7.6	38.8	46.7	28.0				30.5	108.7	<b>32.4</b>
AGRIPRO7 KUNTZ (P+)	4							26.1	31.3	39.0	45.2	35.4	106.0	<b>31.6</b>
CI10003 THATCHER	10	30.4	18.4	34.2	6.9	35.2	39.3	24.9	29.9	33.2	45.5	29.8	100.0	<b>29.8</b>
MEANS (For Entries Listed)		37.5	20.1	36.1	11.6	42.6	52.0	30.2	35.2	46.0	45.3			<b>35.7</b>
April-July Precip. (in.)		6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.43	8.09	6.29	7.03		
Total Annual Precip. (in.)		10.27	8.83	13.29	11.54	14.43	11.87	10.29	12.42	12.21	12.46	11.76		
Soil NO <sub>3</sub> (lbs.) to SD at Planting		Pndg	Pndg	98	44	86	142	119	220	252	139	138		
SD (Sampling Depth in Inches)		Pndg	48	48	48	48	48	48	48	48	48	48		
Fertilizer Applied		(# N)	70	70	70	70	70	70	70	70	70	70		
		(# P <sub>2</sub> O <sub>5</sub> )	40	40	40	40	40	40	40	40	40	40		
		(# K <sub>2</sub> O)	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, HW = Hard White Wheat.

3/ Percent of Thatcher yield 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 of a given entry for years tested, y = average yield for Thatcher for the same years, and z = 10-Yr average yield for the check variety Thatcher.

**TABLE 7. Ten-Year Test Weight Summary on Selected Entries from Dryland Advanced Spring Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 2000-2009. (Exp# 3102-SW)**

2/ VARIETY or SELECTION	No. of YEARS TESTED	1/ TEST WEIGHT (Pounds Per Bushel)										AVE. for YEARS TESTED	% of CHECK TEST WT 3/	10-YR COMP. AVE. TEST WT 4/	
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009				
BZ996472	AGAWAM (P++) (saw fly res)	7	60.6	60.0	61.2	60.3	63.0	59.9	58.6				60.5	111.3	<b>60.9</b>
AGRIPRO6	KELBY (P+)	5				60.0			57.2	59.2	59.6	59.5	59.1	108.9	<b>59.6</b>
PI607557	SCHOLAR (+) (mod saw fly res)	7	60.7	59.4	61.3	57.3	58.7	58.3	55.8				58.8	108.1	<b>59.2</b>
CI17430	NEWANA	5	57.7	59.6	62.0	56.2	58.8						58.9	107.5	<b>58.8</b>
AGRIPRO2	KNUDSON (P+)	5			60.5	57.4	59.0	57.5	54.8				57.8	107.4	<b>58.8</b>
BZ992588	CONAN (P+) (saw fly tol)	10	59.4	59.5	61.1	56.6	59.9	59.4	54.6	57.5	58.6	59.8	58.6	107.2	<b>58.6</b>
ACS52610	VOLT (P+)	5						60.1	56.4	57.5	59.1	59.8	58.6	107.1	<b>58.6</b>
PI527682	AMIDON (mod saw fly res)	5	59.1	57.7	59.8	57.1	59.1						58.6	107.0	<b>58.5</b>
PI592761	ERNEST (+) (saw fly res)	8	59.7	58.0	60.0	56.8	59.4	56.9	54.5	57.3			57.8	106.8	<b>58.4</b>
BZ996434	CORBIN (P+) (saw fly res)	8		57.4	60.9	57.7	60.1		54.7	57.6	57.0	59.9	58.2	106.5	<b>58.3</b>
BZ9M1044	JEDD (P+)	5						59.9	55.5	58.1	57.9	59.7	58.2	106.5	<b>58.3</b>
AGRIPRO3	FREYR (P+)	6					61.0	58.8	55.1	57.1	56.9	59.4	58.1	106.5	<b>58.3</b>
ND695	REEDER (+)	10	60.1	58.2	60.6	57.4	58.9	58.6	53.6	56.8	58.2	60.0	58.2	106.4	<b>58.2</b>
CI13596	FORTUNA (saw fly res)	10	59.2	57.2	59.2	56.8	59.2	59.2	56.0	56.8	58.8	59.4	58.2	106.3	<b>58.2</b>
BZ999592	ONEAL (P+)	6					60.5	58.8	54.1	56.0	57.8	60.6	58.0	106.3	<b>58.2</b>
PI619086	EXPLORER (HW, ++)	6		58.0	60.3	56.8	58.5	56.7	54.6				57.5	106.2	<b>58.1</b>
PI642366	VIDA (++)	7				55.9	58.6	57.8	52.0	55.8	58.6	58.8	56.8	105.3	<b>57.6</b>
AGRIPRO1	NORPRO (P+)	7			61.8	57.1	58.4	56.8	51.9	55.4	54.7		56.6	105.1	<b>57.5</b>
PI633974	CHOTEAU (+) (saw fly res)	10	58.5	57.0	60.2	57.8	59.5	58.7	52.8	55.7	56.3	57.9	57.4	105.0	<b>57.4</b>
PI549275	HI-LINE	5	56.0	56.4	60.7	56.6	56.9						57.3	104.7	<b>57.3</b>
BZ992322	HANK (P+)	10	57.3	57.7	59.6	56.5	58.3	55.2	53.7	54.9	56.2	58.8	56.8	103.8	<b>56.8</b>
AGRIPRO7	KUNTZ (P+)	4							55.3	56.3	55.7	58.4	56.4	103.7	<b>56.8</b>
PI632252	OUTLOOK (++)	10	56.9	56.9	59.9	54.3	57.6	58.0	51.3	55.3	57.0	59.2	56.6	103.5	<b>56.6</b>
PI574642	McNEAL	10	57.4	57.7	60.1	54.0	57.0	57.3	52.7	54.5	56.0	58.5	56.5	103.3	<b>56.5</b>
CI10003	THATCHER	10	55.9	55.5	58.3	50.3	53.8	55.8	51.1	52.5	55.1	58.9	54.7	100.0	<b>54.7</b>
<b>MEANS (For Entries Listed)</b>			<b>58.5</b>	<b>57.9</b>	<b>60.4</b>	<b>56.5</b>	<b>58.9</b>	<b>58.1</b>	<b>54.4</b>	<b>56.3</b>	<b>57.3</b>	<b>59.3</b>			<b>58.0</b>
April-July Precip. (in.)			6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.43	8.09	6.29	7.03		
Total Annual Precip. (in.)			10.27	8.83	13.29	11.54	14.43	11.87	10.29	12.42	12.21	12.46	11.76		
Soil NO <sub>3</sub> (lbs.) to SD at Planting			Pndg	Pndg	98	44	86	142	119	220	252	139	138		
SD (Sampling Depth in Inches)			Pndg	48	48	48	48	48	48	48	48	48	48		
Fertilizer Applied				(# N)	70	70	70	70	70	70	70	70	70		
				(# P <sub>2</sub> O <sub>5</sub> )	40	40	40	40	40	40	40	40	40		
				(# K <sub>2</sub> O)	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, HW = Hard White Wheat.

3/ Percent of Thatcher 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 test weight of a given entry for years tested, y = average test weight for Thatcher for the same years, and z = 10-Yr average test weight for the check variety Thatcher.

**TABLE 8. Seven-Year Sawfly Rating Summary on Selected Entries from Dryland Advanced Spring Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 2003-2009. (Exp# 3102-SW)**

2/ VARIETY or SELECTION	No. of YEARS TESTED	1/ SAWFLY RATING (% Cut and Lodged)							AVE. for YEARS TESTED	% of CHECK SAWFLY 3/	7-YR COMP. AVE. SAWFLY 4/	
		2003	2004	2005	2006	2007	2008	2009				
BZ992588	CONAN (P+)(saw fly tol)	7	0.0	15.0	1.7	3.7	1.0	15.0	1.0	5.3	35.4	<b>5.3</b>
BZ999592	ONEAL (P+)	6		8.3	3.3	5.0	2.3	11.7	8.3	6.5	37.6	<b>5.7</b>
PI642366	VIDA (++)	7	0.0	26.7	0.0	5.0	3.7	6.7	8.7	7.2	48.1	<b>7.2</b>
BZ996472	AGAWAM (P+)(saw fly res)	4	0.0	11.7	3.3	1.0				4.0	50.0	<b>7.5</b>
BZ9M1044	JEDD (P+)	5			0.0	6.7	6.7	30.0	5.0	9.7	57.8	<b>8.7</b>
BZ996434	CORBIN (P+)(saw fly res)	6	0.0	20.0		1.0	1.0	33.3	5.3	10.1	61.5	<b>9.3</b>
PI633974	CHOTEAU (++) (saw fly res)	7	0.0	18.3	3.3	2.3	1.0	51.7	10.0	12.4	82.3	<b>12.4</b>
AGRIPRO1	NORPRO (P+)	6	0.0	21.7	8.3	13.3	5.0	26.7		12.5	83.0	<b>12.5</b>
PI592761	ERNEST (+)(saw fly res)	5	0.0	20.0	5.0	2.3	3.7			6.2	83.8	<b>12.6</b>
PI632252	OUTLOOK (++)	7	0.0	30.0	3.3	16.7	8.3	36.7	10.0	15.0	99.7	<b>15.0</b>
CI 13596	FORTUNA (saw fly res)	7	1.7	20.0	6.7	3.7	5.0	53.3	15.0	15.0	100.0	<b>15.0</b>
CI 10003	THATCHER	7	3.3	30.0	11.7	10.0	15.0	31.7	10.0	16.0	106.0	<b>16.0</b>
ND 695	REEDER (+)	7	1.7	23.3	5.0	8.3	13.3	55.0	6.7	16.2	107.6	<b>16.2</b>
BZ992322	HANK (P+)	7	0.0	18.3	6.7	6.7	10.0	65.0	10.0	16.7	110.8	<b>16.7</b>
AGRIPRO6	KELBY (P+)	5		30.0		8.3	15.0	55.0	7.0	23.1	118.9	<b>17.9</b>
PI619086	EXPLORER (HW, ++)	4	1.7	28.3	5.0	5.3				10.1	126.0	<b>19.0</b>
PI574642	MCNEAL	7	1.7	25.0	6.7	15.0	15.0	51.7	18.3	19.0	126.6	<b>19.0</b>
AGRIPRO2	KNUDSON (P+)	4	0.0	30.0	6.7	8.3				11.3	140.6	<b>21.2</b>
AGRIPRO7	KUNTZ (P+)	4				13.3	16.7	70.0	10.0	27.5	142.9	<b>21.5</b>
AGRIPRO3	FREYR (P+)	6		28.3	16.7	20.0	15.0	70.0	13.3	27.2	157.6	<b>23.7</b>
ACS52610	VOLT (P+)	5			16.7	16.7	13.3	86.7	15.0	29.7	177.3	<b>26.7</b>
PI607557	SCHOLAR (+)(mod saw fly res)	4	3.3	33.3	13.3	13.3				15.8	197.8	<b>29.8</b>
MEANS (For Entries Listed)			0.8	23.1	6.5	8.5	8.4	44.1	9.6			<b>15.4</b>
April-July Precip. (in.)			7.07	8.64	7.37	5.71	7.43	8.09	6.29	7.23		
Total Annual Precip. (in.)			11.54	14.43	11.87	10.29	12.42	12.21	12.46	12.17		
Soil NO <sub>3</sub> (lbs.) to SD at Planting			44	86	142	119	220	252	139	143		
SD (Sampling Depth in Inches)			48	48	48	48	48	48	48	48		
Fertilizer Applied												
	(# N)		70	70	70	70	70	70	70	70		
	(# P <sub>2</sub> O <sub>5</sub> )		40	40	40	40	40	40	40	40		
	(# K <sub>2</sub> O)		25	25	25	25	25	25	25	25		

Long-term check variety is Fortuna.

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, HW = Hard White Wheat.

3/ Percent of Fortuna saw fly rating for the same data years as those in which a given entry was tested.

4/ 7-Yr Comparable Average = (x/y) \* z where x = average saw fly rating of a given entry for years tested, y = average saw fly rating for Fortuna for the same years, and z = 7-Yr average saw fly rating for the check variety Fortuna.

**Table 9. Montana Spring Durum Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions. Northern Agricultural Research Center. Havre, Montana. 2009. (Exp# 09-9802-SW)**

ID	CULTIVAR or SELECTION	STAND %	1/ HEAD DATE	PLNT HT Inches	2/ YIELD Bu/Ac	MOIST %	TEST WT Lbs/Bu	KRNLWT g/1000	3/ PROTEIN %	4/ HVAC SCORE	5/ SAWFLY %
Cimmyt#8	Cimmyt#8	93.8	178.7	23.3	50.8	9.3	59.9	38.0	13.0	76.6	2.3
Cimmyt#5	Cimmyt#5	93.7	177.7	24.0	50.4	8.9	57.7	36.0	13.3	71.5	1.0
Cimmyt#11	Cimmyt#11	89.2	175.7	26.5	47.3	9.2	57.5	41.5	12.9	65.5	3.7
SVEVO	SVEVO	90.0	176.0	23.4	46.8	9.2	58.8	43.7	14.7	85.3	2.3
NORMANNO	NORMANNO	90.3	177.0	23.6	46.4	9.2	58.2	40.4	14.1	80.2	3.7
MAESTRALE	MAESTRALE	92.0	176.0	24.3	45.8	9.3	58.4	38.3	13.1	69.3	3.7
STRONGFIELD	STRONGFIELD	90.6	179.7	27.8	45.8	9.1	58.8	39.3	15.1	86.8	5.3
LEVANTE	LEVANTE	92.7	176.0	22.9	45.0	8.7	59.1	43.3	13.7	68.3	8.3
DIVIDE	DIVIDE	90.3	179.0	29.2	44.7	9.0	58.4	41.6	14.1	79.7	15.0
MT01649	MT01649	94.5	176.0	21.6	43.8	8.8	57.9	39.9	14.5	76.8	20.0
SARAGOLLA	SARAGOLLA	92.7	177.3	23.3	43.7	9.0	58.1	38.4	13.5	66.6	6.7
GRENORA	GRENORA	93.4	179.0	26.1	42.8	8.8	57.5	38.7	14.3	76.1	20.0
MT04340	MT04340	90.3	178.7	23.6	42.4	8.9	59.1	41.0	14.6	86.5	3.7
MT04293	MT04293	84.7	178.7	22.8	42.1	8.9	58.6	43.6	15.0	85.8	1.0
DILSE	DILSE	92.4	180.0	26.6	42.0	8.9	58.5	40.3	15.1	78.6	21.7
ALKABO	ALKABO	87.8	178.3	26.4	41.4	8.9	58.6	40.2	14.7	74.8	21.7
MOUNTRAIL	MOUNTRAIL	92.7	179.7	27.7	41.1	9.1	58.4	37.5	14.5	81.8	18.3
MT03012	MT03012	92.4	175.0	24.1	40.1	9.0	58.2	36.8	14.4	79.9	11.7
MT04252	MT04252	91.7	177.0	21.7	40.0	9.0	59.4	40.7	14.5	88.6	3.7
ALZADA	ALZADA	94.4	177.7	26.0	39.5	9.0	58.9	40.7	15.4	88.1	15.0
MT04317	MT04317	90.6	178.3	22.6	39.2	8.9	58.7	39.0	15.0	85.7	2.3
MT04268	MT04268	90.3	177.7	22.8	38.8	8.9	58.8	41.3	14.1	87.2	2.3
MT04174	MT04174	91.3	174.7	24.0	38.4	9.1	58.7	39.8	14.1	85.4	11.7
PIERCE	PIERCE	93.4	178.7	28.5	36.7	9.0	58.9	38.2	14.6	82.5	35.0
EXPERIMENTAL MEANS		91.5	177.6	24.7	43.1	9.0	58.6	39.9	14.3	79.5	10.0
LSD (0.05)		6.4	1.4	2.0	6.4	0.2	0.5	-	-	-	6.5
C.V.2: (S of MEAN / MEAN)*100		2.5	0.3	2.8	5.2	0.7	0.3	-	-	-	22.9

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/ Hard Vitreous Amber Color.

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

Site Resource & Management Data: (Exp# 09-9802-SW)							
Field	A-6-2		SaltHaz(MMHOS/cm) 6-24	0.35		Dry Surf Soil (in.) @ Plnt'g	0.75
Quarter	NW		S (ppm) 0-24	14		2" Soil Temp (°F) @ Plnt'g	66
Section	33		Zn (ppm) 0-6	0.4		4" Soil Temp (°F) @ Plnt'g	63
Tow nship	32N		Fe (ppm) 0-6	11.2		Fertilizer Formulation	Gran Blend
Range	15E		Mn (ppm) 0-6	3.95		Fertilizer Placement	Bnd at Plntg
Latitude	N48 29.638'		Cu (ppm) 0-6	1.35		Fert. Rate (lbs/ac) N	70
Longitude	W109 47.947'		CEC 0-6	26.3		Fert. Rate (lbs/ac) P2O5	40
Soil Series	TelstadCl-Lm		Soil Texture 0-6	n/a		Fert. Rate (lbs/ac) K2O	25
pH 0-6	8.1		Soil Texture 6-24	n/a		Herbicide App. Date	6/16
Org.Matter (%) 0-6	1.4		Soil Texture 24-36	n/a		Herbicide Product	Bronate Adv
N (lbs/ac) 0-6	22		Soil Texture 36-48	n/a		Herbicide Rate (/ac)	24 oz
N (lbs/ac) 6-24	63		Init PAW (in.) 0-6"	1.23		Precip (in.) Plnt'g-Harvest	6.79
N (lbs/ac) 24-36	30		Init PAW (in.) 6-24"	3.99		Precip (>.1) Plnt'g-Harvest	5.90
N (lbs/ac) 36-48	24		Init PAW (in.) 24-36"	2.77		Harvest Date	8/24
N (lbs/ac) 0-48	139		Init PAW (in.) 36-48"	2.33		Rooting Depth (in.)	34"
P (ppm) Olsen 0-6	23		Init PAW (in.) 0-48"	10.32		Post PAW (in.) 0-6"	0.67
K (ppm) 0-6	288		Cropping System	NT-ChmFlw		Post PAW (in.) 6-24"	1.43
Ca (ppm)	4251		Previous Crop	SW		Post PAW (in.) 24-36"	1.33
Mg (ppm) 0-6	506		Planting Date	4/21		Post PAW (in.) 36-48"	1.77
Na (ppm) 0-6	24		Planting Depth (in.)	1.5		Post PAW (in.) 0-48"	5.20
SaltHaz (MMHOS/cm) 0-6	0.38		Moist Soil Depth @ Plnt'g	48+		Precip (>.1) Hvst-Post	0



**TABLE 10. Ten-Year Yield Summary on Selected Entries from Dryland Montana Spring Durum Nursery. Northern Agricultural Research Center. Havre, Montana. 2000-2009. (Exp# 9802-SW)**

2/VARIETY or SELECTION	No. of YEARS TESTED	1/ YIELD (Bushels Per Acre)										AVE. for YEARS TESTED	% of CHECK YIELD 3/	10-Yr COMP. AVE. YIELD 4/
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009			
STRONGFIELD STRONGFIELD (+)	4							31.2	37.8	46.6	45.8	40.3	112.7	<b>38.2</b>
WPBLAKER LAKER	4	37.1	22.2	39.9	12.7							28.0	107.0	<b>36.2</b>
YU894-75 ALZADA (P+)	9		18.9	39.2	9.1	47.7	46.2	30.6	44.7	45.2	39.5	35.7	105.6	<b>35.8</b>
MT03012 MT03012	4							29.9	36.5	44.5	40.1	37.7	105.4	<b>35.7</b>
GRENORA GRENORA (+)	4							29.7	37.0	41.4	42.8	37.7	105.4	<b>35.7</b>
ACAVONLE AC AVONLEA (+)	6		21.4	40.3	8.1	44.7	49.9	31.2				32.6	104.7	<b>35.5</b>
P1574642 McNEAL (HRSW check)	6	39.4	18.9	39.1	15.6	41.1	49.0					33.8	103.8	<b>35.2</b>
DIVIDE DIVIDE	4							27.1	37.6	39.1	44.7	37.1	103.7	<b>35.1</b>
D901313 MOUNTRAIL (+)	10	34.6	18.9	39.5	11.6	44.3	46.7	25.8	36.5	39.8	41.1	33.9	100.0	<b>33.9</b>
DILSE DILSE (+)	6				11.1	41.4	48.6	25.2		40.8	42.0	34.8	99.9	<b>33.8</b>
ALKABO ALKABO (+)	4							27.1	34.0	40.5	41.4	35.8	99.9	<b>33.8</b>
P1510696 RENVILLE	4	32.9	21.5	37.8	11.6							26.0	99.3	<b>33.6</b>
CANKYLE KYLE	7	31.4	20.5	36.7	12.5	49.9	46.0	30.2				32.5	99.0	<b>33.5</b>
D901442 LEBSOCK (+)	7	35.1	16.3	35.2	10.5	46.7	46.6			40.9		33.0	98.2	<b>33.3</b>
D91080 PLAZA (+)	7	33.8	19.1	38.0	12.4	41.8	50.3	29.6				32.1	98.0	<b>33.2</b>
D89135 MAIER (+)	7	34.3	15.7	39.0	10.0	43.5	48.5	29.9				31.5	96.2	<b>32.6</b>
NDMUNICH MUNICH (+)	6	36.0	17.0	38.7	10.6	40.4	44.9					31.3	95.9	<b>32.5</b>
P1478289 MONROE	6	35.0	16.9	33.7	7.1	43.4	47.8					30.6	94.0	<b>31.8</b>
PIERCE PIERCE (+)	7				11.6	40.6	41.9	25.3	32.8	38.8	36.7	32.5	92.6	<b>31.4</b>
97DU2 UTOPIA	4	35.4	12.1	37.6	11.1							24.1	92.0	<b>31.2</b>
CI17789 VIC	6	33.2	19.1	35.3	10.9	35.7	44.6					29.8	91.4	<b>31.0</b>
D87130 BEN (+)	6	33.8	15.8	35.9	8.4	41.3	41.2					29.4	90.2	<b>30.6</b>
MEANS (For Entries Listed)		34.8	18.3	37.7	10.9	43.0	46.6	28.7	37.1	41.8	41.6			<b>33.8</b>
April-July Precip. (in.)		6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.43	8.09	6.29	7.03		
Total Annual Precip. (in.)		10.27	8.83	13.29	11.54	14.43	11.87	10.29	12.42	12.21	12.46	11.76		
Soil NO <sub>3</sub> (lbs.) to SD at Planting		Pndg	Pndg	98	46	86	142	160	220	252	139	143		
SD (Sampling Depth in Inches)		Pndg	48	48	48	48	48	48	48	48	48	48		
Fertilizer Applied		(# N)	70	70	70	70	70	70	70	70	70	70		
		(# P <sub>2</sub> O <sub>5</sub> )	40	40	40	40	40	40	40	40	40	40		
		(# K <sub>2</sub> O)	25	25	25	25	25	25	25	25	25	25		

Long-term check variety is Mountrail.

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 Mountrail yield 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 of a given entry for years tested, y = average yield for Mountrail for the same years, and z = 10-Yr average yield for the check variety Mountrail.

**TABLE 11. Ten-Year Test Weight Summary on Selected Entries from Dryland Montana Spring Durum Nursery. Northern Agricultural Research Center. Havre, Montana. 2000-2009. (Exp# 9802-SW)**

2/ VARIETY or SELECTION	No. of YEARS TESTED	1/TEST WEIGHT (Pounds Per Bushel)											AVE. for YEARS TESTED	% of CHECK TEST WT 3/	10-Yr COMP. AVE. TEST WT 4/
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009				
D901442	LEBSOCK (+)	7	60.4	61.2	62.3	58.2	61.4	58.2			59.6		60.2	103.3	<b>59.8</b>
C17789	VIC	6	60.5	60.2	62.2	58.1	61.5	58.9					60.2	102.6	<b>59.4</b>
WPBLAKER	LAKER	4	60.2	62.4	62.3	58.3							60.8	102.5	<b>59.4</b>
PIERCE	PIERCE (+)	7				57.4	60.8	57.5	54.6	59.2	58.6	58.9	58.1	102.1	<b>59.1</b>
D87130	BEN (+)	6	60.0	60.6	62.3	57.5	60.8	57.9					59.9	102.0	<b>59.1</b>
CANKYLE	KYLE	7	59.1	61.7	62.9	57.7	59.7	58.8	55.2				59.3	102.0	<b>59.1</b>
DILSE	DILSE (+)	6				56.9	59.7	57.6	55.4		58.2	58.5	57.7	101.7	<b>58.9</b>
STRONGFIELD	STRONGFIELD (+)	4							57.3	57.6	57.2	58.8	57.7	101.6	<b>58.9</b>
ACAVONLE	ACAVONLEA (+)	6		61.2	62.8	56.8	60.2	56.5	56.2				58.9	101.5	<b>58.8</b>
DIVIDE	DIVIDE	4							55.5	58.7	57.8	58.4	57.6	101.4	<b>58.8</b>
ALKABO	ALKABO (+)	4							54.6	58.9	58.3	58.6	57.6	101.4	<b>58.7</b>
D89135	MAIER (+)	7	59.1	60.8	62.1	56.6	60.0	57.7	55.8				58.9	101.2	<b>58.7</b>
D91080	PLAZA (+)	7	59.3	61.5	62.0	57.1	59.7	56.3	56.1				58.8	101.2	<b>58.6</b>
97DU2	UTOPIA	4	59.2	60.2	61.6	57.9							59.7	100.7	<b>58.3</b>
P1510696	RENVILLE	4	59.4	60.3	61.7	57.4							59.7	100.7	<b>58.3</b>
GRENORA	GRENORA (+)	4							55.7	57.9	57.4	57.5	57.1	100.6	<b>58.3</b>
P478289	MONROE	6	59.9	59.2	61.0	56.7	59.8	56.6					58.9	100.3	<b>58.1</b>
D901313	MOUNTRAIL (+)	10	58.8	60.1	61.7	56.7	59.2	55.6	55.0	58.1	55.7	58.4	57.9	100.0	<b>57.9</b>
YU894-75	ALZADA (P+)	9		60.9	61.4	58.1	58.8	55.3	53.8	57.5	55.7	58.9	57.8	100.0	<b>57.9</b>
MT03012	MT03012	4							55.4	57.9	55.6	58.2	56.8	100.0	<b>57.9</b>
NDMUNICH	MUNICH (+)	6	59.1	59.6	60.4	55.4	59.4	56.8					58.5	99.6	<b>57.7</b>
P1574642	McNEAL (HRSW check)	6	57.0	58.8	60.2	55.2	60.3	56.7					58.0	98.9	<b>57.3</b>
MEANS (For Entries Listed)			59.4	60.6	61.8	57.2	60.1	57.2	55.4	58.2	57.4	58.5			<b>58.6</b>
April-July Precip. (in.)			6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.43	8.09	6.29	7.03		
Total Annual Precip. (in.)			10.27	8.83	13.29	11.54	14.43	11.87	10.29	12.42	12.21	12.46	11.76		
Soil NO <sub>3</sub> (lbs.) to SD at Planting			Pndg	Pndg	98	46	86	142	160	220	252	139	143		
SD (Sampling Depth in Inches)			Pndg	48	48	48	48	48	48	48	48	48	48		
Fertilizer Applied			(# N)	70	70	70	70	70	70	70	70	70	70		
			(# P <sub>2</sub> O <sub>5</sub> )	40	40	40	40	40	40	40	40	40	40		
			(# K <sub>2</sub> O)	25	25	25	25	25	25	25	25	25	25		

Long-term check variety is Mountrail.

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 Mountrail 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 test weight of a given entry for years tested, y = average test weight for Mountrail for the same years, and z = 10-Yr test weight for the check variety Mountrail.

**TABLE 12. Seven-Year Sawfly Rating Summary on Selected Entries from Dryland Montana Spring Durum Nursery. Northern Agricultural Research Center. Havre, Montana. 2003-2009. (Exp# 9802-SW)**

VARIETY or SELECTION	No. of YEARS TESTED	1/ SAWFLY RATING (% Cut and Lodged)							AVE. for YEARS TESTED	% of CHECK SAWFLY 2/	7-Yr COMP. AVE. SAWFLY 3/	
		2003	2004	2005	2006	2007	2008	2009				
NORMANNO	NORMANNO	3				0.0	2.3	3.7	2.0	11.8	1.1	
STRONGFIELD	STRONGFIELD (+)	4			0.7	1.7	10.0	5.3	4.4	33.3	3.0	
LEVANTE	LEVANTE	3				0.7	8.3	8.3	5.8	34.2	3.1	
D91080	PLAZA (+)	4	0.0	3.3	0.0	1.0			1.1	35.1	3.2	
MT03012	MT03012	4				1.0	1.0	6.7	5.1	38.4	3.5	
YU894-75	ALZADA (P+)	7	6.7	6.7	0.0	1.0	1.0	6.7	5.3	58.8	5.3	
ACAVONLE	ACAVONLEA (+)	4	3.3	3.3	0.0	1.0			1.9	62.1	5.6	
DIVIDE	DIVIDE	4				0.7	2.3	21.7	9.9	74.9	6.7	
D901313	MOUNTRAIL (+)	7	3.3	6.7	0.0	2.3	2.3	30.0	9.0	100.0	9.0	
ALKABO	ALKABO (+)	4				2.3	3.7	30.0	14.4	108.8	9.8	
GRENORA	GRENORA (+)	4				2.3	2.3	38.3	15.7	118.9	10.7	
D901442	LEBSOCK (+)	4	0.0	16.7	3.3			28.3	12.1	120.8	10.9	
DILSE	DILSE (+)	6	1.7	13.3	1.7	2.3		40.0	13.4	133.0	12.0	
PIERCE	PIERCE (+)	7	1.7	10.0	1.7	1.0	3.7	45.0	14.0	155.6	14.0	
CI17789	VIC	3	6.7	8.3	1.7				5.6	166.7	15.0	
D87130	BEN (+)	3	5.0	11.7	0.0				5.6	166.7	15.0	
NDMUNICH	MUNICH (+)	3	3.3	11.7	1.7				5.6	166.7	15.0	
D89135	MAIER (+)	4	3.3	11.7	3.3	2.3			5.2	167.5	15.1	
CANKYLE	KYLE	4	5.0	15.0	1.7	5.3			6.8	218.9	19.7	
P478289	MONROE	3	8.3	15.0	5.0				9.4	283.3	25.5	
P1574642	MCNEAL	3	1.7	28.3	5.0				11.7	350.0	31.5	
MEANS (For Entries Listed)			3.6	11.5	1.8	1.8	1.9	22.3			16.0	11.2
April-July Precip. (in.)			7.07	8.64	7.37	5.71	7.43	8.09	6.29	7.23		
Total Annual Precip. (in.)			11.54	14.43	11.87	10.29	12.42	12.21	12.46	12.17		
Soil NO <sub>3</sub> (lbs.) to SD at Planting			46	86	142	160	220	252	139	149		
SD (Sampling Depth in Inches)			48	48	48	48	48	48	48	48		
Fertilizer Applied		(# N)	70	70	70	70	70	70	70	70		
		(# P <sub>2</sub> O <sub>5</sub> )	40	40	40	40	40	40	40	40		
		(# K <sub>2</sub> O)	25	25	25	25	25	25	25	25		

Long-term check variety is Mountrail.

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 Mountrail saw fly rating for the same data years as those in which a given entry was tested.

4/ 7-Yr Comparable Average = (x/y) \* z where x = average saw fly rating of a given entry for years tested, y = average saw fly rating for Mountrail for the same years, and z = 7-Yr saw fly rating for the check variety Mountrail.

**TABLE 13. Intrastate Spring Barley Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions at Northern Agricultural Research Center. Havre, MT. 2009. (Exp# 09-2102-SB)**

ID	CULTIVAR or SELECTION	STAND %	1/		2/		TEST WT Lbs/Bu	PLUMP %	THIN %	3/ PROTEIN %
			HEAD DATE	PLNT HT Inches	YIELD Bu/Ac	MOIST %				
MT061035	Baronesse/MT981210	97.2	180.7	24.7	81.1	12.3	50.0	96.0	1.1	13.8
YU501385	CHAMPION	95.5	177.7	24.4	80.5	12.6	51.7	97.5	0.8	13.2
MT070159	MT970148/Klages	89.9	180.0	22.5	79.8	12.1	49.9	94.9	1.3	13.6
MT070086	MT970148/Coors37	95.1	181.7	20.3	78.7	12.3	50.4	95.5	1.4	12.8
MT070156	MT970148/Klages	94.8	180.3	23.0	78.7	12.3	49.4	94.0	1.6	13.0
MT070157	MT970148/Klages	94.4	179.7	23.4	77.7	11.9	50.3	97.1	0.8	13.2
MT061045	Baronesse/MT981210	96.9	181.7	23.6	77.5	12.3	50.5	94.9	1.4	13.5
MT061048	Baronesse/MT981210	95.5	180.7	22.6	77.3	12.0	49.8	94.9	1.4	13.5
MT061036	Baronesse/MT981210	95.8	182.3	22.3	77.0	12.3	50.4	96.2	1.0	14.6
MT020155	MT960225/H1851195	92.7	176.0	25.1	76.8	11.8	49.4	94.2	1.5	13.3
MT070111	MT010178/Harrington	94.4	180.3	25.3	75.7	12.8	51.2	96.5	1.0	13.3
MT061207	MT970229/LK232	95.5	178.0	25.5	75.4	11.9	50.0	98.4	0.4	13.0
MT061047	Baronesse/MT981210	98.3	181.0	22.1	75.3	12.5	50.0	93.4	1.8	13.8
MT061032	Baronesse/MT981210	97.2	181.7	24.2	73.8	12.1	49.4	93.8	1.6	13.9
MT020204	MTLB 32/H1851195	91.0	179.0	25.9	73.4	12.4	50.7	96.5	1.1	13.5
MT070175	MT970148/Coors37	96.5	181.0	25.9	73.3	12.4	50.0	97.0	0.7	11.9
PI568246	BARONESSE	94.1	180.7	22.8	72.8	12.4	50.1	96.3	0.8	14.2
MT030042	MT910189/MT960099	88.9	179.7	23.7	72.8	12.7	51.9	94.6	1.7	12.7
MT061248	MT990172/Coors37	95.1	177.7	22.9	72.6	12.5	50.9	98.8	0.4	13.1
MT061225	MT970229/LK232	91.3	180.0	23.7	71.9	12.7	50.9	98.1	0.4	13.9
MT010160	MT920041/Harrington	91.7	179.7	25.8	71.8	12.6	50.9	95.3	1.1	13.7
MT070193	MT970148/Haxby	95.5	176.3	22.3	71.1	11.7	45.7	83.4	4.8	10.4
SK 76333	HARRINGTON	89.2	182.0	24.3	71.0	12.3	49.8	93.5	1.8	13.7
MT960101	GERALDINE	89.2	184.0	22.7	70.8	12.6	50.4	94.8	1.5	14.3
PI655071	BENTLEY	92.0	179.0	28.0	70.7	12.3	49.9	97.4	0.8	13.3
MT910189	HOCKETT	90.6	179.7	23.6	70.4	12.7	51.2	96.1	1.3	13.3
MT070161	Haxby/Hector	95.2	180.0	22.9	70.3	12.4	50.3	96.6	1.1	13.2
2B965057	CONRAD	91.3	182.7	22.8	70.3	12.3	49.4	95.4	1.1	14.2
MT070148	MT990172/Metcalf	96.5	178.3	24.8	69.9	12.5	49.8	96.8	0.9	13.1
MT040209	MT960228/MT950186	92.4	181.7	24.4	69.9	12.4	50.6	95.2	1.1	13.3
MT020205	MTLB 32/H1851195	91.3	178.0	25.4	69.8	12.2	50.2	96.6	1.0	13.9
MT020162	MT960225/H1851195	93.1	181.0	25.8	69.2	12.3	50.4	91.8	2.5	14.2
MT070219	MT981210/MT970116	97.2	176.0	25.6	68.9	12.0	47.5	66.7	8.2	11.5
MT070192	MT970148/Haxby	94.5	176.0	23.9	68.9	12.0	45.0	84.1	3.9	10.4
TR232	METCALFE	89.2	180.3	24.8	68.7	12.2	50.7	97.2	0.8	14.1
MT070174	MT970148/Coors37	92.4	177.3	25.7	68.1	12.2	49.8	98.2	0.6	12.4
MT061201	MT970110/LK232	96.2	177.3	26.5	67.8	11.8	50.8	96.8	0.7	13.3
MT070158	MT970148/Klages	92.3	180.7	23.3	67.7	12.5	50.0	95.6	1.2	13.0
MT070087	MT970148/Coors37	95.8	177.7	22.1	67.4	12.7	52.0	91.9	1.6	13.8
MT010158	MT920041/Harrington	92.0	180.3	24.7	67.2	12.3	50.6	94.8	1.3	14.1
MT061169	MT960101/Coors37	93.1	181.3	24.3	66.1	12.4	51.2	94.0	1.8	14.1
MT061134	Kendal/Conlin	91.7	180.0	27.0	64.9	12.0	48.9	97.0	0.7	14.0
MT020167	MT960225/H3860224	94.5	182.3	26.5	64.9	12.4	51.1	98.2	0.4	13.5

**TABLE 13. Intrastate Spring Barley Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland  
Continued Fallow Conditions at Northern Agricultural Research Center. Havre, MT. 2009.  
(Exp# 09-2102-SB)**

ID	CULTIVAR or SELECTION	STAND %	1/	PLNT HT Inches	2/	MOIST %	TEST WT Lbs/Bu	PLUMP %	THIN %	3/
			HEAD DATE		YIELD Bu/Ac					PROTEIN %
MT061011	92Ab5180/LK690	93.4	176.0	21.2	64.8	11.2	45.2	84.2	3.2	10.9
MT061104	Harrington/MT970229	90.6	178.3	23.3	64.1	12.3	49.8	97.1	0.8	13.7
MT070062	MT010178/MT970116	95.1	182.3	24.6	62.8	12.5	50.3	95.9	0.9	13.9
MT061026	92Ab5180/LK690	90.3	176.0	22.2	62.4	11.6	45.1	76.2	5.9	11.1
MT050049	GS 1750/MT970116	92.4	179.3	26.3	62.3	12.6	51.8	97.6	0.6	13.5
GOLDENEY	GOLDENEYE	94.4	176.0	23.4	61.8	12.1	46.3	79.8	6.2	12.7
MT061025	92Ab5180/LK690	91.0	176.0	23.4	59.9	11.4	46.0	79.7	5.3	11.3
MT070125	MT981210/MT970116	93.1	180.0	24.7	57.9	12.1	51.0	96.5	1.0	13.2
MT040073	MT960045/Harrington	91.7	181.0	25.7	57.8	12.3	51.2	95.0	1.2	13.5
MT070136	MT010178/MT970116	90.6	181.7	26.0	57.6	12.6	51.0	97.0	0.9	14.2
MT050030	GS 1750/Bearpaw	93.4	180.7	26.4	54.3	12.5	49.6	96.8	0.9	13.1
MT030063	MT950155/Harrington	91.0	181.0	25.1	54.1	12.2	51.9	97.8	0.6	13.6
MT040226	MT970086/MT950186	90.6	179.7	28.2	53.3	12.2	52.5	95.4	0.9	13.1
6B952482	TRADITION	94.5	176.0	26.1	50.5	11.8	48.6	90.7	1.5	13.0
MT050062	Harrington/MT960225	92.7	180.3	26.3	48.6	12.5	51.2	96.5	1.0	12.9
MT950186	HAXBY	92.0	178.7	23.6	48.2	12.5	52.0	96.6	0.8	13.3
MT030079	MT950186/MT960225	94.8	180.0	25.1	47.1	12.2	51.3	96.1	0.8	12.6
MT070063	MT010178/MT970116	95.1	177.7	25.6	46.2	12.3	50.6	95.2	1.2	13.3
MT050048	GS 1750/MT970116	93.7	181.0	26.1	41.6	12.2	51.1	95.7	0.9	13.9
MT050201	MT970116/MT960222	94.8	178.3	24.7	39.2	12.3	50.5	95.9	0.9	13.3
MT970116	CRAFT	93.1	178.3	27.4	37.2	12.3	51.5	97.0	0.9	13.2
EXPERIMENTAL MEANS		93.4	179.5	24.5	66.3	12.3	50.0	94.0	1.5	13.2
LSD (0.05)		4.1	2.0	2.6	13.2	0.7	1.0	-	-	0.6
C.V.2: (S of MEAN / MEAN)*100		1.6	0.4	3.8	7.1	1.9	0.7	-	-	1.5

1/ No. of Days from January 1 (180 = June 29).

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# 09-2102-SB)							
Field	A-6-1		SaltHaz(MMHOS/cm) 6-24	0.43		Dry Surf Soil (in.) @ Plnt'g	1
Quarter	NW		S (ppm) 0-24	13		2" Soil Temp (°F) @ Plnt'g	63
Section	33		Zn (ppm) 0-6	0.32		4" Soil Temp (°F) @ Plnt'g	60
Tow nship	32N		Fe (ppm) 0-6	13.2		Fertilizer Formulation	Gran.Blend
Range	15E		Mn (ppm) 0-6	3.41		Fertilizer Placement	Bnd at Plntg
Latitude	N48 29.689'		Cu (ppm) 0-6	1.36		Fert. Rate (lbs/ac) N	70
Longitude	W109 47.947'		CEC 0-6	28.8		Fert. Rate (lbs/ac) P2O5	40
Soil Series	Scobey CL		Soil Texture 0-6	n/a		Fert. Rate (lbs/ac) K2O	25
pH 0-6	8.1		Soil Texture 6-24	n/a		Herbicide App. Date	6/16
Org.Matter (%) 0-6	1.4		Soil Texture 24-36	n/a		Herbicide Product	Bronate Adv
N (lbs/ac) 0-6	10		Soil Texture 36-48	n/a		Herbicide Rate (/ac)	24 oz
N (lbs/ac) 6-24	42		Init PAW (in.) 0-6"	1.0		Precip (in.) Plnt'g-Harvest	6.79
N (lbs/ac) 24-36	20		Init PAW (in.) 6-24"	4.1		Precip (>.1) Plnt'g-Harvest	4.65
N (lbs/ac) 36-48	16		Init PAW (in.) 24-36"	2.3		Harvest Date	8/20
N (lbs/ac) 0-48	88		Init PAW (in.) 36-48"	2.2		Rooting Depth (in.)	33"
P (ppm) Olsen 0-6	19		Init PAW (in.) 0-48"	9.6		Post PAW (in.) 0-6"	0.6
K (ppm) 0-6	224		Cropping System	NT-ChmFlw		Post PAW (in.) 6-24"	2.1
Ca (ppm) 0-6	4636		Previous Crop	SW		Post PAW (in.) 24-36"	1.5
Mg (ppm) 0-6	593		Planting Date	4/22		Post PAW (in.) 36-48"	2.1
Na (ppm) 0-6	18		Planting Depth (in.)	1.5		Post PAW (in.) 0-48"	6.3
SaltHaz (MMHOS/cm) 0-6	0.45		Moist Soil Depth @ Plnt'g	48+		Precip (>.1) Hvst-Post	0

**TABLE 14. Nine-Year Yield Summary on Selected Entries from Dryland Intrastate Spring Barley Nursery. Northern Agricultural Research Center. Havre, Montana. 2000-2009. (EXP# 2102-SB)**

2/ VARIETY or SELECTION	No. of YEARS TESTED	1/ YIELD (Bushels Per Acre)										AVE. for YEARS TESTED	% of CHECK YIELD 4/	9-YR COMP. AVE. YIELD 5/
		2000	2001	2002	2003	2004 3/	2005	2006	2007	2008	2009			
BZ596117 BOULDER (P+)	6		32.9	59.3			91.0	61.8	70.6	76.1		65.3	119.3	<b>68.7</b>
YU501385 CHAMPION	5						94.4	60.7	64.4	85.5	80.5	77.1	109.5	<b>63.0</b>
MT010158 MT920041/Harrington	6				19.3		80.7	63.2	62.7	75.0	67.2	61.4	100.5	<b>57.9</b>
BZ594-19 WPB XENA (P+)	4		29.0		10.7		73.6	65.4				44.7	100.1	<b>57.7</b>
PI568246 BARONESSE (P+)	9	62.5	32.2	57.2	14.2		82.4	49.7	66.8	80.5	72.8	57.6	100.0	<b>57.6</b>
MT010160 MT920041/Harrington	6				15.1		80.0	60.8	67.0	70.2	71.8	60.8	99.6	<b>57.3</b>
MT960228 ESLICK	8	63.5	28.1	59.7	11.2		77.2	65.5	68.8	69.2		55.4	99.5	<b>57.3</b>
MT020204 MTLB 32/H1851195	5						87.2	54.7	55.0	79.9	73.4	70.0	99.4	<b>57.3</b>
MT030063 MT950155/Harrington	5						100.7	50.6	72.1	69.0	54.1	69.3	98.4	<b>56.7</b>
PI491534 GALLATIN	5	65.5	31.6	52.9	11.3		82.0					48.7	97.9	<b>56.4</b>
SK76333 HARRINGTON	8	53.5	31.2	54.5	12.8		71.8	63.6	64.6		71.0	52.9	96.6	<b>55.6</b>
6B952482 TRADITION (P+)	8			54.5	8.8		81.3	66.7	71.5	73.0	50.5	58.1	95.9	<b>55.3</b>
MT030079 MT950186/MT960225	5						86.1	61.2	74.5	68.8	47.1	67.5	95.9	<b>55.2</b>
MT950186 HAXBY	9	66.0	28.9	54.0	12.0		83.7	57.3	69.9	75.8	48.2	55.1	95.7	<b>55.1</b>
MT910189 HOCKETT (++)	9	65.8	29.5	51.9	11.0		78.5	51.7	61.7	73.8	70.4	54.9	95.4	<b>54.9</b>
PI610264 VALIER (++)	5	62.4	30.2	54.3	11.6		75.3					46.8	94.1	<b>54.2</b>
2B965057 CONRAD (+)	5						78.9	54.7	57.6	67.4	70.3	65.8	93.4	<b>53.8</b>
MT960101 GERALDINE	9	56.8	26.8	57.6	13.7		76.5	53.9	58.9	68.4	70.8	53.7	93.3	<b>53.7</b>
TR232 METCALFE	3							51.4	53.5		68.7	57.9	91.7	<b>33.3</b>
MT970116 CRAFT	9	55.5	29.4	53.1	12.1		81.4	61.2	64.3	67.0	37.2	51.2	89.0	<b>51.2</b>
2B914947 MERIT (P+)	5	54.9	28.5	49.0	12.1		61.6					41.2	83.0	<b>47.8</b>
ND13299 CONLON (+)	4		30.1	54.6	10.8					55.8		37.8	81.2	<b>46.8</b>
6B932978 LEGACY (P+)	5	53.8	21.9	51.8	7.9		61.9					39.5	79.4	<b>45.7</b>
<b>MEANS (For Entries Listed)</b>		<b>60.0</b>	<b>29.3</b>	<b>54.6</b>	<b>12.2</b>		<b>80.3</b>	<b>58.5</b>	<b>64.4</b>	<b>73.3</b>	<b>63.6</b>			<b>54.5</b>
April-July Precip. (in.)		6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.43	8.09	6.29	7.03		
Total Annual Precip. (in.)		10.27	8.83	13.29	11.54	14.43	11.87	10.29	12.42	12.21	12.46	11.76		
Soil NO <sub>3</sub> (lbs.) to SD at Planting		Pndg	Pndg	Pndg	102	120	184	352	271	157	88	182		
SD (Sampling Depth in Inches)		Pndg	Pndg	48	48	48	48	48	48	48	48	48		
Fertilizer Applied	(# N)	70	70	70	70	70	70	70	70	70	70	70		
	(# P <sub>2</sub> O <sub>5</sub> )	40	40	40	40	40	40	40	40	40	40	40		
	(# K <sub>2</sub> O)	25	25	25	25	25	25	25	25	25	25	25		

Long-term check variety is Baronessse.

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 malting potential, 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 Baronessse yield for the same data years as those in which a given entry was tested.

5/ 9-Yr Comparable Average = (x/y) \* z w here x = average yield of a given entry for years tested, y = average yield for Baronessse for the same years, and z = 9-Yr average yield for the check variety Baronessse.

**TABLE 15. Nine-Year Test Weight Summary on Selected Entries from Dryland Intrastate Spring Barley Nursery. Northern Agricultural Research Center. Havre, Montana. 2000-2009. (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/	9-YR COMP. AVE TEST WT 5/
		2000	2001	2002	2003	2004 3/	2005	2006	2007	2008	2009			
YU501385 CHAMPION	4						50.9	48.4	50.3	52.7	51.7	50.8	106.3	<b>50.7</b>
MT950186 HAXBY	9	51.9	49.4	50.4	49.1		50.9	48.7	50.7	52.9	52.0	50.7	106.2	<b>50.7</b>
MT030079 MT950186/MT960225	5						49.7	48.0	50.9	52.7	51.3	50.5	105.7	<b>50.4</b>
MT030063 MT950155/Harrington	5						51.0	47.9	49.2	52.2	51.9	50.4	105.5	<b>50.4</b>
MT970116 CRAFT	9	50.8	49.7	50.5	48.8		50.7	48.8	50.0	51.5	51.5	50.2	105.3	<b>50.2</b>
BZ596117 BOULDER (P+)	6		47.7	49.2			50.8	48.7	49.3	51.9		49.6	104.6	<b>49.9</b>
MT010158 MT920041/Harrington	6				48.9		50.9	46.9	49.6	50.7	50.6	49.6	104.4	<b>49.8</b>
MT910189 HOCKETT (++)	9	50.2	48.2	49.7	49.3		48.0	47.5	49.9	52.0	51.2	49.6	103.8	<b>49.6</b>
MT020204 MTLB 32/H1851195	5						50.5	46.1	49.0	51.4	50.7	49.5	103.7	<b>49.5</b>
PI491534 GALLATIN	5	49.0	48.1	48.5	47.7		48.6					48.4	102.4	<b>48.9</b>
MT010160 MT920041/Harrington	6				47.3		49.1	45.5	47.9	50.6	50.9	48.6	102.2	<b>48.8</b>
PI610264 VALIER (++)	5	49.0	48.5	49.8	46.8		46.9					48.2	101.9	<b>48.7</b>
MT960228 ESLICK	8	49.3	47.7	49.6	46.3		47.1	46.1	48.9	50.1		48.1	101.5	<b>48.4</b>
ND13299 CONLON (+)	4		48.1	48.5	49.7				48.2			48.6	101.5	<b>48.4</b>
TR232 METCALFE	3							45.3	48.2		50.7	48.1	100.6	<b>48.0</b>
BZ594-19 WPB XENA (P+)	4		48.4		45.8		45.6	45.1				46.2	100.3	<b>47.9</b>
MT960101 GERALDINE	9	47.3	48.6	49.1	47.1		46.1	45.0	47.3	49.9	50.4	47.9	100.3	<b>47.9</b>
2B965057 CONRAD (+)	5						47.1	45.7	47.4	49.4	49.4	47.8	100.0	<b>47.7</b>
PI568246 BARONESSE (P+)	9	47.6	48.1	48.9	46.0		45.8	44.5	48.7	49.9	50.1	47.7	100.0	<b>47.7</b>
6B952482 TRADITION (P+)	7			46.8	45.1		46.7	46.4	47.0	49.2	48.6	47.1	98.8	<b>47.2</b>
SK76333 HARRINGTON	8	46.8	46.2	48.4	45.5		44.9	44.6	47.2		49.8	46.7	98.4	<b>47.0</b>
2B914947 MERIT (P+)	5	46.8	46.6	47.3	44.4		41.4					45.3	95.8	<b>45.7</b>
6B932978 LEGACY (P+)	5	43.4	44.7	45.2	45.9		43.3					44.5	94.1	<b>44.9</b>
<b>MEANS (For Entries Listed)</b>		<b>48.4</b>	<b>47.9</b>	<b>48.7</b>	<b>47.1</b>		<b>47.9</b>	<b>46.6</b>	<b>48.9</b>	<b>51.1</b>	<b>50.7</b>			<b>48.6</b>
April-July Precip. (in.)		6.01	4.81	8.87	7.07	8.64	7.37	5.71	7.43	8.09	6.29	7.03		
Total Annual Precip. (in.)		10.27	8.83	13.29	11.54	14.43	11.87	10.29	12.42	12.21	12.46	11.76		
Soil NO <sub>3</sub> (lbs.) to SD at Planting		Pndg	Pndg	Pndg	102	120	184	352	271	157	88	182		
SD (Sampling Depth in Inches)		Pndg	Pndg	48	48	48	48	48	48	48	48	48		
Fertilizer Applied	(# N)	70	70	70	70	70	70	70	70	70	70	70		
	(# P <sub>2</sub> O <sub>5</sub> )	40	40	40	40	40	40	40	40	40	40	40		
	(# K <sub>2</sub> O)	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 malting potential, 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 Baronesse 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 test weight of a given entry for years tested, y = average test weight for Baronesse for the same years, and z = 9-Yr average test weight for the check variety Baronesse.



**TABLE 13. Montana Safflower Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions at Northern Agricultural Research Center. Havre, Montana. 2009. (Exp# 09-7702-SA)**

ENTRY	CULTIVAR or SELECTION	STAND %	1/ FLWR PLNT HT		YIELD Lbs/Ac	MOIST %	TEST WT Lbs/Bu	OIL %		
			DATE	Inches				0%Mois.	8%Mois.	8%Mois.
27	HYBRID 1601	88.9	207.0	24.3	2839.0	9.9	39.8	37.7	34.7	983.5
25	HYBRID 492	88.9	206.3	22.1	2636.7	9.3	44.1	32.4	29.8	785.8
26	HYBRID 9049	85.6	207.7	22.5	2606.5	9.4	43.2	31.7	29.1	759.0
36	CARDINAL	90.3	210.7	23.7	2461.7	9.5	43.8	37.8	34.8	856.1
24	07B 6590	88.4	209.3	19.2	2388.7	9.9	40.0	40.6	37.3	891.5
16	06B 3119	88.7	208.3	20.9	2362.8	10.2	39.2	36.3	33.4	789.1
31	MT 2004	88.0	206.0	19.3	2239.1	9.4	41.1	38.2	35.2	787.6
5	05B 3231	95.8	206.0	19.5	2225.8	9.7	38.8	42.2	38.8	864.5
13	05B 6866	92.8	208.0	18.8	2204.9	9.6	39.2	40.6	37.3	823.3
7	05B 6053	91.0	207.7	20.1	2194.0	10.0	38.9	41.7	38.4	844.1
6	05B 3401	93.5	207.7	20.9	2152.8	10.0	37.0	41.4	38.1	820.8
11	05B 6523	93.8	208.7	20.0	2147.4	9.6	41.9	38.9	35.8	769.5
10	05B 6227	94.9	207.7	20.4	2144.6	10.0	36.6	41.5	38.2	818.1
19	06B 3254	94.2	210.7	22.5	2120.4	9.6	40.6	36.4	33.5	710.9
14	06B 3015	94.7	208.3	19.0	2097.1	10.1	36.2	40.8	37.6	788.6
22	07B 6526	94.4	208.7	21.1	2095.1	9.8	38.3	46.0	42.4	887.5
4	04B 6027	91.7	208.0	19.6	2095.0	10.2	35.9	43.0	39.5	827.2
35	FINCH	92.6	207.3	21.5	2086.4	9.8	43.1	38.0	34.9	729.0
28	MONDAK	91.5	208.0	22.1	2078.4	9.5	40.5	37.3	34.4	717.0
34	MORLIN	90.5	212.3	21.4	2077.2	10.2	38.7	38.4	35.3	733.8
2	02B 2108	91.0	208.3	22.0	2075.3	9.6	41.4	36.8	33.8	703.4
30	MT 2003	93.3	208.7	20.1	2042.1	9.8	40.5	37.5	34.5	703.5
1	01B 7113	96.7	208.0	20.0	2036.3	9.8	35.3	40.5	37.3	758.5
21	07B 6501	92.1	208.7	19.3	2035.6	9.5	38.4	39.4	36.3	739.1
23	07B 6567	91.0	207.7	19.1	2031.5	10.0	34.5	43.9	40.4	820.7
8	05B 6081	94.0	208.0	19.6	2027.3	9.9	35.6	39.4	36.3	735.6
15	06B 3091	88.7	207.0	19.3	2026.5	9.9	34.8	46.4	42.7	864.8
12	05B 6570	91.2	208.7	21.2	2025.0	9.8	37.9	46.5	42.8	866.3
33	CENTENNIAL	88.9	209.3	22.4	2014.4	9.8	41.6	43.4	39.9	804.0
29	MT 2000	92.4	207.3	18.8	2002.7	9.5	37.9	40.5	37.3	746.7
20	06B 3313	93.3	208.0	23.1	1960.3	9.3	42.0	39.8	36.6	718.4
9	05B 6162	93.5	206.7	19.7	1932.8	9.4	37.9	44.6	41.0	793.0
3	02B 6655	92.6	208.0	19.7	1906.8	10.1	34.9	43.1	39.7	757.0
17	06B 3159	94.2	207.3	19.0	1856.6	9.8	35.8	45.3	41.7	772.7
18	06B 3247	91.5	210.0	19.2	1712.0	10.2	34.9	41.8	38.5	658.4
32	NUTRASAFF	88.9	208.0	22.0	1588.8	9.5	37.7	49.8	45.8	727.3
EXPERIMENTAL MEANS		91.8	208.2	20.7	2125.8	9.8	38.8	40.5	37.3	787.7
LSD (0.05)		5.1	1.1	2.0	311.8	0.3	1.6	1.4	1.3	117.3
C.V.2: (S of MEAN / MEAN)*100		2.0	0.2	3.5	5.2	1.1	1.5	1.3	1.3	5.3

1/ No. Days from January 1 (208 = July 27)

Site Resource & Management Data: (Exp# 09-7702-SA)							
Field	An-4-5		SaltHaz(MMHOS/cm) 6-24	2.46		Dry Surf Soil (in.) @ Plnt'g	0.25
Quarter	NW		S (ppm) 0-24	9		2" Soil Temp (°F) @ Plnt'g	59
Section	33		Zn (ppm) 0-6	0.44		4" Soil Temp (°F) @ Plnt'g	52
Tow nship	32N		Fe (ppm) 0-6	9.7		Fertilizer Formulation	Gran Brod
Range	15E		Mn (ppm) 0-6	4.13		Fertilizer Placement	Bnd at Plntg
Latitude	N49 29.441'		Cu (ppm) 0-6	1.4		Fert. Rate (lbs/ac) N	0
Longitude	W109 47.870'		CEC 0-6	32.7		Fert. Rate (lbs/ac) P2O5	45
Soil Series	Hillon CLm		Soil Texture 0-6	n/a		Fert. Rate (lbs/ac) K2O	0
pH 0-6	8.2		Soil Texture 6-24	n/a		Herbicide App. Date	n/a
Org.Matter (%) 0-6	1.5		Soil Texture 24-36	n/a		Herbicide Product	n/a
N (lbs/ac) 0-6	12		Soil Texture 36-48	n/a		Herbicide Rate (/ac)	n/a
N (lbs/ac) 6-24	99		Init PAW (in.) 0-6"	1.3		Precip (in.) Plnt'g-Harvest	6.20
N (lbs/ac) 24-36	66		Init PAW (in.) 6-24"	4.2		Precip (>.1) Plnt'g-Harvest	5.53
N (lbs/ac) 36-48	42		Init PAW (in.) 24-36"	2.5		Harvest Date	10/9
N (lbs/ac) 0-48	219		Init PAW (in.) 36-48"	2.3		Rooting Depth (in.)	33"
P (ppm) Olsen 0-6	14		Init PAW (in.) 0-48"	10.3		Post PAW (in.) 0-6"	0.77
K (ppm) 0-6	220		Cropping System	CT-MechFlw		Post PAW (in.) 6-24"	2.79
Ca (ppm)	5600		Previous Crop	SB		Post PAW (in.) 24-36"	2.39
Mg (ppm) 0-6	483		Planting Date	5/9		Post PAW (in.) 36-48"	2.85
Na (ppm) 0-6	27		Planting Depth (in.)	1.5		Post PAW (in.) 0-48"	8.80
SaltHaz (MMHOS/cm) 0-6	0.49		Moist Soil Depth @ Plnt'g	48+		Precip (>.1) Hvst-Post	0.15

**TABLE 17. Nine-Year Yield Summary on Selected Entries from Dryland Safflower Nursery. Northern Agricultural Research Center. Havre, Montana. 2000-2009. (Exp# 7702-SA)**

1/ VARIETY or SELECTION		No. of YEARS TESTED	YIELD (Lbs Per Acre)									AVE. for YEARS TESTED	% of CHECK YIELD 3/	9-Yr COMP. AVE. YIELD 4/	
			2000	2001 2/	2002	2003	2004	2005	2006	2007	2008				2009
HYBRID 9049	HYBRID 9049	5						1509.9	1433.7	1988.3	2263.5	2606.5	1960.4	128.0	<b>1770.8</b>
CARDINAL	CARDINAL	3								1384.3	1774.1	2461.7	1873.4	107.7	<b>1489.7</b>
WILL	MONTOLA 2004 (++)	8			1617.1	448.8	1257.3	1392.6	1158.3	1669.3	1967.1	2239.1	1468.7	106.6	<b>1474.1</b>
95B7446	99MTDSVT 218/108	7	1496.5		1950.3	692.8	1229.7	1222.9	1000.4				1265.4	105.0	<b>1452.5</b>
02B 6081	02B 6081	5					1175.4	1344.9	968.1	1403.0	2201.2		1418.5	104.7	<b>1448.5</b>
97B1744	99DLI2 319/107	6	1941.9		1785.7	451.7	1298.9	1150.4	833.9				1243.8	103.2	<b>1427.6</b>
WILL 95FI	FINCH	9	1516.3		1383.7	564.1	1276.5	1214.2	1082.4	1583.2	1977.3	2086.4	1409.3	101.9	<b>1409.3</b>
01B 7113	01B 7113	5					1227.9	982.3	1354.7	2094.3	2036.3	1539.1	100.5	<b>1390.2</b>	
WILL	CENTENNIAL (++)	9	1423.6		1744.7	493.5	1130.6	1181.1	1257.3	1521.9	1682.2	2014.4	1383.3	100.0	<b>1383.3</b>
WILL	MONTOLA 2000 (++)	9	1163.5		1787.3	479.2	1113.7	1160.5	1018.2	1540.0	2080.1	2002.7	1371.7	99.2	<b>1371.7</b>
011-2180	MORLIN (++)	9	1313.2		1839.9	495.0	1359.6	1194.4	1013.9	1311.1	1723.4	2077.2	1369.7	99.0	<b>1369.7</b>
95B3538	99MTDSVT 104	7	1588.2		1832.6	480.4	1113.7	1215.6	886.4				1186.2	98.4	<b>1361.5</b>
02B 6655	02B 6655	5						1155.0	826.6	1529.7	2018.7	1906.8	1487.4	97.1	<b>1343.5</b>
WILL	S-541	5			1848.6	413.9	1202.1	1061.7	1068.3				1118.9	96.3	<b>1332.6</b>
97B1286	99MTDSVT 311/120	7	1036.8		1791.8	447.3	1326.0	1261.8	962.8				1137.8	94.4	<b>1305.9</b>
Will WOMA2003	MONTOLA 2003 (++)	9	758.9		1715.2	468.2	1110.2	1226.1	882.8	1301.2	1724.4	2042.1	1247.7	90.2	<b>1247.7</b>
91B3842	NUTRASAF (++)	9	833.1		1585.8	211.2	1048.9	1036.2	823.9	1210.3	1156.5	1588.8	1055.0	76.3	<b>1055.0</b>
99MTDSVT 224/	ERLIN	7	759.0		1262.5	360.4	1376.7	828.3	817.4				900.7	74.7	<b>1033.8</b>
MEANS (For Entries Listed)			1257.4		1703.5	462.0	1215.7	1199.0	1001.0	1483.1	1888.6	2096.5			<b>1370.4</b>
April-July Precip. (in.)			6.01		8.87	7.07	8.64	7.37	5.71	7.43	8.09	6.29	7.28		
Total Annual Precip. (in.)			10.27		13.29	11.54	14.43	11.90	10.29	12.42	12.21	12.46	12.09		
Soil NO <sub>3</sub> (lbs.) to SD at Planting			n/a		n/a	78	214	708	157	154	665	219	314		
SD (Sampling Depth in Inches)			Pndg		48	48	48	48	48	48	48	48	48		
Fertilizer Applied															
			(# N)		70	70	70	70	50	0	0	0	37		
			(# P <sub>2</sub> O <sub>5</sub> )		40	40	40	40	20	40	45	40	45	39	
			(# K <sub>2</sub> O)		25	25	25	25	10	0	0	0	12		

Long-term check variety is Centennial.

1/ ++ = PVP Title 5 or Title 5 Pending.

2/ 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.

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

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

**TABLE 18. Nine-Year Percent Oil Summary on Selected Entries from Dryland Safflower Nursery. Northern Agricultural Research Center. Havre, Montana. 2000-2009. (Exp# 7702-SA)**

1/ VARIETY or SELECTION	No. of YEARS TESTED	Oil (%) @ 8% Seed Moisture										AVE. for YEARS TESTED	% of CHECK Oil 3/	9-Yr COMP. AVE. Oil 4/
		2000	2001 2/	2002	2003	2004	2005	2006	2007	2008	2009			
91B3842 NUTRASAF (++)	9	41.6		39.4	46.2	44.9	43.8	43.2	48.5	44.6	45.8	44.2	109.5	<b>44.2</b>
WILL S-541	5			37.0	41.2	40.5	39.5	39.7				39.6	100.6	<b>40.6</b>
WILL CENTENNIAL (++)	9	41.3		37.2	40.1	40.1	39.5	39.9	43.9	41.7	39.9	40.4	100.0	<b>40.4</b>
02B 6655 02B 6655	5						39.9	37.8	42.1	39.7	39.7	39.8	97.2	<b>39.3</b>
01B 7113 01B 7113	5						40.6	38.4	41.1	37.7	37.3	39.0	95.2	<b>38.5</b>
99MTDSVT 224/ ERLIN	6	39.7		34.7	36.4	37.7	37.3	36.2				37.0	93.2	<b>37.7</b>
97B1286 99MTDSVT 311/120	6	39.5		34.7	36.0	37.6	36.5	37.0				36.9	92.9	<b>37.5</b>
WILL MONTOLA 2000 (++)	9	37.5		32.7	38.7	37.3	37.9	35.7	38.6	38.2	37.3	37.1	91.8	<b>37.1</b>
011-2180 MORLIN (++)	9	38.9		33.8	37.3	37.1	36.4	36.9	39.3	37.2	35.3	36.9	91.4	<b>36.9</b>
02B 6081 02B 6081	5					35.7	36.6	35.0	37.7	36.5		36.3	88.5	<b>35.8</b>
Will WOMA2003 MONTOLA 2003 (++)	9	36.7		32.4	37.8	34.9	36.2	34.8	36.8	36.5	34.5	35.6	88.2	<b>35.6</b>
95B7446 99MTDSVT 218/108	6	35.5		31.7	37.8	34.8	34.8	33.9				34.8	87.6	<b>35.4</b>
WILL MONTOLA 2004 (++)	8			32.0	37.2	35.5	35.5	33.9	35.8	35.3	35.2	35.0	87.0	<b>35.1</b>
WILL 95FI FINCH	9	37.5		32.4	34.5	34.5	35.0	35.5	36.5	34.5	34.9	35.0	86.7	<b>35.0</b>
95B3538 99MTDSVT 104	6	36.5		32.7	35.2	34.8	33.8	32.2				34.2	86.2	<b>34.8</b>
97B1744 99DLI2 319/107	6	36.3		32.3	34.6	34.9	33.8	31.8				34.0	85.6	<b>34.6</b>
CARDINAL CARDINAL	3								36.1	33.7	34.8	34.9	83.3	<b>33.7</b>
HYBRID 9049 HYBRID 9049	5						31.9	31.0	32.1	34.3	29.1	31.7	77.3	<b>31.2</b>
MEANS (For Entries Listed)		38.3		34.1	37.9	37.2	37.0	36.1	39.0	37.5	36.7			<b>36.9</b>
April-July Precip. (in.)		6.01		8.87	7.07	8.64	7.37	5.71	7.43	8.09	6.29	7.28		
Total Annual Precip. (in.)		10.27		13.29	11.54	14.43	11.90	10.29	12.42	12.21	12.46	12.09		
Soil NO <sub>3</sub> (lbs.) to SD at Planting		n/a		n/a	78	214	708	157	154	665	219	314		
SD (Sampling Depth in Inches)		Pndg		48	48	48	48	48	48	48	48	48		
Fertilizer Applied	(# N)	70		70	70	70	50	0	0	0	0	37		
	(# P <sub>2</sub> O <sub>5</sub> )	40		40	40	40	20	40	45	40	45	39		
	(# K <sub>2</sub> O)	25		25	25	25	10	0	0	0	0	12		

Long-term check variety is Centennial.

1/ ++ = PVP Title 5 or Title 5 Pending.

2/ 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.

3/ 9-Yr Comparable Average = (x/y) \* z where x = average oil% of a given entry for years tested, y = average yield for Centennial for the same years, and z = 9-Yr average oil% for the check variety Centennial.

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