TITLE: Winter Wheat, Spring Wheat, Spring Barley and Safflower Variety Performance Evaluations Under Chemical Fallow Conditions On-Station at Northern Agricultural Research Center, Havre, Montana. 2003-2012.

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Content:

This report is intended to serve as a popularized 2012 summary of "primary" on-going cereal and oilseed crop variety investigations traditionally conducted on-station by Agronomy at Northern Agricultural Research Center. These data represent approximately 16 percent of NARC-Agronomy's total research project effort on-station at Havre. The remaining 84 percent of the research not reported here includes cultivar and product evaluation associated with larger nurseries featuring early generation or other unnamed experimental materials not of general interest to the public; and/or experimental seed treatment, fungicide and insecticide evaluations. 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 97 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 2012. 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.

2012 Data:

It should be noted that 2012 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 2012 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

LIST OF TABLES

Summary of climatic data by months for the 2011-2012 crop year (September to August) and averages for the period 1916-2012 at the Northern Agricultural Research Center. Havre, Montana.

Month Year	Sep 2011	Oct 2011	Nov 2011	Dec 2011	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Crop Year
Precipitation (inches)													**Total**
Current Year	0.39	0.40	0.31	0.07	0.18	0.14	0.60	2.18	2.98	1.43	0.74	0.40	9.82
97-Year Average (1916 to 2011-12)	1.15	0.65	0.44	0.45	0.44	0.32	0.54	1.00	1.82	2.55	1.42	1.18	11.93
Mean Temperature (^{o}F)													**Average**
Current Year	59.9	47.1	30.9	29.4	22.4	25.3	39.0	46.6	52.0	62.3	72.7	68.7	46.4
97-Year Average (1916 to 2011-12)	56.2	45.7	30.1	19.5	15.5	19.9	30.0	43.6	54.0	61.8	69.2	67.3	42.7

Last killing frost in spring*

2012 _____ **May 28th (32˚)**
Ave. 1916-2012 _____ **May 14th**

First killing frost in fall*

2012 _____ **October 1st (32˚)**
Ave. 1916-2012 _____ **September 20th**

Frost free period

2012 _____ **125 days**
Ave. 1916-2012 _____ **129 days**

Growing degree days (base 50)

May 1-Oct 31, 2012 _____ **2360.5**
Ave. 1951-2012 _____ **2374.3**

Maximum summer temperature _____ **98˚ July 10th, 24th, 25th and August 7th**
Minimum winter temperature _____ **-22˚ January 18th**

*In this summary 32^{o} is considered a killing frost.

2012
INDIVIDUAL CROP EXPERIMENT IDENTIFICATION & DESCRIPTION RECORD
Agronomy and Livestock
Northern Agricultural Research Center
Havre, Montana

Experiment No.	*	Description	Crop	Ents	Reps	Plots	Loc-Field	Legal Desc	Leader	Sponsor	Cooperator
					WINTER WHEAT (WW) INVESTIGATIONS						
ON-STATION											
12-3502-WW		Intrastate Cultivar Nursery	WW	49	3	147	A-3-4	33 32N 15E	Bruckner	MAES-MWBC	Lamb
12-1402-WW		Advanced Cultivar Nursery	WW	36	3	108	A-3-4	33 32N 15E	Bruckner	MAES-MWBC	Lamb
12-SR02-WW	v	Single-Row Line Eval Nursery	WW	1000	1	1000	A-3-3	33 32N 15E	Bruckner	MAES-MWBC	Lamb
12-5802-WW		Sawfly Line Evaluation Nursery	WW	49	2	98	A-3-4	33 32N 15E	Bruckner	MAES-MWBC	Lamb
12-3RSP-WW		3-Row Segregating Populations	WW	110	1	110	A-3-4	33 32N 15E	Bruckner	MAES-MWBC	Lamb
12-WQDS-WW		Winter Wheat Quality Drill Strips	WW	6	1	6	A-3-4	33 32N 15E	Bruckner	MAES-MWBC	Lamb
Sub-Totals:			6	1250		1469	29.84%	of Total Plot Inventory			
OFF-STATION											
12-3851-WW		Off-Station Cultivar Eval Nursery	WW	24	3	72	Turner	13 36N 25E	Lamb	MWBC-MAES	Cederberg Farm
12-3853-WW		Off-Station Cultivar Eval Nursery	WW	24	3	72	Loma	20 27N 10E	Lamb	MWBC-MAES	McKeever Farm
12-5853-WW		Sawfly Line Evaluation Nursery	WW	49	2	98	Loma	20 27N 10E	Lamb	MWBC-MAES	McKeever Farm
Sub-Totals:			3	97		242	4.92%	of Total Plot Inventory			
					SPRING WHEAT & DURUM (SW & DUR) INVESTIGATIONS						
ON-STATION											
12-3102-SW		Advanced Yield Nursery	SW	64	3	192	A-3-2	33 32N 15E	Talbert	MAES-MWBC	Lamb
12-9802-SW		Montana Durum Cultivar Nursery	DUR	20	3	60	A-3-2	33 32N 15E	Eckhoff	MAES-MWBC	Lamb
12-3302-SW		Preliminary Yield Nursery	SW	81	3	243	A-3-2	33 32N 15E	Talbert	MAES-MWBC	Lamb
Sub-Totals:			3	165		495	10.05%	of Total Plot Inventory			
OFF-STATION											
12-9951-SW		Off-Station Cultivar Eval Nursery	SW	21	3	63	Turner	13 36N 25E	Lamb	MWBC-MAES	Cederberg Farm
12-9955-SW		Off-Station Cultivar Eval Nursery	SW	21	3	63	Loring	24 35N 29E	Lamb	MWBC-MAES	Flansaas/Lumsden
12-9851-SW		Off-Station Cultivar Eval Nursery	DUR	16	3	48	Turner	13 36N 25E	Lamb	MWBC-MAES	Cederberg Farm
12-9855-SW		Off-Station Cultivar Eval Nursery	DUR	16	3	48	Loring	24 35N 29E	Lamb	MWBC-MAES	Flansaas/Lumsden
Sub-Totals:			4	74		222	4.51%	of Total Plot Inventory			

SPRING BARLEY (SB) INVESTIGATIONS

ON-STATION

12-2102-SB	Intrastate Cultivar Eval Nursery	SB	64	3	192	A-3-1	33 32N 15E	Blake	MAES-MWBC	Lamb
12-3102-SB	Early Yield Evaluation Nursery	SB	64	3	192	A-3-1	33 32N 15E	Blake	MAES-MWBC	Lamb
Sub-Totals:		2	128		384	7.80%	of Total Plot Inventory			

SAFFLOWER INVESTIGATIONS

ON-STATION

12-7702-SA	Cultivar Evaluation Nursery	SA	36	3	108	A-7-4	33 32N 15E	Bergman	NDSU-WREC	Lamb
Sub-Totals:		1	36		108	2.19%	of Total Plot Inventory			

BRASSICA (B_) INVESTIGATIONS

ON-STATION

12-CN02-CN	Statewide Canola Trial	CN	13	4	52	A-7-4	33 32N 15E	Bohannon	Var. Industry	Lamb
12-OC06-BC	B. carinata Advanced Yield Trial	BC	25	3	75	A-7-4	33 32N 15E	Males	Agrisoma	Lamb
12-SP30-BC	B. carinata Seeding Rate/Date	BC	30	4	120	A-7-4	33 32N 15E	Males	Agrisoma	Lamb
12-SP31-BC	B. carinata Fertility on Fallow	BC	6	4	24	A-7-4	33 32N 15E	Males	Agrisoma	Lamb
12-SP32-BC	B. carinata Fertility on Recrop	BC	6	4	24	An-4-5	33 32N 15E	Males	Agrisoma	Lamb
12-C102-CN	B. napus Yield Trial 12102	BN	30	2	60	A-7-2	33 32N 15E	Radke	Cibus	Lamb
12-C103-CN	B. napus Yield Trial 12103	BN	30	2	60	A-7-2	33 32N 15E	Radke	Cibus	Lamb
12-C104-CN	B. napus Yield Trial 12104	BN	30	2	60	A-7-2	33 32N 15E	Radke	Cibus	Lamb
12-C105-CN	B. napus Yield Trial 12105	BN	30	2	60	A-7-2	33 32N 15E	Radke	Cibus	Lamb
12-C106-CN	B. napus Yield Trial 12106	BN	30	2	60	A-7-2	33 32N 15E	Radke	Cibus	Lamb
12-C107-CN	B. napus Yield Trial 12107	BN	27	2	54	A-7-1	33 32N 15E	Radke	Cibus	Lamb
12-C108-CN	B. napus Yield Trial 12108	BN	17	2	34	A-7-2	33 32N 15E	Radke	Cibus	Lamb
12-OC07-BJ	B. juncea Variety Trial	BJ	16	4	64	A-7-1	33 32N 15E	Potts	Bayer	Lamb
12-C107-CN	B. rapa Agronomic Trial	BR	12	4	48	A-7-1	33 32N 15E	Weston	BASF	Lamb
12-C108-CN	B. juncea Agronomic Trial	BJ	14	4	56	A-7-1	33 32N 15E	Weston	BASF	Lamb
Sub-Totals:		15	316		851	17.29%	of Total Plot Inventory			

PULSE CROP (PC) INVESTIGATIONS

ON-STATION

12-PC01-PC	Statewide Pea Trial	PC	32	4	128	A-7-3	33 32N 15E	Chen	MAES-CARC	Lamb
12-PC02-PC	Statewide Lentil Trial	PC	14	4	56	A-7-3	33 32N 15E	Chen	MAES-CARC	Lamb
Sub-Totals:		2	46		184	3.74%	of Total Plot Inventory			

OTHER CROP (OC) INVESTIGATIONS

ON-STATION										
12-CCVT	Cover Crop Variety Trial	OC	42	3	126	B-2-4	32 32N 15E	Hensleigh	NRCS-MAES	Boss/Dafoe
12-CCGR	Cover Crop Termination Trial	OC	16	3	48	B-2-4	32 32N 15E	Hensleigh	NRCS-MAES	Boss/Dafoe
Sub-Totals:		2	58		174	3.53%	of Total Plot Inventory			

FORAGE RESEARCH (FR) INVESTIGATIONS

ON-STATION										
09-PG01-FR	Dryland Perennial Grass Forage	FR	32	4	128	South H	27 32N 15E	Hybner	NRCS-BPMC	Boss/Dafoe
09-PG01-FR	Irrigated Perennial Grass Forage	FR	19	4	76	North H	27 32N 15E	Hybner	NSCS-BPMC	Boss/Dafoe
12-FR02-FR	Winter Cereal Forage Trial	FR	16	3	48	A-3-3	33 32N 15E	Wichman	MAES-CARC	Lamb/Boss
12-FR03-FR	Spring Cereal Forage Trial	FR	16	3	48	A-3-1	33 32N 15E	Wichman	MAES-CARC	Lamb/Boss
12-FR05-FR	Pea Forage Trial	FR	6	3	18	A-7-3	33 32N 15E	Wichman	MAES-CARC	Lamb/Boss
Sub-Totals:		5	89		318	6.46%	of Total Plot Inventory			

NUTRIENT RESEARCH (NR) INVESTIGATIONS - None in 2012

SPECIAL PROJECT (SP) INVESTIGATIONS

ON-STATION										
12-SP18-OP	Continuous Crop Rotation	MC	6	4	24	B-9-4	32 32N 15E	Lamb	MAES-NARC	
12-SP19-OP	Crop-Crop-Fallow Rotation	MC	20	3	60	B-9-3	32 32N 15E	Lamb	MAES-NARC	
12-SP20-OP	Crop-Fallow Rotation	MC	24	3	72	B-9-1	32 32N 15E	Lamb	MAES-NARC	
12-SP28-OP	Quinn SR Turkish WW	WW	80	1	80	A-3-3	33 32N 15E	Lamb	Quinn	
12-SP28-OP	Quinn Winter Wheat Populations	WW	28	1	28	A-3-3	33 32N 15E	Lamb	Quinn	
Sub-Totals:		5	158		264	5.36%	of Total Plot Inventory			

PEST MANAGEMENT (PM) INVESTIGATIONS

ON-STATION										
12-PM22-PM	Belay 2.13 SC' Trts on WW	WW	4	4	16	A-3-3	33 32N 15E	Weaver	Valent	Lamb
12-PM32-PM	Spring Foliar Fungicides on WW	WW	16	4	64	A-3-1	32 32N 15E	Burrows	Industry-MAES	Lamb
12-PM33-PM	'Endigo ZCX' & 'Cruiser' for Sawfly	SW	7	4	28	A-3-2	33 32N 15E	Weaver	Syngenta	Lamb
Sub-Totals:		3	27		108	2.19%	of Total Plot Inventory			
OFF-STATION										
12-PM27-PM	Solid-Stemmed SW Variations	SW	10	4	40	Loma	20 27N 10E	Weaver	AgCanada	McKeever Farm
12-PM29-PM	Spring Wheat Fertility on Sawfly	SW	16	4	64	Loma	20 27N 10E	Weaver	MAES-MWBC	McKeever Farm
Sub-Totals:		2	26		104	2.11%	of Total Plot Inventory			

2012 SUMMARY: Project Inventory - (Plots Established)

TOTALS - AGRONOMY & LIVESTOCK PROJECTS

53 Experiments or Trials
2470 Entries in 4923 Plots
3384 Plots for Harvest

GEOGRAPHIC DISTRIBUTION OF PLOT WORK: (by plot count only, not by resources expended. Demos not included.)

ON-STATION	=	84.93%
OFF-STATION	=	12.50%

(Percent of TOTAL OFF-STATION by County): (by plot count only, not by resources expended. Demos not included.)

* Blaine County	=	32.22%	1-Loc:	WW, SW, DUR, Vars
* Chouteau County	=	48.24%	1-Loc:	WW Vars, SW Sawfly, Multi-specie Hill Plots
* Hill County	=	0.00%	0-Loc:	WW, SW, DUR Vars
* Liberty County	=	0.00%	0-Loc:	10-Yr No. Joplin SW, SB location completed 1998
* Phillips County	=	19.54%	1-Loc:	SW, DUR Vars + 3 Spring Crop Demos by M.Manoukian

* Denotes counties traditionally served by NARC-Agronomy (Current off-station plot inventory for Chouteau County is abnormally high due to extensive cooperative wheat stem sawfly work at the McKeever farm near Loma. This site alone had 24.2% of NARC-Agronomy's total inventory of plots managed for 2011, but such is somewhat misleading due to all the breeder and entomology observation plots there.

Note: A code letter after an experiment number signifies that the trial listed was not carried through to final report status due to one or more conditions outline below. Where more than one condition was involved, the code used denote the factor most responsible.

c = experiment planned, but CANCELLED 'prior' to actual plot establishment (proposal rejection or other reasons)
d = severe DROUGHT stress not associated with treatment differences
e = stand ESTABLISHMENT problems not associated with treatment differences
f = FROST or winter injury not associated with treatment differences
g = GRANT proposal submitted / preliminary establishment only - subject to cancellation if funding not received
h = HAIL injury
I = INSECT injury
n = NATURAL calamity to include weather effects other than drought, freezing or hail
o = OTHER (human error - staff or cooperator, equipment malfunction, animal damage, vandalism, etc.)
p = PATHOGEN effects not associated with treatment differences
r = Grant proposal REJECTED 'after' significant establishment effort put forth - ie, continued in reduced format
s = SPRAY damage not associated with treatment differences
t = proposed grant project TERMINATED (after preliminary establishment) due to proposal rejection
u = undue, non-partitionable VARIABILITY
w = WEED infestation effects not associated with treatment differences
v = VIEW only - no formal data collection or analysis
x = plots in place, from previous endeavor - inactive current year, but retained for future viewing/reference

2010-2012
CROP EXPERIMENT INFORMATION RECORD
Agronomy and Livestock
Northern Agricultural Research Center
Havre, Montana

Location	Description	Number of Trials			Number of Entries			Number of Plots			% of Total Plot Inventory		
		2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
On-Station	Winter Wheat*	5	6	6	1142	1255	1250	1361	1474	1469	16.8%	23.4%	29.8%
Off-Station	Winter Wheat*	7	3	3	1072	97	97	1266	242	242	15.7%	3.8%	4.9%
On-Station	Spring Wheat and Durum	4	3	3	225	165	165	675	495	495	8.4%	7.9%	10.1%
Off-Station	Spring Wheat and Durum*	6	4	4	241	74	74	433	222	222	5.4%	3.5%	4.5%
On-Station	Spring Barley	2	2	2	128	128	128	384	384	384	4.8%	6.1%	7.8%
Off-Station	Spring Barley	0	0	0	0	0	0	0	0	0	0.0%	0.0%	0.0%
On-Station	Safflower	1	1	1	38	36	36	114	108	108	1.4%	1.7%	2.2%
On-Station	Brassica sp.	2	1	15	28	18	316	104	72	851	1.3%	1.1%	17.3%
On-Station	Covered Wheat	0	0		0	0	0	0	0	0	0.0%	0.0%	0.0%
On-Station	Pulse Crops	3	5	2	51	102	46	204	366	184	2.5%	5.8%	3.7%
Off-Station	Pulse Crops	0	1	0	0	12	0	0	36	0	0.0%	0.6%	0.0%
On-Station	Other Crops	6	3	2	173	109	58	568	372	174	7.0%	5.9%	3.5%
On-Station	Forage	5	5	5	83	89	89	306	318	318	3.8%	5.1%	6.5%
On-Station	Nutrient Research	1	0	0	32	0	0	128	0	0	1.6%	0.0%	0.0%
On-Station	Special Projects	7	4	5	88	150	158	292	256	264	3.6%	4.1%	5.4%
Off-Station	Special Projects	2	0	0	22	0	0	88	0	0	1.1%	0.0%	0.0%
On-Station	Pest Management	19	10	3	1579	98	27	1889	512	108	23.4%	8.1%	2.2%
Off-Station	Pest Management*	5	16	2	52	403	26	268	1434	104	3.3%	22.8%	2.1%
Grand Total		75	64	53	4954	2736	2470	8080	6291	4923	100.0%	100.0%	100.0%
Harvested								3914	3579	3384	48.4%	56.9%	68.7%
On-Station Plots								6113	4357	4355	75.7%	69.3%	88.5%
Off-Station Plots								1967	1934	568	24.3%	30.7%	11.5%

* Winter Wheat, Spring Wheat & Pest Management:
2011: 1000 single row plots & 1138 hill plots
2012: 1000 single row plots - Individual hill plots no longer included in count

TABLE 1. Intrastate Winter Wheat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions. Northern Agricultural Research Center. Havre, MT. 2012. (Exp# 12-3502-WW)

Cultivar/Line	Release/Pedigree	Stand %	1/ Head Date	Plant HT Inches	Yield Bu/Ac	Moist %	Test Wt Lbs/Bu	Protein %	2/ Sawfly %
Accipiter	Saskatchewan, 2008	88.9	167.4	29.5	47.5	8.2	57.8	13.2	10.1
AP 503 CL2	Agripro, 2007	85.9	160.9	29.1	54.0	8.4	60.1	12.9	10.8
Art	AgriPro, 2007	87.9	158.3	29.9	56.4	8.5	60.7	12.5	7.2
Bearpaw	Montana, 2011	89.9	164.9	30.2	55.4	8.3	58.8	13.1	2.5
Broadview	Alberta, 2009	92.2	164.3	32.1	52.8	8.6	58.2	11.9	9.1
Bynum (CL)	Montana/WestBred, 2005	86.6	164.1	32.7	43.4	8.6	59.3	13.8	2.9
Carter	WestBred, 2006	89.8	167.5	28.1	52.1	8.4	58.8	13.5	1.0
CDC Falcon	Sask/WestBred, 1999	89.2	164.7	28.4	53.3	8.4	59.3	13.2	6.9
Colter	Montana, 2013 (MT08172)	91.9	167.2	31.1	**70.7****	8.4	58.7	11.9	10.7
Curlew	Utah, 2009	83.8	165.3	33.5	44.6	7.9	56.8	13.9	14.3
Decade	Montana/North Dakota, 2010	90.1	168.5	30.9	55.8	8.3	59.7	12.6	9.5
Genou	Montana, 2004	85.8	166.8	34.1	43.5	8.4	58.1	14.3	6.3
Jagalene	AgriPro, 2002	87.3	159.7	29.5	53.8	8.6	61.6	13.3	9.0
Jerry	North Dakota, 2001	83.1	166.0	33.8	44.2	8.5	57.7	13.2	14.2
Judee	Montana, 2011	89.5	167.2	30.5	48.9	8.4	56.9	14.6	2.1
Ledger	WestBred, 2004	81.7	166.6	27.4	48.1	8.5	60.0	12.2	4.9
McGill	Nebraska, 2010	85.3	159.3	31.0	56.9	8.2	59.3	11.8	12.5
MT0871	MT9982//MTW0072/NW97S151	88.9	168.3	29.9	58.4	8.0	57.8	14.1	11.7
MT0978	MT9982//MTW0072/NW97S151	88.2	167.0	30.2	54.8	8.2	58.5	13.3	9.3
MT10113	MT00154//MT9949/XH3207	89.4	162.6	29.4	58.0	8.4	59.6	13.3	6.4
MT10116	Yellowstone*3/KS96WGRC40	87.8	167.5	30.7	54.5	8.0	58.0	14.4	10.6
MT1078	MT02113*4/MTS0359	88.1	165.6	29.1	**62.0***	8.6	57.0	12.0	3.7
MT1088	Choteau/6*Yellowstone	84.5	166.3	30.8	46.9	8.2	58.3	14.2	19.5
MT1090	Reeder/6*Yellowstone	90.7	166.4	31.7	58.3	8.3	56.3	13.4	10.9
MT1091	Reeder/6*Yellowstone	86.3	166.8	30.6	56.3	8.0	57.2	13.4	10.3
MT1092	MT9982*2/Outlook	83.2	165.8	29.4	51.9	8.3	57.7	12.9	10.6
MT1105	Yellowstone*4//MT9982/MTS0222	89.4	166.1	30.1	**61.1***	8.2	58.1	12.5	10.6
MT1155	MTR00118/MT0241//CDC Falcon	86.5	167.0	31.8	49.6	8.4	57.8	14.3	13.6
MT1156	MTR00118/MT0241//CDC Falcon	91.6	168.0	30.6	53.1	8.1	57.4	14.6	11.0
MTCL1067	Yellowstone*4/3/MTCL01158/CDC Teal 11	78.6	165.0	33.1	57.0	8.1	58.2	13.5	7.3
MTCL1077	Yellowstone*4/3/MTCL01158/CDC Teal 11	91.7	165.9	32.2	59.6	8.3	57.1	13.3	11.0
MTS0819	93X312E14/NuHorizon	88.3	168.0	30.4	46.7	8.3	55.8	14.5	5.8
MTS0819-98 HWW	white off-type from line row plots	82.0	167.3	27.4	54.0	8.5	58.4	12.7	3.1
MTS0826	MT9524/G15048//Rampart	92.0	165.1	33.6	57.2	8.7	60.0	12.2	6.4
MTS0832	92X73E70/MTW9911	92.2	162.8	32.3	58.6	8.8	60.2	12.2	6.0
MTS1024	MT02113*4/MTS0359	88.8	167.0	30.7	55.3	8.3	57.2	12.6	6.3
MTW08168	MTW0047/2*MT9982	91.3	168.7	35.2	52.1	8.5	59.0	13.1	18.0
Norris (CL)	Montana/WestBred, 2005	90.2	158.9	33.4	55.0	8.4	59.4	12.5	10.4
Overland	Nebraska, 2007	89.7	164.0	28.9	49.0	8.2	59.0	13.1	2.8
Peregrine	Saskatchewan, 2008	93.4	166.3	39.4	43.9	8.2	56.9	13.0	15.9
Promontory	Utah, 1990	82.6	162.6	30.5	45.4	8.5	61.2	12.4	15.7
Pryor	WestBred, 2002	92.9	167.0	30.1	57.6	8.4	58.0	12.2	2.6
Radiant	Alberta, 2002 (Meridian Seeds)	88.8	166.7	33.2	47.2	8.0	57.5	14.3	15.2

TABLE 1. Continued **Intrastate Winter Wheat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions. Northern Agricultural Research Center. Havre, MT. 2012. (Exp# 12-3502-WW)**

Cultivar/Line	Release/Pedigree	Stand %	1/ Head Date	Plant HT Inches	Yield Bu/Ac	Moist %	Test Wt Lbs/Bu	Protein %	2/ Sawfly %
Rampart	Montana, 1996	86.7	166.6	31.1	46.6	8.7	58.7	13.5	0.0
Robidoux	Nebraska, 2010	88.5	161.8	29.8	54.5	8.4	59.1	13.3	7.1
SY Wolf	Syngenta (AgriPro), 2010	86.7	161.2	31.4	56.2	8.5	60.7	13.3	4.7
Warhorse	Montana, 2013 (MTS0808)	88.9	166.0	30.0	51.7	8.4	57.6	13.1	2.3
WB-Quake	Rampart/Kestrel (WestBred, 2011)	85.5	169.9	30.2	48.4	8.2	58.8	14.3	4.3
Yellowstone	Montana 2005	86.0	166.3	31.7	52.1	8.3	58.1	13.5	8.9
EXPERIMENTAL MEANS		87.9	165.4	31.0	52.9	8.3	58.5	13.2	8.4
LSD (0.05)		ns	3.2	2.4	9.7	ns	1.7	-	8.4
C.V.%		6.3	1.1	4.5	10.5	3.8	1.6	-	7.1
P-VALUE (Entries)		0.5227	<.0001	<.0001	<.0001	0.1659	<.0001	-	<.0001

1/ No. of Days from January 1 (165 = June 13).
2/ Sawfly rating is reported as the percentage of cut stems.

Management Information (12-3502-WW)

Seeding Date:	September 30, 2011
Harvest Date:	August 2, 2012
Fertility:	70-40-25 side banded
System:	no till
Herbicide:	Goldsky, 16 oz/ac
Insecticide:	none
Previous Crop:	Chemical Fallow - Spring Wheat
Precipitation:	9.03"

TABLE 2. Nine-Year Yield Summary on Selected Entries from Dryland Intrastate Winter Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 2003-2012. (Exp# 3502-WW)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1/ YIELD (Bushels Per Acre) 2003	2004	2005	2006	2007	2008	2009	2010	2011 3/	2012	AVE. for YEARS TESTED	% of CHECK YIELD 4/	**9-YR COMP. AVE. YIELD 5/**
OVERLAND	OVERLAND	3							42.3	82.7		49.0	58.0	107.1	**61.2**
MT0552	DECADE (++)	5					64.9	73.5	37.3	69.3		55.8	60.2	103.6	**59.3**
S94-4	CDC FALCON (P+)	9	30.4	69.3	62.3	58.9	61.4	68.2	42.1	72.5		53.3	57.6	100.6	**57.6**
PI619098	WAHOO (++)	8	28.5	72.8	54.7	69.0	54.4	73.5	38.5	74.3			58.2	100.6	**57.5**
BZ9W96-919	PRYOR (P+)	9	37.7	73.1	63.6	57.5	47.8	68.0	41.1	71.4		57.6	57.5	100.5	**57.5**
MT00159	YELLOWSTONE (++)	9	30.2	70.3	58.7	65.6	58.0	69.8	39.7	70.7		52.1	57.2	100.0	**57.2**
MTS0721	BEARPAW (++)	3							38.4	67.1		55.4	53.6	99.0	**56.6**
MTS0713	JUDEE (++)	4						66.4	42.4	72.2		48.9	57.5	99.0	**56.6**
DH001819	ACCIPITER	4						65.4	41.8	73.1		47.5	57.0	98.1	**56.1**
AP503CL2	AP503 CL2	4						62.5	34.2	74.5		54.0	56.3	96.9	**55.4**
BZ96-788	LEDGER (P+)	9	32.3	65.2	69.6	52.5	61.1	57.9	39.3	73.1		48.1	55.5	96.9	**55.4**
BZ022060	CARTER (P++)	7			63.1	48.3	57.2	65.8	38.0	75.9		52.1	57.2	96.6	**55.2**
MTCL0316	NORRIS (P, CL++)	7			62.8	54.0	56.0	64.6	36.2	65.9		55.0	56.4	95.2	**54.4**
JAGALENE	JAGALENE (P+)	9	22.5	68.0	58.4	50.6	54.4	68.2	35.1	78.7		53.8	54.4	95.1	**54.4**
MTS0031	GENOU (++)(saw fly res)	9	28.7	68.7	63.8	54.7	57.0	61.0	46.4	63.4		43.5	54.1	94.6	**54.1**
MTCL0306	HYALITE (HW, P, CL++)	6			53.5	53.2	56.4	67.3	37.2	72.2			56.7	93.8	**53.6**
RADIANT	RADIANT	3							36.6	67.6		47.2	50.5	93.2	**53.3**
PI555458	PROMONTORY	9	30.1	66.2	45.9	53.9	50.7	66.5	37.2	81.1		45.4	53.0	92.6	**53.0**
PI593889	RAMPART (saw fly res)	9	32.4	63.2	60.6	49.0	55.3	53.7	37.8	59.9		46.6	50.9	89.0	**50.9**
ND9257	JERRY	9	25.5	60.6	48.6	55.9	52.9	59.9	38.3	67.6		44.2	50.4	88.0	**50.4**
DH993710	PEREGRINE	4						53.3	37.2	69.8		43.9	51.1	87.9	**50.3**
UT932555	CURLEW	3							36.0	60.7		44.6	47.1	86.9	**49.7**
MTCL0318	BYNUM (P, CL++)(sf res)	7			49.9	47.7	53.5	61.1	42.2	60.3		43.4	51.2	86.4	**49.4**
MEANS (For Entries Listed)			29.8	67.7	58.3	55.1	56.1	64.6	38.9	70.6		49.6			**54.8**
April-July Precip. (in.)			7.07	8.64	7.37	5.71	7.43	8.09	6.29	9.69	8.75	7.33	7.64		
Total Annual Precip. (in.)			11.54	14.43	11.87	10.29	12.42	12.21	12.46	14.61	15.45	9.46	12.47		
Soil NO_3 (lbs.) to SD at Planting			150	418	138	390	416	275	172	204	32	60	226		
SD (Sampling Depth in Inches)			48	48	48	48	48	48	48	48	48	48	48		
Fertilizer Applied		(# N)	70	70	70	70	70	70	70	70	70	100	73		
		(# P_2O_5)	40	40	40	40	40	40	40	40	40	20	38		
		(# K_2O)	25	25	25	25	25	25	25	25	25	10	23.5		

Long-term check variety is Yellowstone.

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, ++ = PVP Title 5 or Title 5 Pending, HW = Hard White Wheat, CL = Clearfield Line.

3/ No harvest due to spotty, poor stands unrelated to variety differences.

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

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

TABLE 3. Nine-Year Test Weight Summary on Selected Entries from Dryland Intrastate Winter Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 2003-2012. (Exp# 3502-WW)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1/ TEST WEIGHT (Pounds Per Bushel) 2003	2004	2005	2006	2007	2008	2009	2010	2011 3/	2012	AVE. for YEARS TESTED	% of CHECK TEST WT 4/	**9-YR COMP. AVE. TEST WT 5/**
JAGALENE	JAGALENE (P+)	9	60.7	62.4	62.1	64.2	61.7	62.7	63.0	64.4		61.6	62.5	104.9	**62.5**
PI555458	PROMONTORY	9	61.4	60.9	61.3	64.1	61.2	61.5	62.6	63.6		61.2	62.0	104.0	**62.0**
AP503CL2	AP503 CL2	4						60.7	63.0	62.2		60.1	61.5	103.2	**61.5**
MTCL0316	NORRIS (P, CL++)	7			63.2	63.5	61.3	60.3	62.6	60.4		59.4	61.5	102.9	**61.3**
BZ96-788	LEDGER (P+)	9	61.4	60.8	62.2	63.2	60.6	60.1	60.4	61.9		60.0	61.2	102.7	**61.2**
MTCL0306	HYALITE (HW, P, CL++)	6			61.0	63.2	60.5	60.4	61.9	63.0			61.6	102.6	**61.2**
MTCL0318	BYNUM (P, CL++)(sf res)	7			61.5	62.9	60.2	61.4	61.4	62.5		59.3	61.3	102.6	**61.1**
MT0552	DECADE (++)	5					60.3	60.5	61.5	62.3		59.7	60.9	102.5	**61.1**
S94-4	CDC FALCON (P+)	9	59.8	60.7	60.3	63.1	59.0	60.2	61.8	61.5		59.3	60.6	101.7	**60.6**
BZ022060	CARTER (P++)	7			62.0	62.0	59.1	59.4	60.4	62.9		58.8	60.7	101.5	**60.5**
MTS0031	GENOU (++) (saw fly res)	9	61.3	59.7	60.9	62.5	59.7	58.7	62.0	60.7		58.1	60.4	101.3	**60.4**
OVERLAND	OVERLAND	3							61.4	62.9		59.0	61.1	101.2	**60.3**
DH001819	ACCIPITER	4						59.8	62.0	61.5		57.8	60.3	101.1	**60.2**
PI593889	RAMPART (saw fly res)	9	61.1	59.1	60.5	62.5	58.6	59.1	61.3	60.4		58.7	60.1	100.9	**60.1**
PI619098	WAHOO (++)	8	60.6	59.5	59.0	62.3	58.6	58.4	61.4	61.7			60.2	100.7	**60.0**
BZ9W96-919	PRYOR (P+)	9	61.9	58.4	59.3	62.1	57.4	59.4	61.7	61.2		58.0	59.9	100.5	**59.9**
MTS0721	BEARPAW (++)	3							61.1	61.4		58.8	60.4	100.2	**59.7**
MT00159	YELLOWSTONE (++)	9	60.0	57.9	59.4	62.2	58.3	57.5	61.7	61.2		58.1	59.6	100.0	**59.6**
ND9257	JERRY	9	60.5	58.8	59.3	62.1	58.0	56.7	60.5	61.1		57.7	59.4	99.7	**59.4**
RADIANT	RADIANT	3							61.1	61.8		57.5	60.2	99.7	**59.4**
MTS0713	JUDEE (++)	4						57.5	62.2	61.0		56.9	59.4	99.6	**59.4**
UT932555	CURLEW	3							61.7	61.1		56.8	59.9	99.2	**59.1**
DH993710	PEREGRINE	4						56.4	61.7	60.4		56.9	58.8	98.7	**58.8**
MEANS (For Entries Listed)			60.9	59.8	60.8	62.9	59.6	59.5	61.7	61.8		58.7			**60.4**
April-July Precip. (in.)			7.07	8.64	7.37	5.71	7.43	8.09	6.29	9.69	8.75	7.33	7.64		
Total Annual Precip. (in.)			11.54	14.43	11.87	10.29	12.42	12.21	12.46	14.61	15.45	9.46	12.47		
Soil NO_3 (lbs.) to SD at Planting			150	418	138	390	416	275	172	204	32	60	226		
SD (Sampling Depth in Inches)			48	48	48	48	48	48	48	48	48	48	48		
Fertilizer Applied	(# N)		70	70	70	70	70	70	70	70	70	100	73		
	(# P_2O_5)		40	40	40	40	40	40	40	40	40	20	38		
	(# K_2O)		25	25	25	25	25	25	25	25	25	10	23.5		

Long-term check variety is Yellowstone.

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, ++ = PVP Title 5 or Title 5 Pending, HW = Hard White Wheat, CL = Clearfield Line.

3/ No harvest due to spotty, poor stands unrelated to variety differences.

4/ Percent of Yellowstone 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 Yellowstone for the same years, and z = 9-Yr average test weight for the check variety Yellowstone.

TABLE 4. Ten-Year Sawfly Summary on Selected Entries from Dryland Intrastate Winter Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 2003-2012. (Exp# 3502-WW)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1/ SAWFLY RATING (% Cut and Lodged) 2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	AVE. for YEARS TESTED	% of CHECK SAWFLY 3/	**10-YR COMP. AVE. SAWFLY 4/**
MTS0713	JUDEE (++)	5						8.3	4.0	4.0	4.0	2.1	4.5	94.5	**3.4**
PI593889	RAMPART (sawfly res)	10	0.3	3.3	8.3	2.3	2.3	13.3	1.0	3.7	1.0	0.0	3.6	100.0	**3.6**
BZ022060	CARTER (P++)	8			13.3	15.0	10.0	10.0	11.7	5.3	3.7	1.0	8.7	169.4	**6.0**
MTS0031	GENOU (++)(sawfly res)	10	0.5	3.3	10.0	6.7	5.0	11.7	1.0	15.0	1.0	6.3	6.0	169.5	**6.0**
MTS0721	BEARPAW (++)	4							4.0	2.3	1.0	2.5	2.4	172.6	**6.2**
MTCL0318	BYNUM (P, CL++)(sf res)	8			15.0	8.3	6.7	13.3	10.0	10.0	5.7	2.9	9.0	174.0	**6.2**
BZ96-919	PRYOR (P+)	10	0.7	3.3	8.3	20.0	35.0	13.3	13.3	3.7	2.3	2.6	10.3	287.6	**10.3**
AP503CL2	AP503 CL2	5						23.3	23.3	8.7	8.3	10.8	14.9	313.5	**11.2**
DH001819	ACCIPITER	5						28.3	10.0	11.7	1.0	10.1	12.2	321.6	**11.5**
MTCL0316	NORRIS (P, CL++)	8			21.7	8.3	23.3	23.3	18.3	18.3	13.3	10.4	17.1	331.5	**11.8**
MT0552	DECADE (++)	6					18.3	35.0	16.7	3.7	6.7	9.5	15.0	394.1	**14.0**
DH993710	PEREGRINE	5						23.3	38.3	23.3	2.3	15.9	20.6	434.7	**15.5**
S94-4	CDC FALCON (P+)	10	1.0	8.3	33.3	25.0	26.7	36.7	13.3	7.0	1.0	6.9	15.9	446.6	**15.9**
BZ96-788	LEDGER (P+)	10	0.2	10.0	21.7	36.7	13.3	46.7	11.7	15.0	1.0	4.9	16.1	451.9	**16.1**
PI619098	WAHOO (++)	9	0.7	5.0	26.7	23.3	36.7	35.0	23.3	13.3	7.0		19.0	479.7	**17.1**
MT00159	YELLOWSTONE (++)	10	0.5	13.3	40.0	18.3	40.0	18.3	23.3	11.7	5.3	8.9	18.0	504.0	**18.0**
MTCL0306	HYALITE (HW, P, CL++)	7			40.0	28.3	25.0	30.0	18.3	20.0	13.3		25.0	546.9	**19.5**
JAGALENE	JAGALENE (P+)	10	0.5	10.0	55.0	23.3	23.3	38.3	23.3	12.0	10.0	9.0	20.5	574.6	**20.5**
ND9257	JERRY	10	0.7	8.3	45.0	18.3	45.0	21.7	40.0	28.3	5.3	14.2	22.7	636.3	**22.7**
PI555458	PROMONTORY	10	1.5	15.0	41.7	28.3	56.7	28.3	48.3	23.3	25.0	15.7	28.4	796.2	**28.4**
OVERLAND	OVERLAND	4							20.0	11.7	11.7	2.8	11.5	813.5	**29.0**
RADIANT	RADIANT	4							31.7	6.7	8.3	15.2	15.5	1089.9	**38.9**
UT932555	CURLEW	4							63.3	35.0	25.0	14.3	34.4	2426.0	**86.5**
MEANS (For Entries Listed)			0.7	8.0	27.1	18.7	24.5	24.1	20.4	12.8	7.1	7.9			**18.2**
April-July Precip. (in.)			7.07	8.64	7.37	5.71	7.43	8.09	6.29	9.69	8.75	7.33	7.64		
Total Annual Precip. (in.)			11.54	14.43	11.87	10.29	12.42	12.21	12.46	14.61	15.45	9.46	12.47		
Soil NO_3 (lbs.) to SD at Planting			150	418	138	390	416	275	172	204	32	60	226		
SD (Sampling Depth in Inches)			48	48	48	48	48	48	48	48	48	48	48		
Fertilizer Applied	(# N)		70	70	70	70	70	70	70	70	70	100	73		
	(# P_2O_5)		40	40	40	40	40	40	40	40	40	20	38		
	(# K_2O)		25	25	25	25	25	25	25	25	25	10	23.5		

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 performance characteristics to include protein, quality, disease resistance, etc. before making cultivar selecton 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 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 sawfly rating of a given entry for years tested, y = average sawfly rating for Rampart for the same years, and z =10-Yr average sawfly 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, MT. 2012. (Exp# 12-3102-SW)

ID	Cultiver or Selection	Stand %	1/ Head Date	Plant HT Inches	2/ Yield Bu/Ac	Moist %	Test Wt Lbs/Bu	3/ Protein %	4/ Sawfly %
MT 1146	06SR149/06SR175	96.0	177.5	28.5	32.6	6.9	51.5	18.1	25.0
MT 1142	06SR49/06SR175	94.7	177.0	30.6	32.6	7.4	52.8	17.3	20.0
LIMAGR3	11FX MN	96.5	174.5	28.4	25.4	7.7	53.0	17.0	15.0
MTHW1064	AGAWAM/IFAFS275	97.5	176.5	30.9	**37.2**	7.7	55.2	17.0	15.0
AGRIPRO8	AP604 CL	97.1	175.5	30.5	28.2	7.3	52.6	18.2	20.0
AGRIPR10	BRENNAN	99.5	175.5	27.3	**38.4**	7.7	56.5	17.1	12.5
LIMAGR1	BUCK PRONTO	89.8	173.0	27.9	32.9	7.4	53.6	17.9	22.5
PI633974	CHOTEAU	95.3	178.0	28.5	31.1	7.2	52.0	17.5	8.0
CAP 34-1	CHOTEAU*3/CAP19	93.5	176.0	26.6	31.9	7.3	53.7	17.1	17.5
WB9879CL	CHOTEAU*3/CHOTEAU/IMI8134	96.4	177.0	28.2	29.8	7.2	51.9	17.4	10.0
MT 1073	CHOTEAU//REEDER F5/REEDER	99.5	176.0	28.8	**35.4**	7.6	55.0	16.4	17.5
MT 1118	CHOTEAU/06SR140	98.5	175.5	26.9	33.4	7.1	50.1	17.3	12.5
MT 1119	CHOTEAU/06SR149	94.3	173.5	27.8	**37.7**	7.2	52.6	17.2	10.0
MT 1120	CHOTEAU/06SR149	95.5	176.5	27.8	32.2	7.0	50.9	17.4	15.0
CHOTWHT1	CHOTEAU/CLEARWHITE	95.4	174.5	30.3	31.1	7.1	52.7	17.7	22.5
MT 1166	CHOTEAU/IMI8209-1//MT0245	95.0	176.0	31.7	30.6	7.2	52.7	17.1	25.0
MT 1007	CHOTEAU/MT0515	94.1	176.5	27.2	**37.3**	7.5	55.0	16.8	12.5
MT 1002	CHOTEAU/MT0515	96.9	179.0	30.9	**35.6**	7.5	52.7	16.7	10.0
MT 1008	CHOTEAU/MT0515	97.0	179.0	30.0	30.9	7.2	52.3	17.1	10.0
MT 1103	CHOTEAU/MT0515	93.9	180.0	28.5	30.5	7.4	53.2	17.1	7.5
MT 1111	CHOTEAU/MT0516	96.9	175.5	28.5	**36.3**	7.3	52.9	16.6	15.0
MT 1112	CHOTEAU/MT0516	92.6	175.5	28.8	**35.7**	7.5	54.4	15.9	12.5
MT 1113	CHOTEAU/MT0516	91.7	175.5	28.2	33.4	7.3	53.7	16.2	22.5
MT 1016	CHOTEAU/MT0564	97.5	178.5	30.1	33.2	7.1	51.7	17.6	7.5
BZ992588	CONAN	97.5	176.0	27.6	32.6	7.7	56.1	17.1	5.0
BZ996434	CORBIN	94.8	176.0	30.6	31.3	7.2	51.3	18.5	7.5
PI660981	DUCLAIR	95.6	175.5	31.1	**34.9**	7.2	51.6	18.0	7.5
CI 13596	FORTUNA	95.5	176.0	34.6	**33.6**	7.6	54.6	16.7	10.0
HANKWHT1	HANK/CLEARWHITE	95.1	175.5	26.7	**34.1**	6.9	50.8	17.2	20.0
MTHW1150	IDO647/MTHW0471	96.4	179.0	30.7	30.2	7.3	52.9	18.1	22.5
MT 1154	IRIS/REEDER//CHOTEAU	96.4	178.5	30.2	**35.3**	7.4	53.5	17.1	10.0
BZ9M1044	JEDD	91.6	175.5	24.8	**34.2**	7.8	55.3	17.1	8.0
AGRIPRO6	KELBY	94.1	176.5	28.3	**36.2**	7.5	56.3	17.2	10.0
PI574642	MCNEAL	95.5	177.5	30.3	**34.1**	7.1	52.3	16.9	30.0
CAP400-1	MCNEAL/GLUPRO*2//CAP19/CHOTEAU	95.2	179.5	26.6	31.6	7.3	54.1	18.3	15.0
MTHW1152	ML316472/06SR217	94.4	172.0	28.5	30.3	6.8	49.5	17.9	20.0
NDSW0449	MOTT	97.4	179.5	31.3	30.1	6.8	51.4	18.4	3.0
MT 1172	MT0245/IMI8209-1//MT0245	97.4	178.5	30.4	**35.7**	7.3	51.1	16.0	22.5
MT 1173	MT0245/IMI8209-1//MT0245	97.9	180.0	29.4	32.1	7.0	49.2	17.6	15.0
CAP219-3	MT0515*2//CAP19/MT0515	99.0	176.0	28.2	**35.4**	7.5	54.1	16.5	27.5
CAP197-3	MT0515*2//CAP19/MT0515	97.4	177.0	32.3	**34.7**	7.0	50.2	16.8	22.5
MT 1108	MT0515/CHOTEAU	93.4	176.5	27.5	29.7	7.2	53.3	17.4	17.5
MT 1106	MT0515/CHOTEAU	94.3	177.0	27.2	26.5	7.1	52.5	16.9	15.0

TABLE 5. Continued **Advanced Yield Spring Wheat Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions. Northern Agricultural Research Center. Havre, MT. 2012. (Exp# 12-3102-SW)**

ID	Cultiver or Selection	Stand %	1/ Head Date	Plant HT Inches	2/ Yield Bu/Ac	Moist %	Test Wt Lbs/Bu	3/ Protein %	4/ Sawfly %
MT 1157	MT0550/CHOTEAU//CHOTEAU/3/2*MT	97.4	176.0	29.4	**37.6**	7.4	55.4	17.5	7.5
MT 1156	MT0550/CHOTEAU//CHOTEAU/3/2*MT	99.0	175.5	28.7	32.4	7.5	53.5	18.3	15.0
MT 1164	MT0550/MT0249//3*MT0249	95.2	176.5	28.6	**37.3**	7.2	52.8	17.8	13.0
MT 1133	MT0628/MT0626	98.0	178.0	30.1	**36.2**	7.1	52.6	17.2	12.5
MTHW1060	MTHW0202/BW315A	90.2	173.0	27.3	28.6	7.2	51.4	17.4	20.0
MTHW1057	MTHW0202/MTHW0471	91.7	177.0	29.0	31.7	7.4	52.6	17.3	15.0
BZ999592	ONEAL	97.0	177.5	29.4	**34.7**	7.4	53.4	18.0	7.5
MT 1168	OUTLOOK/IMI8209-1//MTHW0202	95.5	176.5	27.6	28.2	6.3	48.9	18.6	12.5
ND 695	REEDER	95.6	177.0	29.3	31.4	7.1	52.9	17.5	20.0
AGRIPR14	SY SOREN	92.0	177.0	27.2	29.7	7.0	51.5	17.9	10.0
AGRIPR12	SY TYRA	94.1	178.5	25.4	26.6	7.4	52.8	17.1	8.0
AGRIPR13	SY605 CL	96.4	174.0	31.5	30.0	7.4	54.5	17.9	22.5
CI 10003	THATCHER	96.6	180.0	36.3	25.9	6.9	50.2	17.7	17.5
WB11 2	VANTAGE	98.0	180.5	29.3	28.2	7.3	56.1	19.2	20.0
PI642366	VIDA	100.0	177.0	31.5	**35.1**	6.9	50.8	17.1	5.0
VIDAWHT1	VIDA/CLEARWHITE	96.9	176.5	29.5	**35.2**	7.3	52.9	16.3	12.5
MT 1053	VIDA/MTHW0202	95.5	177.0	26.3	**36.4**	7.5	52.2	16.7	12.5
ACS52610	VOLT	95.4	179.5	29.8	28.0	7.2	53.7	17.7	52.5
BZ92413R	WB GUNNISON	92.5	176.5	29.0	32.3	7.6	52.9	17.0	1.0
WB12 1	WB MAYVILLE	95.5	175.5	25.7	**33.8**	7.2	53.5	17.6	15.0
WB11 3	WB ROCKLAND	93.7	176.5	27.3	30.3	7.2	52.7	18.1	27.5
EXPERIMENTAL MEANS		95.6	176.7	29.0	32.6	7.2	52.8	17.4	15.4
LSD (0.05)		ns	1.7	3.6	4.9	1.9	0.4	-	12.9
C.V.: (S / MEAN)*100		3.2	0.5	6.1	7.7	2.5	1.8	-	37.2
P-VALUE (Entries)		0.4932	<.0001	0.0001	<.0001	<.0001	<.0001	-	<.0001

Bold Indicates cultivars yielding equal to the highest yielding entry based on Fisher's Protected LSD at the 0.05 probability level.
1/ No. of Days from January 1 (177 = 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.

Management Information (12-3102-SW)

Seeding Date:	April 22, 2012
Harvest Date:	August 7, 2012
Fertility:	100-20-10 side banded
System:	no till
Herbicide:	Widematch, 20 oz/ac
Insecticide:	none
Previous Crop:	Chemical Fallow - Spring Wheat
Precipitation:	6.68"

TABLE 6. Ten-Year Yield Summary on Selected Entries from Dryland Advanced Spring Wheat Nursery. Northern Agricultural Research Center. Havre, Montana 2003-2012. (Exp# 3102-SW)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1/ YIELD (Bushels Per Acre) 2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	AVE. for YEARS TESTED	% of CHECK YIELD 3/	**10-YR COMP. AVE. YIELD 4/**
PI642366	VIDA (++)	10	15.2	51.8	59.3	35.8	42.4	55.3	55.6	58.3	44.6	35.1	45.4	142.4	**45.4**
BZ999592	ONEAL (P+)	9		54.9	57.2	31.2	33.6	52.2	48.7	58.0	46.6	34.7	46.4	133.9	**42.6**
BZ902413(R)	WB GUNNISON (P+)	7				33.9	38.4	55.3	46.6	62.4	44.1	32.3	44.7	132.0	**42.0**
PI632252	OUTLOOK (++)	8	15.7	49.4	58.9	31.2	35.7	45.2	43.1	56.4			42.0	131.4	**41.9**
ND695	REEDER (+)	10	13.0	40.3	51.9	30.0	36.2	51.0	49.9	54.6	41.8	31.4	40.0	125.6	**40.0**
BZ9M1044	JEDD (P+)	8			59.9	33.7	34.4	48.2	42.9	52.6	41.0	34.2	43.4	125.5	**40.0**
BZ992588	CONAN (P+)(saw fly tol)	10	13.9	42.7	57.1	32.9	36.1	46.6	44.1	50.0	41.9	32.6	39.8	125.0	**39.8**
BZ992322	HANK (P+)	9	11.0	44.7	54.3	31.7	34.0	45.1	45.3	54.3	42.1		40.3	123.9	**39.5**
PI633974	CHOTEAU (++)(saw fly res)	10	12.7	43.2	58.0	32.1	36.0	45.1	42.3	53.3	38.8	31.1	39.3	123.3	**39.3**
AGRIPR10	BRENNAN	4							54.2	53.9	35.8	38.4	45.6	122.2	**38.9**
CI13596	FORTUNA (saw fly res)	10	9.5	42.0	49.7	33.8	31.5	46.1	45.6	50.1	40.5	33.6	38.2	120.1	**38.2**
ACS52610	VOLT (P+)	8			53.0	28.4	35.1	42.4	43.4	49.7	51.3	28.0	41.4	119.9	**38.2**
AGRIPRO6	KELBY (P+)	8		38.7		30.8	37.7	48.9	42.4	47.2	41.4	36.2	40.4	118.7	**37.8**
PI574642	McNEAL	10	13.2	40.4	51.8	27.2	35.4	45.9	41.9	49.9	36.4	34.1	37.6	118.1	**37.6**
PI660981	DUCLAIR (++)	4							42.3	55.5	41.0	34.9	43.4	116.5	**37.1**
AGRIPRO8	AP604 CL (P+)	6					36.9	46.0	42.0	52.2	40.4	28.2	41.0	115.8	**36.9**
BZ996434	CORBIN (P+)(saw fly res)	9	10.3	48.6		28.9	42.0	47.8	45.2	53.3	45.5	31.3	39.2	113.5	**36.1**
NDSW0449	MOTT (++)	4							45.3	51.1	40.4	30.1	41.7	112.0	**35.7**
AGRIPR13	AGRIPRO SY605 CL	3								46.4	37.3	30.0	37.9	109.8	**35.0**
AGRIPRO7	KUNTZ (P+)	6				26.1	31.3	39.0	45.2	44.9	43.0		38.3	108.7	**34.6**
LIMAGR1	BUCK PRONTO	3			50.7						48.2	32.9	43.9	100.0	**31.8**
CI10003	THATCHER	10	6.9	35.2	39.3	24.9	29.9	33.2	45.5	40.6	37.0	25.9	31.8	100.0	**31.8**
MEANS (For Entries Listed)			12.1	44.3	53.9	30.8	35.7	46.7	45.6	52.1	41.9	32.4			**38.2**
April-July Precip. (in.)			7.07	8.64	7.37	5.71	7.43	8.09	6.29	9.69	8.75	7.33	7.64		
Total Annual Precip. (in.)			11.54	14.43	11.87	10.29	12.42	12.21	12.46	14.61	15.45	9.46	12.47		
Soil NO_3 (lbs.) to SD at Planting			44	86	142	119	220	252	139	141	124	35	130		
SD (Sampling Depth in Inches)			48	48	48	48	48	48	48	48	36	48	47		
Fertilizer Applied	(# N)		70	70	70	70	70	70	70	70	70	100	73		
	(# P_2O_5)		40	40	40	40	40	40	40	40	40	20	38		
	(# K_2O)		25	25	25	25	25	25	25	25	25	10	24		

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 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. 2003-2012. (Exp# 3102-SW)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1/ TEST WEIGHT (Pounds Per Bushel) 2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	AVE. for YEARS TESTED	% of CHECK TEST WT 3/	**10-YR COMP. AVE. TEST WT 4/**
AGRIPRO6	KELBY (P+)	8		60.0		57.2	59.2	59.6	59.5	58.2	62.3	56.3	59.0	108.1	**58.7**
BZ992588	CONAN (P+) (saw fly tol)	10	56.6	59.9	59.4	54.6	57.5	58.6	59.8	58.5	61.2	56.1	58.2	107.2	**58.2**
ACS52610	VOLT (P+)	8			60.1	56.4	57.5	59.1	59.8	58.0	63.2	53.7	58.5	106.9	**58.1**
CI13596	FORTUNA (saw fly res)	10	56.8	59.2	59.2	56.0	56.8	58.8	59.4	57.7	60.7	54.6	57.9	106.7	**57.9**
BZ9M1044	JEDD (P+)	8			59.9	55.5	58.1	57.9	59.7	57.4	61.5	55.3	58.2	106.4	**57.7**
BZ996434	CORBIN (P+)(saw fly res)	9	57.7	60.1		54.7	57.6	57.0	59.9	57.2	61.2	51.3	57.4	106.1	**57.6**
ND695	REEDER (+)	10	57.4	58.9	58.6	53.6	56.8	58.2	60.0	57.8	61.3	52.9	57.5	106.0	**57.5**
BZ999592	ONEAL (P+)	9		60.5	58.8	54.1	56.0	57.8	60.6	58.9	61.1	53.4	57.9	105.8	**57.4**
AGRIPR13	AGRIPRO SY605 CL	3								59.5	60.9	54.5	58.3	105.7	**57.4**
AGRIPR10	BRENNAN	4							59.3	58.4	62.4	56.5	59.2	105.5	**57.3**
BZ902413(R)	WB GUNNISON (P+)	7				54.3	57.4	59.0	60.2	59.5	60.2	52.9	57.6	105.3	**57.2**
PI633974	CHOTEAU (+)(saw fly res)	10	57.8	59.5	58.7	52.8	55.7	56.3	57.9	56.5	59.6	52.0	56.7	104.4	**56.7**
PI642366	VIDA (++)	10	55.9	58.6	57.8	52.0	55.8	58.6	58.8	57.7	60.8	50.8	56.7	104.4	**56.7**
PI632252	OUTLOOK (++)	8	54.3	57.6	58.0	51.3	55.3	57.0	59.2	56.4			56.1	103.7	**56.3**
LIMAGR1	BUCK PRONTO	3			57.5						60.7	53.6	57.3	103.7	**56.3**
AGRIPRO8	AP604 CL (P+)	6					57.9	58.6	59.9	57.6	60.8	52.6	57.9	103.6	**56.2**
BZ992322	HANK (P+)	9	56.5	58.3	55.2	53.7	54.9	56.2	58.8	55.4	59.5		56.5	103.2	**56.0**
AGRIPRO7	KUNTZ (P+)	6				55.3	56.3	55.7	58.4	56.7	60.1		57.1	102.9	**55.9**
PI574642	McNEAL	10	54.0	57.0	57.3	52.7	54.5	56.0	58.5	57.4	59.1	52.3	55.9	102.9	**55.9**
NDSW0449	MOTT (++)	4							58.0	56.4	60.7	51.4	56.6	100.9	**54.8**
PI660981	DUCLAIR (++)	4							57.8	57.3	59.1	51.6	56.5	100.7	**54.7**
CI10003	THATCHER	10	50.3	53.8	55.8	51.1	52.5	55.1	58.9	55.5	59.8	50.2	54.3	100.0	**54.3**
MEANS (For Entries Listed)			55.7	58.6	58.2	54.1	56.5	57.6	59.2	57.5	60.8	53.2			**56.8**
April-July Precip. (in.)			7.07	8.64	7.37	5.71	7.43	8.09	6.29	9.69	8.75	7.33	7.64		
Total Annual Precip. (in.)			11.54	14.43	11.87	10.29	12.42	12.21	12.46	14.61	15.45	9.46	12.47		
Soil NO_3 (lbs.) to SD at Planting			44	86	142	119	220	252	139	141	124	35	130		
SD (Sampling Depth in Inches)			48	48	48	48	48	48	48	48	36	48	47		
Fertilizer Applied	(# N)		70	70	70	70	70	70	70	70	70	100	73		
	(# P_2O_5)		40	40	40	40	40	40	40	40	40	20	38		
	(# K_2O)		25	25	25	25	25	25	25	25	25	10	24		

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 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. Ten-Year Sawfly Summary on Selected Entries from Dryland Advanced Spring Wheat Nursery. Northern Agricultural Research Center. Havre, Montana. 2003-2012. (Exp# 3102-SW)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1/ SAWFLY RATING (% cut and lodged) 2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	AVE. for YEARS TESTED	% of CHECK SAWFLY 3/	**10-YR COMP. AVE. SAWFLY 4/**
BZ902413R	WB GUNNISON (P+)	7				1.0	1.0	10.0	2.3	1.0	5.3	1.0	3.1	17.3	**2.8**
BZ992588	CONAN (P+)(saw fly tol)	10	0.0	15.0	1.7	3.7	1.0	15.0	1.0	11.7	7.0	5.0	6.1	39.7	**6.3**
BZ999592	ONEAL (P+)	9		8.3	3.3	5.0	2.3	11.7	8.3	10.0	10.0	7.5	7.4	43.7	**7.0**
NDSW0449	MOTT (++)	4							1.0	11.7	13.3	3.0	7.3	45.8	**7.3**
PI642366	VIDA (++)	10	0.0	26.7	0.0	5.0	3.7	6.7	8.7	7.0	10.0	5.0	7.3	47.3	**7.6**
BZ996434	CORBIN (P+)(saw fly res)	9	0.0	20.0		1.0	1.0	33.3	5.3	12.0	5.0	7.5	9.5	57.9	**9.2**
BZ9M1044	JEDD (P+)	8			0.0	6.7	6.7	30.0	5.0	23.3	6.7	8.0	10.8	65.4	**10.4**
AGRIPRO8	AP604 CL (P+)	6					20.0	36.7	13.3	26.7	13.3	20.0	21.7	71.6	**11.4**
AGRIPR10	BRENNAN	4							5.3	18.3	11.7	12.5	12.0	75.5	**12.1**
PI660981	DUCLAIR (++)	4							10.0	13.3	28.3	7.5	14.8	93.4	**14.9**
CI 13596	FORTUNA (saw fly res)	10	1.7	20.0	6.7	3.7	5.0	53.3	15.0	20.0	18.3	10.0	15.4	100.0	**15.4**
PI633974	CHOTEAU (++)(saw fly res)	10	0.0	18.3	3.3	2.3	1.0	51.7	10.0	31.7	28.3	8.0	15.5	100.6	**16.1**
PI632252	OUTLOOK (++)	8	0.0	30.0	3.3	16.7	8.3	36.7	10.0	26.7			16.5	105.0	**16.8**
BZ992322	HANK (P+)	9	0.0	18.3	6.7	6.7	10.0	65.0	10.0	35.0	13.3		18.3	106.2	**17.0**
AGRIPR13	AGRIPRO SY605 CL	3								21.7	8.3	22.5	17.5	108.6	**17.3**
CI 10003	THATCHER	10	3.3	30.0	11.7	10.0	15.0	31.7	10.0	30.0	15.0	17.5	17.4	113.3	**18.1**
AGRIPRO6	KELBY (P+)	8		30.0		8.3	15.0	55.0	7.0	25.0	15.0	10.0	20.7	113.8	**18.2**
ND 695	REEDER (+)	10	1.7	23.3	5.0	8.3	13.3	55.0	6.7	33.3	16.7	20.0	18.3	119.3	**19.0**
TRIGEN2	BUCK PRONTO	3			6.7						13.3	22.5	14.2	121.4	**19.4**
PI574642	McNEAL	10	1.7	25.0	6.7	15.0	15.0	51.7	18.3	25.0	36.7	30.0	22.5	146.4	**23.4**
AGRIPRO7	KUNTZ (P+)	6				13.3	16.7	70.0	10.0	56.7	13.3		30.0	156.1	**24.9**
ACS52610	VOLT (P+)	8			16.7	16.7	13.3	86.7	15.0	60.0	13.3	52.5	34.3	207.7	**33.2**
MEANS (For Entries Listed)			0.8	22.1	5.5	7.7	8.7	41.2	8.6	23.8	14.4	14.2			**14.9**
April-July Precip. (in.)			7.07	8.64	7.37	5.71	7.43	8.09	6.29	9.69	8.75	7.33	7.64		
Total Annual Precip. (in.)			11.54	14.43	11.87	10.29	12.42	12.21	12.46	14.61	15.45	9.46	12.47		
Soil NO_3 (lbs.) to SD at Planting			44	86	142	119	220	252	139	141	124	35	130		
SD (Sampling Depth in Inches)			48	48	48	48	48	48	48	48	36	48	47		
Fertilizer Applied	(# N)		70	70	70	70	70	70	70	70	70	100	73		
	(# P_2O_5)		40	40	40	40	40	40	40	40	40	20	38		
	(# K_2O)		25	25	25	25	25	25	25	25	25	10	24		

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 characteristics to include protein, quality, disease resistance, etc. before making cultivar selecton decisions.

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

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

4/ 10-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 = 10-Yr average saw fly 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. 2012. (Exp# 12-9802-SW)

Entry	Culitvar or Selection	Stand %	1/ Head Date	Plant HT Inches	2/ Yield Bu/Ac	Moist %	Test Wt Lbs/Bu	Krnl Wt g/1000	3/ Protein %	4/ NIR Hardness	5/ Sawfly %
3	Alkabo	96.0	180.0	27.6	29.7	7.4	57.7	28.9	16.1		16.7
7	Alzada	91.6	176.3	26.5	**34.4**	7.2	55.8	28.6	14.4		2.3
12	APB D1-35*	97.3	180.0	23.5	26.5	6.4	49.9	22.8	15.8		1.0
15	Belfield*	90.4	176.7	25.9	**31.8**	7.3	56.6	26.2	15.4		1.0
10	D6-419 *	90.6	178.7	26.9	**32.9**	7.4	56.2	25.7	15.5		2.3
11	D7-12 *	97.0	182.3	23.3	28.0	7.0	54.1	21.4	14.6		1.0
2	Divide	90.6	181.7	28.8	28.0	7.3	56.6	26.8	15.8		6.7
4	Grenora	93.0	179.7	27.0	26.0	6.9	55.2	26.1	15.4		8.3
8	Kronos*	96.0	177.7	22.6	**33.0**	7.4	57.1	33.4	14.9		2.3
1	Mountrail	97.0	181.7	31.2	27.9	7.0	54.2	23.0	17.4		13.3
18	MT05158	98.7	181.3	25.0	30.4	7.5	58.4	25.6	15.3		1.0
19	MT05166	98.3	181.7	24.1	28.3	7.3	56.7	24.4	15.8		1.0
20	MT05183	98.0	179.7	25.0	**31.6**	6.9	55.5	23.8	15.1		2.3
17	MT06584	98.0	179.3	24.6	**32.2**	6.8	53.3	20.6	16.1		1.0
16	Normanno*	95.3	179.3	23.3	**32.4**	7.5	56.5	28.2	14.9		1.0
6	Silver (MT03012)	89.4	177.7	25.5	28.3	7.6	57.2	25.9	15.9		4.0
13	Strongfield*	96.6	181.7	30.6	27.8	6.8	54.3	23.3	16.1		2.3
5	Tioga	93.7	182.0	31.3	30.1	7.1	55.7	26.8	16.3		6.7
14	Westhope*	96.0	181.0	29.1	26.4	7.2	57.2	28.2	16.6		8.3
9	Westmore*	98.3	176.3	24.5	**32.0**	7.3	55.3	22.9	15.3		1.0
EXPERIMENTAL MEANS		95.1	179.7	26.3	29.9	7.2	55.7	25.6	15.6		4.2
LSD (0.05)		7.4	1.9	2.6	3.8	0.4	1.6	-	-		3.6
C.V.: (S / MEAN)*100		4.7	0.6	5.9	7.8	3.2	1.7	-	-		52.5
P-VALUE (Entries)		0.2	<.0001	<.0001	0.0	<.0001	<.0001	-	-		<.0001

1/ No. of Days from January 1 (180 = June 28).

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.

* Paid entries.

Management Information (12-9802-DUR)	
Seeding Date:	April 22, 2012
Harvest Date:	August 7, 2012
Fertility:	100-20-10 side banded
System:	no till
Herbicide:	Widematch, 20 oz/ac
Insecticide:	none
Previous Crop:	Chemical Fallow - Spring Wheat
Precipitation:	6.68"

TABLE 10. Ten-Year Yield Summary on Selected Entries from Dryland Montana Spring Durum Nursery. Northern Agricultural Research Center. Havre, Montana. 2003-2012. (Exp# 9802-SW)

2/VARIETY or SELECTION		No. of YEARS TESTED	1/ YIELD (Bushels Per Acre) 2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	AVE. for YEARS TESTED	% of CHECK YIELD 3/	**10-Yr COMP. AVE. YIELD 4/**
STRONGFIELD	STRONGFIELD (+)	7				31.2	37.8	46.6	45.8	68.0	40.7	27.8	42.5	108.8	**40.9**
CANKYLE	KYLE	4	12.5	49.9	46.0	30.2							34.7	108.0	**40.6**
YU894-75	ALZADA (P+)	10	9.1	47.7	46.2	30.6	44.7	45.2	39.5	58.4	43.9	34.4	40.0	106.2	**40.0**
D91080	PLAZA (+)	4	12.4	41.8	50.3	29.6							33.5	104.5	**39.3**
TIOGA	TIOGA	3								64.1	41.9	30.1	45.4	104.3	**39.3**
ACAVONLE	AC AVONLEA (+)	4	8.1	44.7	49.9	31.2							33.5	104.3	**39.2**
SARAGOLL	SARAGOLLA	4						42.8	43.7	61.6	41.3		47.3	103.1	**38.8**
D89135	MAIER (+)	4	10.0	43.5	48.5	29.9							33.0	102.7	**38.7**
D901442	LEBSOCK (+)	4	10.5	46.7	46.6			40.9					36.2	101.6	**38.2**
MT03012	SILVER (+)	7				29.9	36.5	44.5	40.1	55.3	40.4	28.3	39.3	100.4	**37.8**
ALKABO	ALKABO (+)	7				27.1	34.0	40.5	41.4	62.7	39.5	29.7	39.3	100.4	**37.8**
D901313	MOUNTRAIL (+)	10	11.6	44.3	46.7	25.8	36.5	39.8	41.1	63.2	39.4	27.9	37.6	100.0	**37.6**
DILSE	DILSE (+)	6	11.1	41.4	48.6	25.2		40.8	42.0				34.8	99.9	**37.6**
DIVIDE	DIVIDE	7				27.1	37.6	39.1	44.7	60.1	36.4	28.0	39.0	99.7	**37.5**
GRENORA	GRENORA (+)	7				29.7	37.0	41.4	42.8	57.7	36.5	26.0	38.7	99.1	**37.3**
NORMANNO	NORMANNO	6					41.2	44.0	46.4	66.6	11.9	32.4	40.4	97.8	**36.8**
PI478289	MONROE	3	7.1	43.4	47.8								32.7	95.8	**36.0**
LEVANTE	LEVANTE	5					39.8	49.2	45.0	57.7	18.7		42.1	95.6	**36.0**
NDMUNICH	MUNICH (+)	3	10.6	40.4	44.9								31.9	93.4	**35.2**
CI17789	VIC	3	10.9	35.7	44.6								30.4	88.9	**33.4**
D87130	BEN (+)	3	8.4	41.3	41.2								30.3	88.6	**33.3**
PIERCE	PIERCE (+)	9	11.6	40.6	41.9	25.3	32.8	38.8	36.7	50.3	40.0		35.3	87.2	**32.8**
MEANS (For Entries Listed)			10.3	43.2	46.4	28.7	37.8	42.6	42.4	60.5	35.9	29.4			**37.5**
April-July Precip. (in.)			7.07	8.64	7.37	5.71	7.43	8.09	6.29	9.69	8.75	7.33	7.64		
Total Annual Precip. (in.)			11.54	14.43	11.87	10.29	12.42	12.21	12.46	14.61	15.45	9.46	12.47		
Soil NO_3 (lbs.) to SD at Planting			46	86	142	160	220	252	139	141	124	35	135		
SD (Sampling Depth in Inches)			48	48	48	48	48	48	48	48	48	48	48		
Fertilizer Applied		(# N)	70	70	70	70	70	70	70	70	70	100	73		
		(# P_2O_5)	40	40	40	40	40	40	40	40	40	20	38		
		(# K_2O)	25	25	25	25	25	25	25	25	25	10	24		

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 selecton 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. 2003-2012. (Exp# 9802-SW)

VARIETY or SELECTION		No. of YEARS TESTED	1/TEST WEIGHT (Pounds Per Bushel) 2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	AVE. for YEARS TESTED	% of CHECK TEST WT 2/	**10-Yr COMP. AVE. TEST WT 3/**
D901442	LEBSOCK (+)	4	58.2	61.4	58.2			59.6					59.3	104.5	**60.4**
CI17789	VIC	3	58.1	61.5	58.9								59.5	104.0	**60.2**
D87130	BEN (+)	3	57.5	60.8	57.9								58.7	102.8	**59.5**
CANKYLE	KYLE	4	57.7	59.7	58.8	55.2							57.9	102.2	**59.1**
ALKABO	ALKABO (+)	7				54.6	58.9	58.3	58.6	58.7	60.9	57.7	58.2	102.0	**59.0**
PIERCE	PIERCE (+)	9	57.4	60.8	57.5	54.6	59.2	58.6	58.9	58.3	60.7		58.4	101.7	**58.9**
D89135	MAIER (+)	4	56.6	60.0	57.7	55.8							57.5	101.6	**58.8**
DIVIDE	DIVIDE	7				55.5	58.7	57.8	58.4	58.2	60.0	56.6	57.9	101.4	**58.7**
ACAVONLE	AC AVONLEA (+)	4	56.8	60.2	56.5	56.2							57.4	101.4	**58.7**
LEVANTE	LEVANTE	5					58.4	58.4	59.1	58.1	60.3		58.9	101.4	**58.7**
D91080	PLAZA (+)	4	57.1	59.7	56.3	56.1							57.3	101.1	**58.5**
TIOGA	TIOGA	3								58.0	60.7	55.7	58.1	101.1	**58.5**
STRONGFIELD	STRONGFIELD (+)	7				57.3	57.6	57.2	58.8	58.7	59.9	54.3	57.7	101.0	**58.5**
PI478289	MONROE	3	56.7	59.8	56.6								57.7	100.9	**58.4**
GRENORA	GRENORA (+)	7				55.7	57.9	57.4	57.5	58.0	60.6	55.2	57.5	100.6	**58.2**
MT03012	SILVER (+)	7				55.4	57.9	55.6	58.2	56.6	60.4	57.2	57.3	100.4	**58.1**
YU894-75	ALZADA (P+)	10	58.1	58.8	55.3	53.8	57.5	55.7	58.9	58.2	59.9	55.8	57.2	100.2	**58.0**
NDMUNICH	MUNICH (+)	3	55.4	59.4	56.8								57.2	100.1	**57.9**
DILSE	DILSE (+)	6	56.9	59.7	57.6	55.4		58.2	58.5				57.7	100.0	**57.9**
NORMANNO	NORMANNO	6					57.1	55.7	58.2	57.9	58.9	56.5	57.4	99.9	**57.8**
D901313	MOUNTRAIL (+)	10	56.7	59.2	55.6	55.0	58.1	55.7	58.4	58.4	59.9	54.2	57.1	100.0	**57.1**
SARAGOLL	SARAGOLLA	4						55.3	58.1	56.3	59.0		57.2	98.4	**56.9**
MEANS (For Entries Listed)			57.2	60.1	57.2	55.4	58.1	57.2	58.5	57.9	60.1	55.9			**58.5**
April-July Precip. (in.)			7.07	8.64	7.37	5.71	7.43	8.09	6.29	9.69	8.75	7.33	7.64		
Total Annual Precip. (in.)			11.54	14.43	11.87	10.29	12.42	12.21	12.46	14.61	15.45	9.46	12.47		
Soil NO_3 (lbs.) to SD at Planting			46	86	142	160	220	252	139	141	124	35	135		
SD (Sampling Depth in Inches)			48	48	48	48	48	48	48	48	48	48	48		
Fertilizer Applied		(# N)	70	70	70	70	70	70	70	70	70	100	73		
		(# P_2O_5)	40	40	40	40	40	40	40	40	40	20	38		
		(# K_2O)	25	25	25	25	25	25	25	25	25	10	24		

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 selecton 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. Ten-Year Sawfly Summary on Selected Entries from Dryland Montana Spring Durum Nursery. Northern Agricultural Research Center. Havre, Montana. 2003-2012. (Exp# 9802-SW)

VARIETY or SELECTION		No. of YEARS TESTED	1/ SAWFLY RATING (% Cut and Lodged) 2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	AVE. for YEARS TESTED	% of CHECK SAWFLY 2/	**9-Yr COMP. AVE. SAWFLY 3/**
NORMANNO	NORMANNO	6					0.0	2.3	3.7	1.0	2.3	1.0	1.7	9.2	**1.1**
SARAGOLL	SARAGOLLA	4						5.0	6.7	2.3	10.3		6.1	25.2	**3.1**
LEVANTE	LEVANTE	5					0.7	8.3	8.3	8.7	2.3		5.7	28.6	**3.6**
STRONGFIELD	STRONGFIELD (+)	7				0.7	1.7	10.0	5.3	6.7	13.3	2.3	5.7	34.9	**4.3**
D91080	PLAZA (+)	4	0.0	3.3	0.0	1.0							1.1	35.1	**4.4**
YU894-75	ALZADA (P+)	10	6.7	6.7	0.0	1.0	1.0	6.7	15.0	8.3	18.3	2.3	6.6	53.0	**6.6**
ACAVONLE	AC AVONLEA (+)	4	3.3	3.3	0.0	1.0							1.9	62.1	**7.7**
TIOGA	TIOGA	3								13.3	18.3	6.7	12.8	62.2	**7.7**
MT03012	SILVER (+)	7				1.0	1.0	6.7	11.7	23.3	30.0	4.0	11.1	67.7	**8.4**
DIVIDE	DIVIDE	7				0.7	2.3	21.7	15.0	10.0	23.3	6.7	11.4	69.5	**8.7**
GRENORA	GRENORA (+)	7				2.3	2.3	38.3	20.0	16.7	25.0	8.3	16.1	98.6	**12.3**
D901313	MOUNTRAIL (+)	10	3.3	6.7	0.0	2.3	2.3	30.0	18.3	18.3	30.0	13.3	12.5	100.0	**12.5**
ALKABO	ALKABO (+)	7				2.3	3.7	30.0	21.7	26.7	30.0	16.7	18.7	114.3	**14.2**
D901442	LEBSOCK (+)	4	0.0	16.7	3.3			28.3					12.1	120.8	**15.1**
DILSE	DILSE (+)	6	1.7	13.3	1.7	2.3		40.0	21.7				13.4	158.8	**19.8**
PIERCE	PIERCE (+)	9	1.7	10.0	1.7	1.0	3.7	45.0	35.0	38.3	41.7		19.8	159.9	**19.9**
CI 17789	VIC	3	6.7	8.3	1.7								5.6	166.7	**20.8**
D87130	BEN (+)	3	5.0	11.7	0.0								5.6	166.7	**20.8**
NDMUNICH	MUNICH (+)	3	3.3	11.7	1.7								5.6	166.7	**20.8**
D89135	MAIER (+)	4	3.3	11.7	3.3	2.3							5.2	167.5	**20.9**
CANKYLE	KYLE	4	5.0	15.0	1.7	5.3							6.8	218.9	**27.3**
PI478289	MONROE	3	8.3	15.0	5.0								9.4	283.3	**35.3**
MEANS (For Entries Listed)			3.7	10.3	1.5	1.8	1.9	20.9	15.2	14.5	20.4	6.8			**13.4**
April-July Precip. (in.)			7.07	8.64	7.37	5.71	7.43	8.09	6.29	9.69	8.75	7.33	7.64		
Total Annual Precip. (in.)			11.54	14.43	11.87	10.29	12.42	12.21	12.46	14.61	15.45	9.46	12.47		
Soil NO_3 (lbs.) to SD at Planting			46	86	142	160	220	252	139	141	124	35	135		
SD (Sampling Depth in Inches)			48	48	48	48	48	48	48	48	48	48	48		
Fertilizer Applied	(# N)		70	70	70	70	70	70	70	70	70	100	73		
	(# P_2O_5)		40	40	40	40	40	40	40	40	40	20	38		
	(# K_2O)		25	25	25	25	25	25	25	25	25	10	24		

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 selecton 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/ 10-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 = 10-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. 2012. (Exp# 12-2102-SB)

ID	Cultivar or Selection	Stand %	1/ Head Date	Plant Ht Inches	2/ Yield Bu/Ac	Moisture %	Test Wt Lbs/Bu	Plump %	Thin %	3/ Protein %
EM090061	04064-048	79.1	184.5	22.9	45.3	8.1	45.3	22.9	40.3	16.2
EM090105	05032-068	75.3	181.0	21.9	43.4	7.5	44.1	42.3	28.8	16.8
EM090081	05037-079	82.5	186.0	22.3	38.5	7.3	42.8	34.7	32.3	17.2
MT061035	Baronesse/MT981210	85.3	184.5	22.9	47.2	9.0	42.8	28.1	41.2	16.4
COWBOY	CDC Cowboy	69.7	180.0	29.4	27.3	8.3	46.2	68.9	15.5	16.2
YU501385	Champion (Baronesse/Camas)	82.8	180.5	22.8	47.0	8.2	47.5	32.5	33.8	15.1
CONRAD	Conrad	85.8	186.0	23.9	43.8	7.5	44.7	60.2	20.5	16.8
MT080081	Coors/Metcalfe	85.2	183.5	21.0	34.3	7.8	40.9	31.3	39.3	17.1
MT970116	Craft	78.4	177.0	26.7	31.4	8.1	43.9	29.3	37.6	16.0
MT100170	Craft/151	66.7	181.0	28.3	26.6	9.2	55.9	16.5	57.8	19.2
MT960228	Eslick	81.2	187.0	19.7	30.9	7.6	44.2	13.2	29.0	16.8
EM090160	Expedition	86.4	183.0	20.5	39.9	8.8	46.4	47.0	22.6	16.0
MT960101	Geraldine	78.2	183.5	21.9	33.8	7.9	41.1	12.2	62.9	17.8
MT100063	GPCBC3F4 rows 137/Craft	87.1	176.5	21.3	35.2	8.2	43.8	24.1	45.9	14.5
MT100064	GPCBC3F4 rows 137/Craft	79.1	182.0	26.5	33.1	9.2	43.3	29.4	37.0	14.6
MT100070	GPCBC3F4 rows 137/Craft	76.7	176.5	29.5	40.0	9.0	44.9	42.1	31.6	14.9
MT100051	GPCBC3F4 rows 155&158/Haxby	94.0	176.0	28.5	36.0	8.7	47.2	22.1	45.6	14.7
MT100060	GPCBC3F4 rows 155&158/Haxby	84.3	176.5	26.7	35.1	9.5	46.4	25.3	41.0	15.1
MT100074	GPCBC3F4rows 137/Craft	89.2	177.0	27.4	38.0	8.9	44.3	12.8	53.3	14.7
SK 76333	Harrington	78.0	177.5	28.2	37.7	8.9	42.1	42.8	27.7	16.2
MT950186	Haxby	76.2	175.0	25.6	25.1	7.8	43.2	29.6	40.2	15.6
MT103015	Haxby/WCC100	62.5	177.5	26.7	18.2	10.5	55.3	6.9	78.8	15.7
MT981060	Hays	80.6	180.5	24.4	17.1	6.7	38.9	11.9	58.0	16.9
MT103031	Hays/WCC100	65.1	185.0	22.5	19.9	9.4	55.9	6.3	78.2	18.0
MT103043	Hays/WCC100	76.4	178.0	24.2	22.4	7.7	43.0	13.3	68.3	17.5
MT103022	Hays/WCC100	81.5	182.0	24.3	43.5	8.2	44.8	45.9	25.7	16.1
MT910189	Hockett	80.7	175.5	29.3	54.4	9.2	46.2	36.3	31.8	14.7
MT100120	Hockett/X/Lk644/EslickBC3F3 3-	85.6	180.0	28.8	44.4	8.2	43.2	34.7	33.3	15.4
MT100124	Hockett/X/Lk644/EslickBC3F3 3-	89.8	177.5	27.2	39.3	9.1	42.7	32.1	36.8	15.4
MT100125	Hockett/X/Lk644/EslickBC3F3 3-	85.3	183.0	25.6	37.9	8.4	45.1	52.5	23.8	14.9
MT100126	Hockett/X/Lk644/EslickBC3F3 3-	91.9	181.0	25.2	43.4	8.3	44.6	47.7	25.9	15.0
MT100128	Hockett/X/Lk644/EslickBC3F3 3-	83.2	183.0	23.2	27.1	8.4	45.6	55.1	22.7	15.4
MT100130	Hockett/X/Lk644/EslickBC3F3 3-	77.4	179.5	26.6	45.1	8.5	45.0	26.0	43.5	15.8
MT100132	Hockett/X/Lk644/EslickBC3F3 3-	84.4	180.0	28.1	44.7	8.9	43.1	47.6	25.7	15.7
MT100136	Hockett/X/Lk644/EslickBC3F3 3-	93.9	177.5	24.7	41.0	9.0	42.7	28.1	42.3	15.1
MT100113	Hockett/X/Lk644/EslickBC3F4 3G	76.2	178.0	22.3	41.4	8.4	46.1	40.9	32.8	14.0
MT070175	LK644///Hockett F5	77.7	178.5	25.5	49.5	8.3	45.4	59.7	19.8	14.8
MT090001	LK6-44/Excel(29-53)	73.5	176.0	25.2	31.0	8.3	45.3	14.3	64.9	13.7
TR 232	Metcalfe	78.5	176.0	28.8	39.5	8.3	43.8	52.8	27.7	17.1
MT080179	Metcalfe/MT990106	80.2	176.0	30.2	50.7	9.1	45.3	52.1	22.2	17.0
MT070111	MT010178/Harrington	71.6	181.5	27.9	41.3	9.0	44.6	29.0	39.9	17.1
MT090180	MT910189*/LK644/EslickBC3F33-G	69.7	185.0	26.2	29.0	8.4	45.2	43.9	29.7	15.5
MT090181	MT910189*/LK644/EslickBC3F33-G	80.9	179.0	23.5	41.9	8.3	44.9	55.4	21.5	15.3

TABLE 13. Continued **Intrastate Spring Barley Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions at Northern Agricultural Research Center. Havre, MT. 2012. (Exp# 12-2102-SB)**

ID	Cultivar or Selection	Stand %	1/ Head Date	Plant Ht Inches	2/ Yield Bu/Ac	Moisture %	Test Wt Lbs/Bu	Plump %	Thin %	3/ Protein %
MT090182	MT910189*/LK644/EslickBC3F33-G	89.9	180.5	27.0	42.0	8.9	42.9	36.3	34.7	15.4
MT090184	MT910189*/LK644/EslickBC3F33-G	82.6	181.0	24.6	34.7	7.5	45.0	39.4	33.3	14.8
MT090186	MT910189*/LK644/EslickBC3F33-G	82.9	180.5	29.0	37.9	8.1	43.4	18.4	49.5	15.2
MT090190	MT910189*/LK644/EslickBC3F33-G	77.7	183.0	24.4	34.5	7.9	44.4	47.9	25.1	15.3
MT090193	MT910189*/LK644/EslickBC3F33-G	88.0	183.0	22.4	38.5	8.2	44.9	53.5	22.1	15.2
MT010158	MT920041/Harrington	35.3	185.5	22.6	16.1	7.5	44.9	37.4	34.0	17.9
MT010160	MT920041/Harrington	59.5	178.0	27.3	33.3	9.0	44.4	35.5	32.7	16.2
MT061169	MT960101/Coors 37	92.0	180.0	20.6	44.1	7.9	42.5	20.6	48.9	16.3
MT080243	MT960101/MT981210	88.8	177.0	28.1	44.4	8.0	42.7	11.8	54.0	16.3
MT020155	MT960225/H1851195	87.0	174.5	26.8	**55.4**	8.6	46.0	38.7	27.1	14.9
MT070086	MT970148/Coors37	84.2	184.5	17.8	42.0	7.9	42.7	52.0	22.3	16.1
MT070158	MT970148/Klages	77.5	179.0	24.2	51.4	8.6	47.4	63.4	13.5	14.9
MT070159	MT970148/Klages	83.7	179.5	25.1	48.8	9.2	44.3	52.6	20.4	15.2
MT070161	MT970148/Klages	83.7	179.0	30.0	**62.0**	9.4	46.6	59.6	15.0	15.3
MT080281	MT970148/MT970116	80.4	181.5	22.6	42.0	8.3	45.7	39.8	29.2	15.6
MT080279	MT970148/MT970116	78.6	180.0	23.1	44.2	8.3	44.7	24.8	37.6	15.3
MT080285	MT970148/MT970116	84.7	179.5	24.9	44.4	8.8	41.4	22.8	43.1	16.1
MT070125	MT981210/MT970116	77.9	178.0	31.8	49.5	8.8	45.1	38.6	27.7	15.9
PI643354	Pinnacle	75.1	175.0	26.2	24.6	7.3	41.7	27.1	45.4	16.1
EB03 26	Scarlett	82.4	187.0	20.1	41.2	7.5	46.0	37.9	31.3	16.5
6B952482	Tradition	86.5	175.0	29.0	47.3	8.2	45.0	16.4	53.4	15.1
EXPERIMENTAL MEANS		80.1	180.1	25.2	38.6	8.4	44.8	34.9	36.5	15.8
LSD (0.05)		13.6	4.2	6.0	7.6	ns	2.9	-	-	1.1
C.V.		8.5	1.2	11.9	9.8	9.6	3.3	-	-	3.6
P-Value (Entries)		<.0001	<.0001	0.0028	<.0001	0.1074	<.0001	-	-	<.0001

Bold Indicates cultivars yielding equal to the highest yielding entry based on Fisher's Protected LSD at the 0.05 probability level.
1/ No. of Days from January 1 (180 = June 28).
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.

Management Information (12-2102-S**W**)

Seeding Date:	April 21, 2012
Harvest Date:	August 9, 2012
Fertility:	100-20-10 side banded
System:	no till
Herbicide:	Widematch, 20 oz/ac
Insecticide:	none
Previous Crop:	Chemical Fallow - Spring Wheat
Precipitation:	5.15"

TABLE 14. Nine-Year Yield Summary on Selected Entries from Dryland Intrastate Spring Barley Nursery. Northern Agricultural Research Center. Havre, Montana. 2003-2012. (EXP# 2102-SB)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1/ YIELD (Bushels Per Acre) 2003	2004 3/	2005	2006	2007	2008	2009	2010	2011	2012	AVE. for YEARS TESTED	% of CHECK YIELD 4/	**9-YR COMP. AVE. YIELD 5/**
YU501385	CHAMPION (P+)	7			94.4	60.7	64.4	85.5	80.5		95.9	47.0	75.5	114.3	**75.9**
BZ596117	BOULDER (P+)	4			91.0	61.8	70.6	76.1					74.9	112.7	**74.9**
PI568246	BARONESSE (P+)	8	14.2		82.4	49.7	66.8	80.5	72.8	89.5	85.0		67.6	107.9	**71.7**
BZ594-19	WPB XENA (P+)	3	10.7		73.6	65.4							49.9	106.0	**70.4**
MT910189	HOCKETT (++)	9	11.0		78.5	51.7	61.7	73.8	70.4	77.7	76.3	54.4	61.7	100.0	**66.4**
Scarlett	SCARLET	3								83.2	83.9	41.2	69.4	99.9	**66.4**
SK76333	HARRINGTON	8	12.8		71.8	63.6	64.6		71.0	82.4	76.5	37.7	60.1	99.7	**66.3**
MT960101	GERALDINE	9	13.7		76.5	53.9	58.9	68.4	70.8	93.2	81.1	33.8	61.1	99.1	**65.8**
MT960228	ESLICK	6	11.2		77.2	65.5	68.8	69.2				30.9	53.8	97.5	**64.8**
MT010158	AMSTERDAM	9	19.3		80.7	63.2	62.7	75.0	67.2	78.3	64.4	16.1	58.5	94.8	**63.0**
TR232	METCALFE	6				51.4	53.5		68.7	77.9	70.9	39.5	60.3	92.3	**61.3**
MT950186	HAXBY	9	12.0		83.7	57.3	69.9	75.8	48.2	51.5	82.6	25.1	56.2	91.1	**60.5**
2B965057	CONRAD (+)	8			78.9	54.7	57.6	67.4	70.3	82.4	76.9	43.8	66.5	88.4	**58.7**
6B952482	TRADITION (P+)	9	8.8		81.3	66.7	71.5	73.0	50.5	7.3	68.5	47.3	52.8	85.5	**56.8**
MT970116	CRAFT	9	12.1		81.4	61.2	64.3	67.0	37.2	37.3	80.8	31.4	52.5	85.1	**56.5**
PI643354	PINNACLE	3								76.1	75.4	24.6	58.7	84.5	**56.2**
MT981060	HAYS	3	12.1		79.9							17.1	36.4	75.9	**50.4**
MEANS (For Entries Listed)			12.5		80.8	59.0	64.3	73.8	64.3	69.7	78.3	35.0			**63.9**
April-July Precip. (in.)			7.07	8.64	7.37	5.71	7.43	8.09	6.29	9.69	8.75	7.33	7.64		
Total Annual Precip. (in.)			11.54	14.43	11.87	10.29	12.42	12.21	12.46	14.61	15.45	9.46	12.47		
Soil NO_3 (lbs.) to SD at Planting			102	120	184	352	271	157	88	204	374	60	191		
SD (Sampling Depth in Inches)			48	48	48	48	48	48	48	48	48	48	48		
Fertilizer Applied	(# N)		70	70	70	70	70	70	70	70	70	100	73		
	(# P_2O_5)		40	40	40	40	40	40	40	40	40	20	38		
	(# K_2O)		25	25	25	25	25	25	25	25	25	10	24		

Long-term check variety is Hockett.

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 selecton 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 Hockett yield for the same data years as those in which a given entry was tested.

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

TABLE 15. Nine-Year Test Weight Summary on Selected Entries from Dryland Intrastate Spring Barley Nursery. Northern Agricultural Research Center. Havre, Montana. 2003-2012. (EXP# 2102-SB)

2/ VARIETY or SELECTION		No. of YEARS TESTED	1/ TEST WEIGHT (Pounds Per Bushel) 2003	2004 3/	2005	2006	2007	2008	2009	2010	2011	2012	AVE. for YEARS TESTED	% of CHECK TEST WT 4/	**9-YR COMP. AVE. TEST WT 5/**
Scarlett	SCARLETT	3								48.9	51.6	46.0	48.8	104.6	**52.0**
PI643354	PINNACLE	3								49.4	53.4	41.7	48.2	103.2	**51.3**
YU501385	CHAMPION (P+)	7			50.9	48.4	50.3	52.7	51.7		52.9	47.5	50.6	102.1	**50.7**
BZ596117	BOULDER (P+)	4			50.8	48.7	49.3	51.9					50.2	101.6	**50.5**
MT950186	HAXBY	9	49.1		50.9	48.7	50.7	52.9	52.0	50.6	53.8	43.2	50.2	101.0	**50.2**
MT970116	CRAFT	9	48.8		50.7	48.8	50.0	51.5	51.5	50.6	53.0	43.9	49.9	100.3	**49.9**
BZ594-19	WPB XENA (P+)	3	45.8		45.6	45.1							45.5	100.2	**49.8**
MT910189	HOCKETT (++)	9	49.3		48.0	47.5	49.9	52.0	51.2	51.2	52.2	46.2	49.7	100.0	**49.7**
MT010158	AMSTERDAM	9	48.9		50.9	46.9	49.6	50.7	50.6	50.0	52.6	44.9	49.5	99.5	**49.5**
2B965057	CONRAD (+)	8			47.1	45.7	47.4	49.4	49.4	49.1	51.4	44.7	48.0	97.1	**48.3**
TR232	METCALFE	6				45.3	48.2		50.7	48.4	51.6	43.8	48.0	96.6	**48.0**
MT960228	ESLICK	6	46.3		47.1	46.1	48.9	50.1				44.2	47.1	96.5	**48.0**
PI568246	BARONESSE (P+)	8	46.0		45.8	44.5	48.7	49.9	50.1	49.4	51.3		48.2	96.1	**47.8**
MT960101	GERALDINE	9	47.1		46.1	45.0	47.3	49.9	50.4	49.2	51.7	41.1	47.5	95.6	**47.5**
6B952482	TRADITION (P+)	9	45.1		46.7	46.4	47.0	49.2	48.6	48.0	49.5	45.0	47.3	95.1	**47.3**
SK76333	HARRINGTON	8	45.5		44.9	44.6	47.2		49.8	49.2	51.0	42.1	46.8	94.7	**47.1**
MT981060	HAYS	3	43.0		44.1							38.9	42.0	87.8	**43.6**
MEANS (For Entries Listed)			46.8		47.8	46.5	48.8	50.9	50.5	49.5	52.0	43.8			48.9
April-July Precip. (in.)			7.07	8.64	7.37	5.71	7.43	8.09	6.29	9.69	8.75	7.33	7.64		
Total Annual Precip. (in.)			11.54	14.43	11.87	10.29	12.42	12.21	12.46	14.61	15.45	9.46	12.47		
Soil NO_3 (lbs.) to SD at Planting			102	120	184	352	271	157	88	204	374	60	191		
SD (Sampling Depth in Inches)			48	48	48	48	48	48	48	48	48	48	48		
Fertilizer Applied	(# N)		70	70	70	70	70	70	70	70	70	100	73		
	(# P_2O_5)		40	40	40	40	40	40	40	40	40	20	38		
	(# K_2O)		25	25	25	25	25	25	25	25	25	10	24		

Long-term check variety is Hockett.

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 selecton 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 Hockett 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 Hockett for the same years, and z = 9-Yr average test weight for the check variety Hockett.

TABLE 16. Montana Safflower Cultivar Evaluation Nursery Grown On-Station Under No-Till Dryland Fallow Conditions at Northern Agricultural Research Center. Havre, Montana. 2012.
(Exp# 12-7702-SA) 2 REP ANALYSIS - Spray Drift Damage in Rep 3

ENTRY	CULTIVAR or SELECTION	PLANTS per ft2	1/ FLWR DATE	PLNT HT Inches	2/ YIELD Lbs/Ac	TEST WT Lbs/Bu	MOIST %	OIL % 0%Mois.	OIL % 8%Mois.	OIL Lbs/Ac 8%Mois.
1	00B 1597-3	3.5	204.5	28.1	1451.0	43.6	6.4	40.8	44.4	644.4
2	03B 8069	5.1	201.5	23.5	1309.6	42.5	6.7	40.3	43.8	573.2
3	04B 7563	4.5	203.0	24.2	1528.6	43.1	6.6	39.1	42.5	649.6
4	05B 3401	3.6	201.5	25.7	1344.9	39.5	6.5	41.7	45.4	610.1
5	05B 6570	3.5	202.5	24.6	807.6	40.0	5.7	47.0	51.0	412.8
6	06B 1044	3.7	203.5	28.2	1392.5	41.2	6.6	41.1	44.6	621.3
7	06B 3015	3.6	202.0	24.6	1462.5	39.9	6.0	47.9	52.0	760.5
8	06B 3172	3.0	203.0	25.7	1365.4	40.6	6.5	43.3	47.1	643.2
9	08B 1031	3.8	203.0	26.9	801.6	40.1	5.7	43.9	47.7	382.6
10	08B 4142	2.3	202.5	26.5	1351.1	42.7	6.4	41.3	44.9	606.8
11	08B 6366	3.4	201.5	26.0	405.8	39.9	5.6	45.6	49.6	201.9
12	08B 6373	3.3	203.0	22.1	1254.0	39.7	5.9	45.7	49.7	622.9
13	10B 6005	3.5	202.5	24.3	1588.3	42.0	6.7	39.3	42.7	677.9
14	10B 6015	3.4	204.5	23.6	1413.1	43.3	6.5	41.4	45.0	636.2
36	CARDINAL	3.5	203.5	27.8	1650.6	44.2	6.6	38.8	42.2	696.1
35	FINCH	3.6	201.5	25.0	1565.2	45.1	6.7	39.2	42.6	667.3
27	HYBRID 1601	2.8	201.5	28.8	**1858.5**	42.6	6.7	40.4	44.0	**816.8**
16	HYBRID 254	2.0	201.0	26.9	1395.2	38.1	5.7	49.0	53.2	742.4
17	HYBRID 4617	2.3	201.5	24.9	1413.1	38.6	6.3	43.8	47.6	672.4
18	HYBRID 528	2.7	200.5	25.2	1684.6	35.7	5.8	50.1	54.4	**916.6**
19	HYBRID 570	3.3	201.5	29.3	1540.5	37.6	5.8	49.6	53.9	**830.0**
20	HYBRID 605	2.9	201.5	26.7	1664.9	39.0	6.0	49.9	54.3	**903.9**
15	HYBRID 621	2.8	200.0	24.7	1421.1	37.8	5.8	49.3	53.5	761.0
26	HYBRID 9049	2.5	202.0	27.6	1689.7	44.2	6.8	35.5	38.6	652.0
22	HYBRID B200	2.2	201.5	27.3	1762.0	45.3	6.8	36.3	39.5	695.8
23	HYBRID B300	2.3	201.0	25.4	**2085.6**	45.2	6.7	35.9	39.1	**814.3**
21	HYBRID B446	2.1	200.5	25.9	1781.2	45.5	6.8	36.2	39.4	701.9
25	HYBRID B9049S	1.8	200.5	26.2	1826.0	44.3	6.7	37.1	40.3	735.3
24	HYBRID B989	1.9	201.5	27.1	1734.6	44.1	6.7	36.0	39.2	679.5
28	MONDAK	3.3	202.5	24.9	1558.7	43.0	6.4	40.5	44.0	686.3
34	MORLIN	4.4	203.0	25.9	1252.6	41.4	6.4	40.2	43.7	547.4
29	MT 2000	1.1	205.0	19.4	1338.1	41.5	5.5	43.3	47.1	629.9
30	MT 2001	3.3	203.0	20.5	1279.1	40.6	6.5	41.4	45.0	575.4
31	MT 2003	5.8	202.5	22.7	1307.3	42.6	6.2	41.3	44.9	585.9
32	MT 2004	3.3	200.0	20.8	1388.1	42.1	6.5	40.6	44.1	612.3
33	NUTRASAFF	3.1	201.5	28.1	322.7	37.7	4.7	49.7	54.1	175.0
EXPERIMENTAL MEANS		3.1	202.1	25.4	1416.5	41.5	6.2	42.3	46.0	642.8
LSD (0.05)		1.3	1.5	3.5	248.1	1.1	0.6	1.5	1.6	112.9
C.V.: (S / MEAN)*100		20.4	0.4	6.8	8.6	1.3	4.5	1.7	1.7	8.7
P-VALUE (Entries)		<.0001	<.0001	0.0	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001

Bold Indicates cultivars yielding equal to the highest yielding entry based on Fisher's Protected LSD at the 0.05 probability level.
1/ No. Days from January 1 (202 = July 20)
2/ Volumetric yields are based on plot weights adjusted to uniform 8 percent grain moisture.

Management Information (12-7702-SAF)

Seeding Date:	April 20, 2012	Herbicide:	none
Harvest Date:	October 15, 2012	Fungicide:	Quadris, 8 oz/ac, Rep 1 only
Fertility:	0-45-0 broadcast	Previous Crop:	Chemical Fallow - Winter Wheat
System:	no till	Precipitation:	8.03"

TABLE 17. Ten-Year Yield Summary on Selected Entries from Dryland Safflower Nursery. Northern Agricultural Research Center. Havre, Montana. 2003-2012. (Exp# 7702-SA)

1/ VARIETY or SELECTION		No. of YEARS TESTED	YIELD (Lbs Per Acre) 2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	AVE. for YEARS TESTED	% of CHECK YIELD 2/	**10-Yr COMP. AVE. YIELD 3/**
HYBRID 1601	HYBRID 1601	6					1695	2178	2839	2117	2559	1858	2208	189.3	**1915**
06B 1044	06B 1044	3								1855	1927	1392	1725	170.0	**1721**
HYBRID 9049	HYBRID 9049	7			1510	1434	1988	2264	2606	2229	2201		2033	166.7	**1687**
CARDINAL	CARDINAL	6					1384	1774	2462	2014	2077	1651	1894	162.3	**1643**
MON-DAK	MON-DAK	6					1584	1766	2078	2070	1967	1559	1837	157.5	**1594**
05B 3401	05B 3401	5						1806	2153	1755	1873	1345	1786	154.3	**1561**
03B 8069	03B 8069	4			1216					1908	1708	1310	1535	150.5	**1523**
WILL 95FI	FINCH	10	564	1277	1214	1082	1583	1977	2086	1580	2064	1565	1499	148.2	**1499**
08B 1031	08B 1031	3								1735	1938	802	1491	147.0	**1488**
WILL	MONTOLA 2004 (++)	9	449	1257	1393	1158	1669	1967	2239	1833	1940		1545	141.9	**1436**
011-2180	MORLIN (++)	10	495	1360	1194	1014	1311	1723	2077	1924	1927	1253	1428	141.1	**1428**
WILL	MONTOLA 2000 (++)	9	479	1114	1161	1018	1540	2080	2003	1676	1836		1434	131.8	**1333**
WILL	CENTENNIAL (++)	7	494	1131	1181	1257	1522	1682	2014				1326	131.2	**1327**
05B 6570	05B 6570	5						1295	2025	1697	1704	808	1506	130.1	**1316**
Will WOMA2003	MONTOLA 2003 (++)	9	468	1110	1226	883	1301	1724	2042	1741	1839		1371	125.9	**1274**
WILL	S-541	4	414	1202	1062	1068							937	120.1	**1215**
91B3842	NUTRASAF (++)	10	211	1049	1036	824	1210	1157	1589	1541	1179	323	1012	100.0	**1012**
MEANS (For Entries Listed)			447	1187	1219	1082	1526	1799	2170	1845	1916	1260			**1469**
April-July Precip. (in.)			7.07	8.64	7.37	5.71	7.43	8.09	6.29	9.69	8.75	7.33	7.64		
Total Annual Precip. (in.)			11.54	14.43	11.90	10.29	12.42	12.21	12.46	14.61	15.45	9.46	12.48		
Soil NO_3 (lbs.) to SD at Planting			78	214	708	157	154	665	219	115	99	35	244		
SD (Sampling Depth in Inches)			48	48	48	48	48	48	48	48	36	48	47		
Fertilizer Applied		(# N)	70	70	50	0	0	0	0	0	0	100	29		
		(# P_2O_5)	40	40	20	40	45	40	45	45	45	20	38		
		(# K_2O)	25	25	10	0	0	0	0	0	0	10	7		

Long-term check variety is Nutrasaf.

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

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

TABLE 18. Ten-Year Percent Oil Summary on Selected Entries from Dryland Safflower Nursery. Northern Agricultural Research Center. Havre, Montana. 2003-2012. (Exp# 7702-SA)

1/ VARIETY or SELECTION		No. of YEARS TESTED	Oil (%) @ 8% Seed Moisture 2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	AVE. for YEARS TESTED	% of CHECK Oil 2/	**10-Yr COMP. AVE. Oil 3/**
91B3842	NUTRASAF (++)	10	46.2	44.9	43.8	43.2	48.5	44.6	45.8	36.9	52.4	54.1	46.0	100.0	**46.0**
05B 6570	05B 6570	5						43.9	42.8	36.3	48.8	51.0	44.6	95.3	**41.6**
08B 1031	08B 1031	3								37.2	45.7	47.7	43.5	91.1	**39.8**
WILL	S-541	4	41.2	40.5	39.5	39.7							40.2	90.3	**39.5**
WILL	CENTENNIAL (++)	7	40.1	40.1	39.5	39.9	43.9	41.7	39.9				40.7	89.9	**39.3**
03B 8069	03B 8069	4			35.8					42.2	41.0	43.8	40.7	87.0	**38.0**
06B 1044	06B 1044	3								37.3	42.0	44.6	41.3	86.4	**37.7**
05B 3401	05B 3401	5						37.6	38.1	36.8	43.9	45.4	40.3	86.3	**37.7**
WILL	MONTOLA 2000 (++)	9	38.7	37.3	37.9	35.7	38.6	38.2	37.3	38.8	43.3		38.4	85.1	**37.2**
011-2180	MORLIN (++)	10	37.3	37.1	36.4	36.9	39.3	37.2	35.3	39.5	41.8	43.7	38.4	83.5	**36.5**
MON-DAK	MON-DAK	6					36.7	34.6	34.4	41.1	40.5	44.0	38.5	81.9	**35.8**
Will WOMA2003	MONTOLA 2003 (++)	9	37.8	34.9	36.2	34.8	36.8	36.5	34.5	39.3	41.8		37.0	81.9	**35.8**
WILL	MONTOLA 2004 (++)	9	37.2	35.5	35.5	33.9	35.8	35.3	35.2	39.1	43.5		36.8	81.5	**35.6**
CARDINAL	CARDINAL	6					36.1	33.7	34.8	43.6	39.2	42.2	38.3	81.4	**35.6**
WILL 95FI	FINCH	10	34.5	34.5	35.0	35.5	36.5	34.5	34.9	43.6	40.9	42.6	37.3	80.9	**35.4**
HYBRID 1601	HYBRID 1601	6					36.1	30.4	34.7	39.6	40.3	44.0	37.5	79.7	**34.8**
HYBRID 9049	HYBRID 9049	7			31.9	31.0	32.1	34.3	29.1	42.8	34.6		33.7	74.8	**32.7**
MEANS (For Entries Listed)			39.1	38.1	37.2	36.7	38.2	37.1	36.7	39.6	42.7	45.7			**37.6**
April-July Precip. (in.)			7.07	8.64	7.37	5.71	7.43	8.09	6.29	9.69	8.75	7.33	7.64		
Total Annual Precip. (in.)			11.54	14.43	11.90	10.29	12.42	12.21	12.46	14.61	15.45	9.46	12.48		
Soil NO_3 (lbs.) to SD at Planting			78	214	708	157	154	665	219	115	99	35	244		
SD (Sampling Depth in Inches)			48	48	48	48	48	48	48	48	36	48	47		
Fertilizer Applied		(# N)	70	70	50	0	0	0	0	0	0	100	29		
		(# P_2O_5)	40	40	20	40	45	40	45	45	45	20	38		
		(# K_2O)	25	25	10	0	0	0	0	0	0	10	7		

Long-term check variety is Nutrasaf.

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

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