

# 2010 Small Grains Report

Southcentral and Southeast Idaho Cereals Research & Extension Program

Juliet Marshall, Chad Jackson, Tod Shelman, Linda Beck, and Katherine O'Brien



**University of Idaho**  
College of Agricultural *and* Life Sciences

Cover caption

Photo top left is of spring wheat variety trial plots, Aberdeen 2010; top right is Idagold II barley plots between wheat trials, Aberdeen 2010. Bottom left is spring wheat, Aberdeen 2010; bottom right is 6-row spring barley, Aberdeen 2010.

Southcentral and Southeastern Idaho Cereals Research and Extension Program

<http://www.cals.uidaho.edu/cereals/>

Published and distributed by the Idaho Agricultural Experiment Station,  
Donn Thill, Interim Director, University of Idaho College of Agricultural  
and Life Sciences, Moscow, Idaho 83844-2337.

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## ACKNOWLEDGEMENTS

Idaho wheat and barley producers, through cooperative research and extension grants from the Idaho Wheat and Barley Commissions, provided partial funding for these small grain performance evaluations. Support was also provided by the University of Idaho Cooperative Extension System, the Idaho Agricultural Experiment Station, and by fees paid by plant breeding companies. This report represents the collective efforts of many individuals. Idaho Cooperative Extension System County Educators coordinated many of the off-station nurseries and field days. Grower-cooperators provided their time, land, and other inputs for management of these trials and appreciation is expressed to them for their support. The Idaho Wheat Quality Laboratory at Aberdeen analyzed the end-use quality for harvested wheat samples. Appreciation is also expressed to the numerous support personnel who assisted with trial establishment, maintenance, harvest, grain processing, and data analysis. Finally, cereal breeders throughout the Northwest are recognized for their contributions since the nurseries would not be possible without their entries. The authors wish to thank all who have contributed to the success of this project.

### Grower Cooperators

Scott Brown - Soda Springs  
Gilbert and Carl Hofmeister - Rockland  
Dave Cook - Ririe  
Duane Grant - Rupert  
Don Marotz - Ashton  
Ned Moon and Melvin Barfuss of Jentzsch-Kearl Farms - Rupert  
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### Disclaimer Statement

This report represents research in progress and results may change with additional testing. Recommendations for use or non-use of any variety tested in these trials is not stated or implied. Inclusion of a variety in these trials cannot be construed as recommending that variety over varieties not included in the trials.

ALWAYS read and follow the instructions printed on pesticide labels. The pesticide recommendations in this UI publication do not substitute for instructions on the label. Due to constantly changing pesticide laws and labels, some pesticides may have been cancelled or had certain uses prohibited. Use pesticides with care. Do not use a pesticide unless both the pest and the plant, animal, or other application site are specifically listed on the label. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock. Trade names are used to simplify information; no endorsement or discrimination is intended.

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# 2010 Small Grains Report for Southcentral and Southeastern Idaho

*Juliet Marshall, Chad Jackson, Tod Shelman, Linda Beck, and Katherine O'Brien*

## Additions and Changes:

For 2010, a hard winter wheat dryland nursery was moved from Preston to Rockland. Protein data was obtained using a Foss NIR machine instead of a Perten grain analyzer.

## Introduction

Increases in cereal grain yields result from a combination of genetic improvements in varieties and from improved agronomic practices. Studies have shown that genetic improvements have contributed more than 50 percent of the total improvement in yield over the past 30 or 40 years. The objective of the University of Idaho Small Grain Performance Trials is to provide an unbiased appraisal and evaluation of currently available varieties and advanced experimental lines. This information will assist Idaho growers in comparing and selecting varieties best suited to their particular area and growing conditions.

Varietal development programs strive not only for greater yield potential, but also for improved end-use quality, better disease and insect resistance, yield stabilization through improved winter hardiness, better straw strength, etc. A more detailed description of variety development, cooperative extension testing and evaluation, and seed production programs is given in the University of Idaho publication titled, "Small Grain Variety Development and Adaptation in Idaho", CIS 976. Bringing a new variety to the market place is a cooperative effort by many individuals.

Varieties are best evaluated by comparing performance over a number of locations and preferably over more than one year. Varietal performance can change in response to both environmental and cultural/management conditions. This

report summarizes small grain trials conducted throughout Southcentral and Southeastern Idaho that were harvested in 2010, as well as milling and baking data from trials harvested in 2009.

## Materials & Methods

### Locations

Cereal trials were established at five winter and five spring locations throughout SC and SE Idaho during the fall of 2009 and the spring of 2010. For location details, please see the descriptions on pages 5 to 11. The Ririe & Rockland winter and Soda Springs spring trials were grown under dryland conditions and all other trials were grown under irrigation. The trials at Aberdeen and Kimberly were grown at UI Research and Extension Centers, and the remaining trials were grown in producers' fields.

### Agronomic Practices

Untreated seed was planted at the following rates:

- Irrigated Wheat: 1,000,000 seeds per acre or approximately 95 pounds per acre.
- Irrigated Barley: 800,000 seeds per acre or approximately 80 pounds per acre.
- Dryland Wheat: 700,000 seeds per acre or approximately 65 pounds per acre.
- Dryland Barley: 600,000 seeds per acre or approximately 60 pounds per acre.

Row spacing was set at 7 inches using double disk openers for all irrigated locations and the Soda Springs dryland location. The Ririe dryland location used a 10-inch row spacing and hoe-type openers

and the Rockland location used a 12-inch row spacing with shanks preceding double disk openers. Plots at all locations except for Aberdeen were planted 5 feet wide by 14 feet long then sprayed back to 10 feet long using glyphosate herbicide. Aberdeen plots were planted 5 feet wide by 13.3 feet long then sprayed back to 9.3 feet long. All entries were replicated 4 times at each location in a randomized complete block design. Except for planting and harvest operations, nitrogen fertilization, and miscellaneous maintenance, trials established in producers' fields received the same "grower management" or cultural operations as applied to the surrounding commercial wheat or barley field.

Nitrogen fertilizer in irrigated locations was managed according to the following methodology: Yield goals were set for each class at each location using historical yield data. These yield goals were used to calculate optimal fertility amounts according to the following methods: Soft white winter, soft white spring, and winter barley; lbs/acre nitrogen needed = 2 times yield goal. Hard winter and hard spring wheat; lbs/acre nitrogen needed = 2 times yield goal, plus 40 lbs nitrogen/acre topdressed at flowering. Spring 2 row and 6 row barley: lbs/acre nitrogen needed = 1.7 times the yield goal. Hard wheat nurseries received the remaining balance of nitrogen in urea (46-0-0) topdressed at heading using hand broadcast spreaders. Fertilizers and pesticides applied are listed on pages 6 to 11. Planting and harvesting operations by university personnel were timed to approximately coincide with corresponding cooperator operations.

### **Description of Agronomic Data**

Each entry at each location was measured for grain yield, test weight, plant height, heading date, and lodging (when present).

- Yield is calculated for wheat at 60 pounds per bushel, and 48 pounds per bushel for barley.

- Test weight is reported in pounds per standard bushel.
- Plant height is reported in inches from the soil surface to the tip of the heads, awns excluded.
- Heading date is reported as the date when 50 percent of heads are fully emerged from the boot.
- Lodging is reported as the percent of the plot area that was not standing straight prior to harvest.

### **Description of End-use Quality Data**

Grain protein for each variety in 2010 was analyzed with a Foss NIR grain analyzer. Protein data are found in conjunction with the agronomic data noted above in tables 4 to 50. These protein values are best utilized in comparisons between varieties within a nursery.

Due to the time necessary to complete milling and baking evaluations, test results from the Idaho Wheat Quality Laboratory are not available for the 2010 harvest in this report. Data are given for these characteristics from the 2009 harvest and are found in tables 58 to 69.

Milling and baking tests and plump seed evaluations use standardized testing methods and are described below:

- Flour protein: this is the flour protein content, measured on a fixed 14 percent moisture basis. Lower numbers are better for soft wheat; higher numbers are preferred for hard wheat.
- Break flour yield: represents ease of milling or kernel softness; higher numbers are preferred.
- Flour yield: the percent of flour obtained from a sample of wheat; higher percentages are better.
- Whole grain protein percent: protein content of the whole grain on a 12 percent moisture basis. Lower percentages are preferred for soft wheat; higher

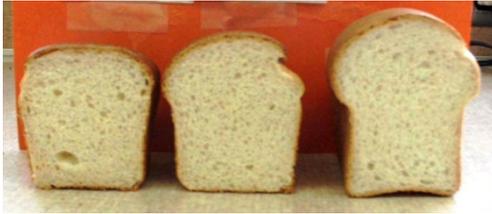
percentages are preferred for hard wheat.

- Hardness value: a measure of kernel hardness; generally soft white wheats are below 35, hard white wheats are between 40-55 and hard red wheats are above 40.

Additional evaluations include the following:

### Hard Wheats

Bake volume: This is the volume of an experimental loaf of bread measured in cubic centimeters and reflects protein quality; higher volume is preferred.



### Soft Wheats

Cookie diameter: Diameter of a cookie in centimeters; larger numbers are better.



### Barley

- Plump: Percent plump is the percent of a sample that stayed on top of a 5.5/64 screen after shaking and consists of the 6/64 and 5.5/64 percentages combined. Both screen percentages are included in the report for increased precision.

- Thins: the percent of a sample that passed through a 5.5/64 screen after shaking.

### Statistical Interpretation

Most tables have a least significant difference (LSD) statistic at the bottom of the table. This statistic is given at the 5 percent error level and is an aid in comparing varieties. If the measured values of any two varieties within a table differ by the LSD value or more, they may be considered different with a confidence level of 95 percent. If the measured values are less than the LSD value, the differences may be due to random error rather than real differences. Coefficient of variation (CV percent) statistic is a general measurement of the precision of each experiment. Lower CV values indicate less experimental variation and greater precision. Most tables that do not have the LSD and CV statistic are averages over locations or years where specific statistical analyses were not run on the combined data or are from data obtained from only one replication or are a composite sample of all replications (e.g. quality data). Most tables from individual locations also contain yield data from two previous years. The average, LSD, and CV for these data represent the original data set, not just the selected varieties presented in these tables. The Pr>F value shows the validity of the LSD value above it; if the Pr>F value is equal to or greater than .05, then the LSD value is void. This does not mean there are not differences between the varieties in a category with a void LSD, it simply means differences cannot be determined at the 95% confidence level we set.

### Varieties Tested

A list of released varieties tested in 2009-2010 is given in Table 1. Included in this table are seed size, number of seeds per pound, and the adjusted seeding rate. Information is also given on the year of

release and the releasing agency or company. A short description of new varieties is given in Table 2. Additional information is available from the releasing agency or company.

Seasonal average measurements of several plant growth characteristics from the variety trials are shown in Table 3 for the time period of 2000-2010.

# Southcentral & Southeast Idaho Cereal Variety Trial Locations



# Location Descriptions

## Kimberly Winter Irrigated:

**Kimberly Research & Extension Center  
3825 N. 3600 E. Kimberly, ID**

**Coordinates:** 42° 33' 18.37" N., 114° 20' 28.31" W.  
**Elevation:** 3900 ft.  
**Soil Type:** #10 Bahem silt loam 1-4% slopes.  
**Twin Falls County Soil Type Acreage:** 24,748  
**County Soil Type Percentage:** 1.6%  
**Previous Crop:** Dry Beans  
**Planting Date:** October 9, 2009  
**Harvest Date:** August 10, 2010  
**Chemicals applied:** 1 pt/A Bronate Advanced, 2/3 pt/A Starane

### Fertility:

	Organic matter	pH	Free Lime %	Hard winter wheat N#/A	Soft white winter wheat & winter barley N #/A	P	K	S
12" soil test results (N & S= 0-24")	1.4	7.7	9.5	151	151	20 ppm	195 ppm	26 ppm
Fertilizer applied (#/A)				40				
Total	1.4	7.7	9.5	191	151	20 ppm	195 ppm	26 ppm

## Rupert Winter Irrigated:

**Cooperator: Jentsch-Kearl Farms  
Located at approximately 50 N 200E Rupert, Idaho**

**Coordinates:** 42° 37' 39.78" N., 113° 37' 42.26" W.  
**Elevation:** 4160 ft.  
**Soil Type:** #13 Eoyote fine sandy loam 0-2% slopes  
**Minidoka County Soil Type acreage:** 3,979  
**County Soil Type Percentage:** 1.2%  
**Previous Crop:** Dry Beans  
**Planting Date:** October 2, 2009  
**Harvest Dates:** August 12 & 13, 2010  
**Chemicals applied:** 12 oz/A MCPA , 3 oz/A Sterling Blue

### Fertility:

	Organic Matter	pH	Free Lime %	Hard winter wheat N#/A	Soft white winter wheat & winter barley N #/A	P	K	S
12" soil test results (N & S= 0-24")	1.2	7.3	<1.0	33	33	52 ppm	197 ppm	25 ppm
Fertilizer applied (#/A)				245	205			
Total	1.2	7.3	<1.0	278	238	52 ppm	197 ppm	25 ppm

# Location Descriptions

## Aberdeen Winter Irrigated:

**Aberdeen Research & Extension Center  
1693 S. 2700 W. Aberdeen, ID**

**Coordinates:** 42° 57' 47.23" N., 112° 49' 9.31" W.  
**Elevation:** 4400 ft.  
**Soil Type:** DcA Declo Fine Sandy Loam, 0-2% slopes  
**Bingham County Soil Type Acreage:** 3,020  
**County Soil Type Percentage:** 0.3%  
**Previous Crop:** green manure oats  
**Planting Date:** September 16, 2009  
**Harvest Dates:** August 16-18, 2010  
**Chemicals applied:** 1 pt/A Maestro MA, 2/3 pt/A Starane  
**Fertility:**

	Organic Matter	pH	Free Lime %	Hard winter wheat N#/A	Soft white winter wheat & winter barley N #/A	P	K	S
12" soil test results (N & S= 0-24")	1.3	8.3	6.7	114	114	24 ppm	195 ppm	59 ppm
Fertilizer applied (#/A)				240	200			100 #
Total	1.3	8.3	6.7	354	314	24 ppm	195 ppm	59+ ppm

## Ririe Winter Dryland:

**Cooperator: Dave Cook**

**Approximately 2 miles south of Ririe Reservoir Dam on Meadow Cr. Rd. Ririe, ID**

**Coordinates:** 43° 33' 51.77"N., 111° 43' 27.68" W.  
**Elevation:** 5500 ft.  
**Soil Type:** #42 Ririe silt loam, 4-12% slopes  
**Bonneville County Soil Type Acreage:** 74,713  
**County Soil Type Percentage:** 11.4%  
**Previous Crop:** Wheat  
**Planting Date:** October 8, 2009  
**Harvest Date:** September 3, 2010  
**Chemicals applied:** 16 oz/A Goldsky, 10.4 oz/A Salvo  
**Fertility:**

	Organic Matter	pH	Free Lime %	Hard winter wheat N#/A	Soft white winter wheat & winter barley N #/A	P	K	S
12" soil test results (N & S= 0-24")	1.2	8.0	4.3	69	69	13 ppm	295 ppm	15 ppm
Fertilizer applied (#/A)				6	6	30 #		
Total	1.2	8.0	4.3	75	75	13+ppm	295 ppm	15 ppm

# Location Descriptions

## Rockland Winter Dryland:

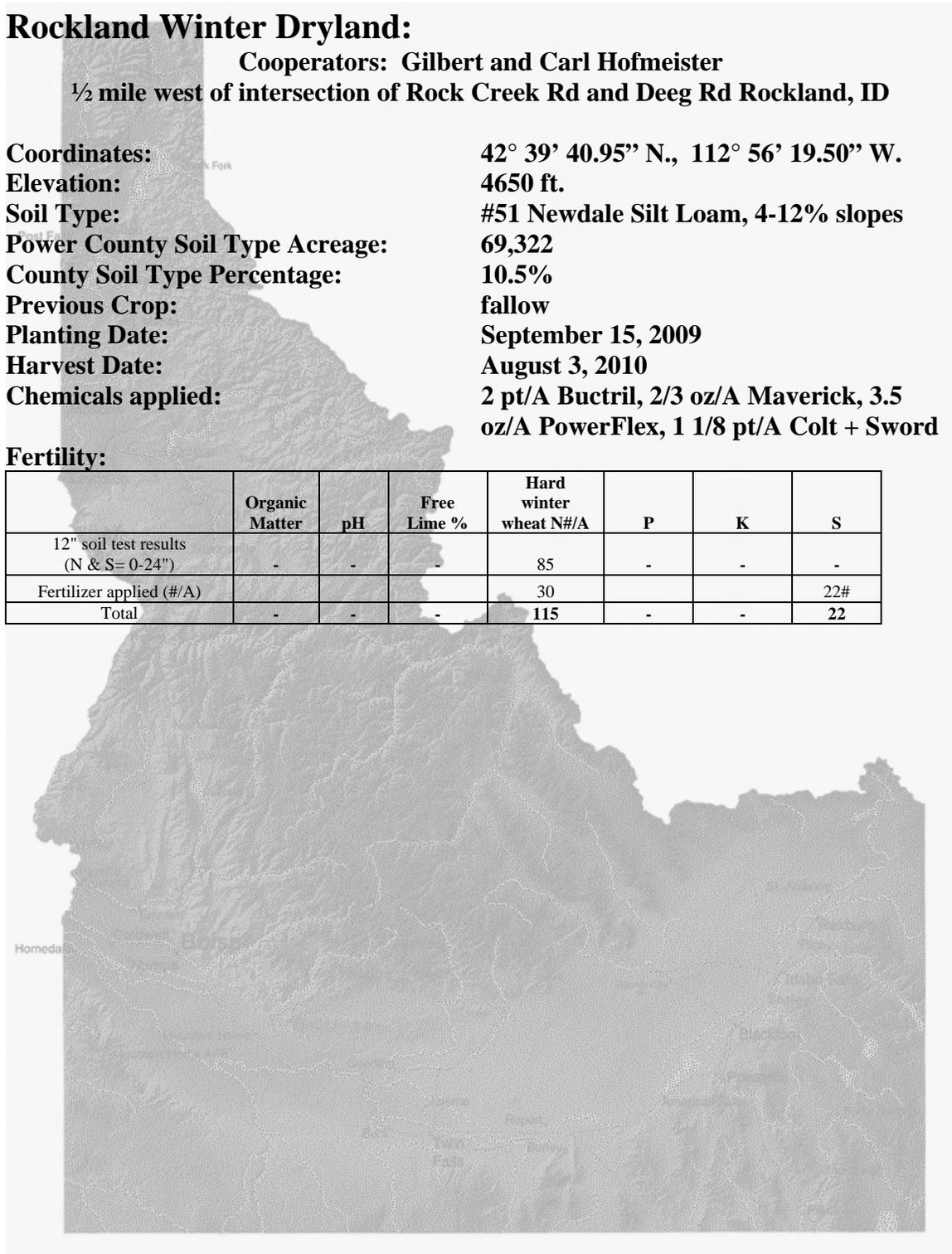
**Cooperators: Gilbert and Carl Hofmeister**

**½ mile west of intersection of Rock Creek Rd and Deeg Rd Rockland, ID**

<b>Coordinates:</b>	<b>42° 39' 40.95" N., 112° 56' 19.50" W.</b>
<b>Elevation:</b>	<b>4650 ft.</b>
<b>Soil Type:</b>	<b>#51 Newdale Silt Loam, 4-12% slopes</b>
<b>Power County Soil Type Acreage:</b>	<b>69,322</b>
<b>County Soil Type Percentage:</b>	<b>10.5%</b>
<b>Previous Crop:</b>	<b>fallow</b>
<b>Planting Date:</b>	<b>September 15, 2009</b>
<b>Harvest Date:</b>	<b>August 3, 2010</b>
<b>Chemicals applied:</b>	<b>2 pt/A Buctril, 2/3 oz/A Maverick, 3.5 oz/A PowerFlex, 1 1/8 pt/A Colt + Sword</b>

### Fertility:

	Organic Matter	pH	Free Lime %	Hard winter wheat N#/A	P	K	S
12" soil test results (N & S= 0-24")	-	-	-	85	-	-	-
Fertilizer applied (#/A)				30			22#
Total	-	-	-	115	-	-	22



# Location Descriptions

## Rupert Spring Irrigated:

Cooperator: Duane Grant  
Approximately 1050 N. 500 E., Rupert, ID

Coordinates: 42° 46' 19.00" N., 113° 34' 14.20" W.  
Elevation: 4250 ft.  
Soil Type: #36 Sluka silt loam 1-4% slopes  
Minidoka County Soil Type Acreage: 35,802  
County Soil Type Percentage: 11.1%  
Previous Crop: Sugar Beets  
Planting Date: April 9, 2010  
Harvest Dates: August 20 & 23, 2010  
Chemicals applied: 1 pt/A Maestro MA,  
2/3 pt/A Starane, 9 oz/A Achieve Liquid

### Fertility:

	Organic Matter	pH	Free Lime %	Hard Spring wheat N#/A	Soft white spring wheat & spring barley N #/A	P	K	S
12" soil test results (N & S= 0-24")	1.6	8.2	14.7	61	61	37 ppm	135 ppm	48 ppm
Fertilizer applied (#/A)				130	90		30#	30#
Total	1.4	8.1	3.8	194	151	37 ppm	135+ppm	48+ppm

## Aberdeen Spring Irrigated:

Aberdeen Research & Extension Center  
1693 S. 2700 W. Aberdeen, ID

Coordinates: 42 ° 57' 47.23" N., 112° 49' 9.31" W.  
Elevation: 4400 ft.  
Soil Type: DcA Declo fine sandy loam, 0-2% slopes  
Bingham County Soil Type acreage: 3,020  
County Soil Type Percentage: 0.3%  
Previous Crop: Green manure oats  
Planting Date: April 8, 2010  
Harvest Date: August 25-27, 2010  
Chemicals applied: 1 pt/A Maestro MA, 2/3 pt/A Starane

### Fertility:

	Organic Matter	pH	Free Lime %	Hard Spring wheat N#/A	Soft white spring wheat & spring barley N #/A	P	K	S
12" soil test results (N & S= 0-24")	1.1	8.0	9.1	147	147	26 ppm	225 ppm	59 ppm
Fertilizer applied (#/A)				150	110			100#
Total	1.1	8.0	9.1	297	257	22 ppm	225 ppm	59+ppm

# Location Descriptions

## Idaho Falls Spring Irrigated:

Cooperator: Marc Thiel  
Approximately 2500 S. 45<sup>th</sup> W. Idaho Falls, ID

**Coordinates:** 43° 28' 33.15" N., 112° 07' 14.93" W.  
**Elevation:** 4690 ft.  
**Soil Type:** #22 Pancheri silt loam, 0-2% slopes  
**Bonneville County Soil Type Acreage:** 25,605  
**County Soil Type Percentage:** 3.9%  
**Previous Crop:** potatoes  
**Planting Date:** April 16, 2010  
**Harvest Date:** September 1, 2010  
**Chemicals applied:** 1 pt/A Maestro MA, 2/3pt/A Starane, 9 oz/A Achieve Liquid

### Fertility:

	Organic Matter	pH	Free Lime %	Hard Spring wheat N#/A	Soft white spring wheat & spring barley N #/A	P	K	S
12" soil test results (N & S= 0-24")	1.7	8.0	9.5	187	187	29 ppm	190 ppm	62 ppm
Fertilizer applied (#/A)				40	0			
Total	1.7	8.0	9.5	227	187	29 ppm	190 ppm	62 ppm

## Ashton Spring Irrigated:

Cooperator: Don Marotz

1/10 mile south of the intersection of Cave Falls Highway (1400 N) and 4200 E on 4200 E. road Ashton, ID

**Coordinates:** 44° 04' 53.96" N., 111° 19' 8.16" W.  
**Elevation:** 5620 ft.  
**Soil Type:** #92 Rin silt loam, 1-4% slopes  
**Fremont County Soil Type Acreage:** 6,879 acres  
**County Soil Type Percentage:** 1.1%  
**Previous Crop:** wheat  
**Planting Date:** May 17, 2010  
**Harvest Date:** September 27 & 30, 2010  
**Chemical applied:** 1 pt Maestro MA, 9oz Achieve Liquid, 2/3 pt/A Starane

### Fertility:

	Organic Matter	pH	Free Lime %	Hard Spring wheat N#/A	Soft white spring wheat & spring barley N #/A	P	K	S
12" soil test results (N & S= 0-24")	2.8	5.6	<1.0	36	36	22 ppm	188 ppm	18 ppm
Fertilizer applied (#/A)				120	80			20#
Total	2.8	5.6	<1.0	156	116	22 ppm	188 ppm	18+ppm

# Location Descriptions

## Soda Springs Spring Dryland:

Cooperator: Scott Brown

2.5 miles east of Highway 34 on Blackfoot River Road Soda Springs, ID

Coordinates:

42° 49' 40.83" N., 111° 30' 12.44" W.

Elevation:

6350 ft.

Soil Type:

485BB Foundam-Kackley complex 1-8% slopes

Caribou County Soil Type Acreage:

Information not available

County Soil Type Percentage:

Information not available

Previous Crop:

Barley

Planting Date:

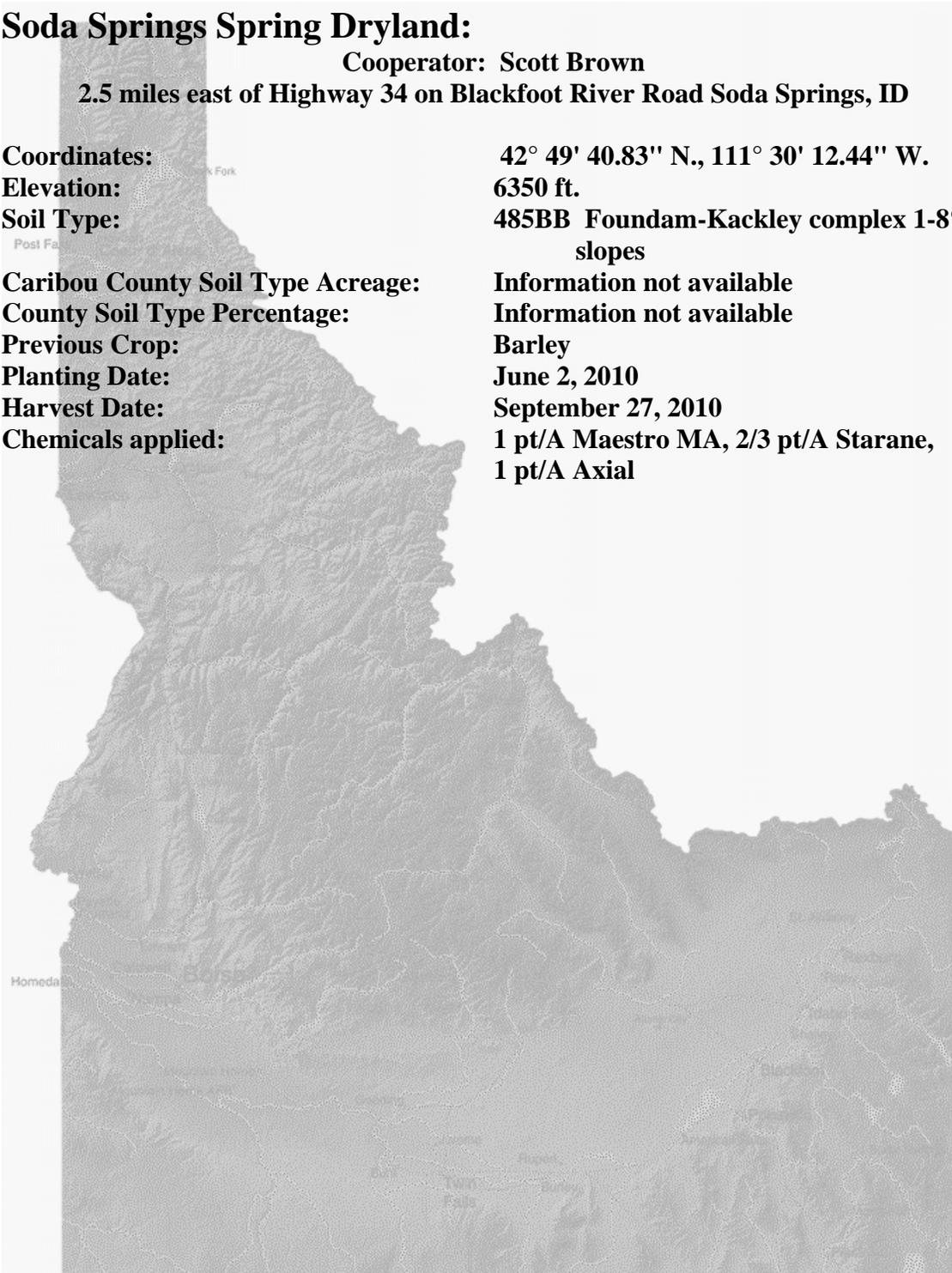
June 2, 2010

Harvest Date:

September 27, 2010

Chemicals applied:

1 pt/A Maestro MA, 2/3 pt/A Starane,  
1 pt/A Axial



**Table 1. Released varieties tested in 2009-2010 with seed size and adjusted seeding rate.**

Variety	Exp. No.	1000	Seeds	Adjusted	Year	Developer(s)/Distributor of variety
		Kernel Weight (g)	per Pound	Seeding Rate <sup>1</sup> (lb/A)		
<b>Soft White Winter Wheat</b>						
AgriPro Legion		39	11,782	85	2008	Syngenta Cereals
AgriPro Salute		51	8,982	111	2007	Syngenta Cereals
AP Badger		45	10,080	99	2009	Syngenta Cereals
AP Legacy		50	9,164	109	2009	Syngenta Cereals
Bitterroot	92-22407A	37	12,427	80	2007	Idaho AES, USDA
Bruehl (club)	WA007833	37	12,427	80	2000	Washington AES, Idaho AES, USDA
Brundage	ID86-14502B	42	10,930	91	1996	Idaho AES, USDA
Brundage 96	ID-B-96	41	11,063	90	2002	Idaho AES, USDA
Bruneau	93-64901A	39	11,631	86	2009	Idaho AES, USDA
Coda (club)	WA7752	34	13,540	74	1998	Washington and Oregon AES, USDA
Daws	WA6099	37	12,427	80	1976	Washington AES, USDA
Goetze	ORH010920	34	13,341	75	2007	Oregon State AES, USDA-ARS
Lambert	ID85-153	47	9,651	104	1993	Idaho AES, USDA
Madsen	WA7163	38	11,937	84	1988	Washington, Idaho & Oregon AES, USDA
ORCF-101	OR2010051	38	12,096	83	2003	Oregon AES, USDA
ORCF-102	OR2010007	38	11,937	84	2005	Oregon AES, USDA
Simon	ID91-34302A	42	10,930	91	2002	Idaho AES, USDA
Skiles	ORH010085	36	12,600	79	2007	Oregon AES, USDA
Stephens		38	11,937	84	1977	Oregon AES, USDA
Tubbs 06	OR939526 reselect	42	10,930	91	2002	Oregon AES, USDA
UICF Brundage	02-859	40	11,340	88	2009	Idaho AES, USDA
UICF Lambert	99-435	47	9,755	103	2008	Idaho AES, USDA
WB-Junction	BZ6W02-616	48	9,450	106	2011	WestBred / Monsanto
WB 456		44	10,428	96	2008	WestBred / Monsanto
WestBred 470		44	10,309	97	1992	WestBred / Monsanto
WB-528	BZ6W98-528	45	10,080	99	2005	WestBred / Monsanto
Xerpha	WA7973	33	13,745	73	2008	Washington AES
<b>Hard Red and White (W) Winter Wheat</b>						
AgriPro Paladin	W96-355	35	12,960	77	2005	Syngenta Cereals
Bonneville	IDO421	44	10,309	97	1993	Idaho AES, USDA
Boundary	IDO467	35	12,960	77	1996	Idaho AES, USDA
Curlew	UT9325-55	37	12,259	82	2009	Utah AES, USDA
Decade	MT0552	35	12,960	77	2010	Montana AES
Deloris	UT2030-32	43	10,549	95	2002	Utah AES, USDA
DW	ID0513	36	12,600	79	2001	Idaho AES, USDA
Eddy		40	11,340	88	2004	WestBred / Monsanto
Esperia		39	11,631	86		AllStar Seeds
Garland	UT1706-1	37	12,259	82	1992	Utah AES, USDA
Gary (W)	IDO550	39	11,631	86	2002	Idaho AES, USDA
Golden Spike (W)	UT1944-158	39	11,631	86	1999	Utah AES, USDA
Juniper	IDO 575	39	11,782	85	2005	Idaho AES, USDA
LHS	IDO835	40	11,340	88	2011	Idaho AES, USDA
Manning	UT89099	39	11,631	86	1979	Utah AES, USDA
Moreland	IDO517	35	12,960	77	2003	Idaho AES, USDA
Norwest 553		41	11,063	90	2007	Oregon State AES, USDA-ARS, Nickerson U.K.
NuHills		34	13,341	75		General Mills, Great Falls, MT
NuHorizon (W)	GM10002	36	12,600	79	2001	General Mills, Great Falls, MT
Promontory	UT1567-51	38	11,937	84	1990	Utah AES, USDA
UI Darwin (W)	IDO604	44	10,428	96	2005	Idaho AES, USDA
UI Silver (W)	IDO658	30	15,120	66	2009	Idaho AES, USDA
UICF Grace (W)	IDO651	40	11,340	88	2009	Idaho AES, USDA
Utah 100	UT1650-150	39	11,631	86	1997	Utah AES, USDA
WB-Arrowhead	ML9W05-2501	45	10,080	99	2011	WestBred / Monsanto
Weston		49	9,257	108	1978	Idaho AES, USDA
Whetstone	W98-344	32	14,175	71	2009	Syngenta Cereals
Yellowstone	MT00159	42	10,800	93	2005	Montana State University

<sup>1</sup>Adjusted to plant 1 million seeds per acre under irrigation according to the number of seeds per pound for each variety.

**Table 1 (cont'd). Released varieties tested in 2009-2010 with seed size and adjusted seeding rate.**

Variety	Exp. No.	1000 Kernel Weight (g)	Seeds per Pound	Adjusted Seeding Rate <sup>1</sup> (lb/A)	Released	Developer(s)/Distributor of variety
<b>Soft White Spring Wheat</b>						
Alpowa	WA7677	38	11,937	84	1993	Washington, Oregon, & Idaho AES, USDA
Alturas	IDO526	37	12,259	82	2002	Idaho AES, USDA
Babe	WA008039	41	11,063	90	2009	Washington AES, USDA
Cataldo	IDO642	38	11,937	84	2007	Idaho AES, USDA
Diva	WA008090	44	10,309	97	2010	Washington AES, USDA
JD	WA007954	46	9,861	101	2009	Washington AES, USDA
Nick	BZ698-31	36	12,777	78	2000	WestBred / Monsanto
Penawawa		37	12,259	82	1985	Washington AES, USDA
UI Pettit	IDO632	36	12,600	79	2006	Idaho AES, USDA
UI Whitmore	IDO671	33	13,745	73	2010	Idaho AES, USDA
Whit	WA008008	40	11,484	87	2008	Washington AES, USDA-ARS
<b>Hard Red Spring</b>						
Bullseye	B02-0081	39	11,782	85	2009	Syngenta Cereals
Cabernet		42	10,930	91	2007	Syngenta Cereals
Choteau		37	12,427	80	2005	Montana State University
Iona	IDO492	40	11,340	88	1999	Idaho AES, USDA
Jefferson	IDO462	41	11,063	90	1998	Idaho AES, USDA
Jerome	IDO 566	43	10,549	95	2004	Idaho AES, USDA
Kelse	WA007954	43	10,549	95	2008	Washington AES, USDA
Malbec	RSI50603	48	9,450	106	2009	Syngenta Cereals
Tara 2002	WA7824	43	10,549	95	2001	Washington AES, USDA
UI Winchester	IDO578	43	10,673	94	2009	Idaho AES, USDA
Volt		37	12,259	82	2007	WestBred / Monsanto
WestBred 936	PH986-61	42	10,930	91	1992	WestBred / Monsanto
WB-Fuzion	BZ901-717	47	9,651	104	2010	WestBred / Monsanto
<b>Hard White Spring Wheat</b>						
Blanca Grande		43	10,673	94	2002	General Mills, Great Falls, MT
Klasic		44	10,309	97	1982	Northrup-King Co., Minneapolis, MN
Lochsa	IDO 597	44	10,309	97	2005	Idaho AES, USDA
Lolo	IDO533	45	10,193	98	2000	Idaho AES, USDA
Otis	WA7931	41	11,200	89	2002	Washington AES, USDA
Pristine	BZ991-408	47	9,651	104	1999	WestBred / Monsanto
Snow Crest		42	10,800	93	2004	WestBred / Monsanto
WB-Idamax	BZ904-336 WP	46	9,861	101	2010	WestBred / Monsanto
WB-Paloma	BZ904-331WP	44	10,309	97	2010	WestBred / Monsanto
<b>Spring Durum Wheat</b>						
Alzada		49	9,353	107	2004	WestBred / Monsanto
Kronos		48	9,450	106	1996	Arizona Plant Breeders
Matt		42	10,800	93	2000	Simplot Agrisource, Burley, Idaho
Utopia		42	10,930	91	1997	World Wide Wheat, L.L.C.
<b>Winter Barley</b>						
Alba	OR77	35	13,148	76	2010	Oregon AES, USDA
Charles	94Ab1274	44	10,309	97	2005	USDA-ARS, Aberdeen
Eight-twelve	79Ab812	38	12,096	83	1988	Idaho AES, USDA
Endeavor	95Ab2299	40	11,340	88	2008	Idaho AES, USDA
Kamiak		42	10,800	93		
Kold		37	12,259	82	2010	Oregon AES, USDA
Maja	OR81	31	14,872	67	2009	Oregon AES, USDA
Mathias	OR76	34	13,540	74	2009	Oregon AES, USDA
Schuyler		35	13,148	76	1969	Cornell AES, USDA
Sprinter		35	13,148	76	1987	WestBred / Monsanto
Strider	ORW6	41	11,063	90	1998	Oregon AES, USDA
Sunstar Pride	SDM204-B	34	13,540	74	1995	Sunderman Breeding, Twin Falls, ID

<sup>1</sup>Adjusted to plant 1 million seeds per acre under irrigation according to the number of seeds per pound for each variety.

**Table 1 (cont'd). Released varieties tested in 2009-2010 with seed size and adjusted seeding rate.**

Usage:	Variety	Exp. No.	1000 Kernel Weight (g)	Seeds per Pound	Adjusted Seeding Rate <sup>1</sup> (lb/A)	Year Released	Developer(s)/Distributor of variety
<b>feed/malt</b>	<b>Two-Row Spring Barley</b>						
m	B1202		42	10,930	73		Busch Agricultural Resources, Inc., Ft. Collins, CO
f	Baronesse	NS078054	37	12,427	64	1992	WestBred / Monsanto
f	Burton	98ID251	43	10,549	76	2004	Idaho AES, USDA
f	Camas	ND9147	45	10,080	79	1998	Idaho AES, USDA
f	Champion		48	9,549	84	2007	WestBred / Monsanto
f	Clearwater	01ID435H	36	12,600	63	2007	Idaho AES, USDA
m	Conrad	B5057	37	12,427	64	2004	Busch Agricultural Resources, Inc., Ft. Collins, CO
m	Copeland		43	10,673	75	1999	University of Saskatchewan, Great Western Malting
m	Craft		46	9,969	80	2006	Montana AES
m	Geraldine		42	10,800	74	2007	Montana AES
m	Harrington		39	11,782	68	1984	University of Saskatchewan
f	Haxby	MT950186	45	10,080	79	2002	Montana AES
f	Hayes		36	12,777	63	2004	Montana AES
m	Hockett	MT910189	44	10,428	77	2007	Montana AES
f	Idagold II		41	11,200	71		Coors Brewing Co. Inc., Burley, ID
food	Julie	03AH6561-94	46	9,969	80	2010	Idaho AES, USDA
f	Karma	MT080100	35	13,148	61	2010	Montana AES
f	Lenetah	01Ab11107	43	10,549	76	2008	Idaho AES, USDA
m	Merit	2B91-4947	41	11,063	72	1997	Busch Agricultural Resources, Inc., Ft. Collins, CO
m	Merit 57		45	10,080	79		Busch Agricultural Resources, Inc., Ft. Collins, CO
m	Moravian 69	C69	36	12,600	63	2005	Coors Brewing Co. Inc., Burley, ID
m	Moravian 115	C115	46	9,861	81	2010	Coors Brewing Co. Inc., Burley, ID
m	Moravian 137	C137	46	9,969	80	2010	Coors Brewing Co. Inc., Burley, ID
m	Pinnacle	2ND21863	49	9,353	86	2007	North Dakota AES, USDA
f	Primo	B-99-AL-616	40	11,484	70	2008	Agripro
f	Spaulding	PB1-95-2R-522	43	10,549	76	2006	Plant Breeders 1 Inc., Moscow, Idaho
f	Tetonia	98AB11720	40	11,484	70	2007	Idaho AES, USDA
food	Transit	03AH3054-51	46	9,969	80	2010	Idaho AES, USDA
f	Xena	BZ594-19	42	10,930	73	2000	WestBred / Monsanto
	<b>Six-Row Spring Barley</b>						
f	Aquila	UT95B1480-1632	39	11,782	68	2005	Utah AES, USDA
m	Celebration		34	13,540	59	2008	Busch Agricultural Resources, Inc., Ft. Collins, CO
f	Colter	79Ab10719-66LC	37	12,427	64	1991	Idaho AES, USDA
f	Creeel	93Ab688	35	13,148	61	2002	Idaho AES, USDA
f	Goldeneye	UT95B1216-4087	36	12,777	63	2005	Utah AES, USDA
f	Herald	00ID1550	35	12,960	62	2006	Idaho AES, USDA
m	Lacey	M98	39	11,631	69	2000	Minnesota AES, USDA
m	Legacy	6B93-2978	33	13,745	58	1998	Busch Agricultural Resources, Inc., Ft. Collins, CO
f	Millennium	UT004603	37	12,427	64	2000	Utah AES, USDA
m	Morex		37	12,259	65	1978	Minnesota AES, USDA
f	Steptoe		38	12,096	66	1973	Washington AES, USDA
m	Tradition		37	12,427	64	2003	Busch Agricultural Resources, Inc., Ft. Collins, CO

<sup>1</sup>Adjusted to plant 1 million seeds per acre under irrigation according to the number of seeds per pound for each variety.

# Results and Discussion

## Planting conditions

The fall of 2009 provided good conditions for planting winter grain. Pre- or post-planting irrigation was required for irrigated trials to adequately germinate and grow. The dryland planting conditions were dry, but there was adequate moisture for stand establishment. Going into and through the winter, precipitation was below average, and reservoirs were low heading into the spring growing season.

Spring planting conditions were also generally good to excellent, but a long cold, wet spring resulted in some planting delays at the higher elevations.

## Weather Conditions

A dry fall in October and November was followed by a dry winter. Temperatures were not consistent, resulting in winter kill in some winter wheat (mainly dryland areas) and winter barley throughout the region.

Cool, wet spring conditions resulted in disease of spring planted grains, especially damping-off from Pythium infection. An unusually cool spring and summer set up wonderful conditions for spring growth and high yield potential, but a dry June and July reduced yield under dryland production areas. These same conditions resulted in inadequate heat units to promote crop maturity and drying of grain to levels appropriate for harvest. In some areas, higher than

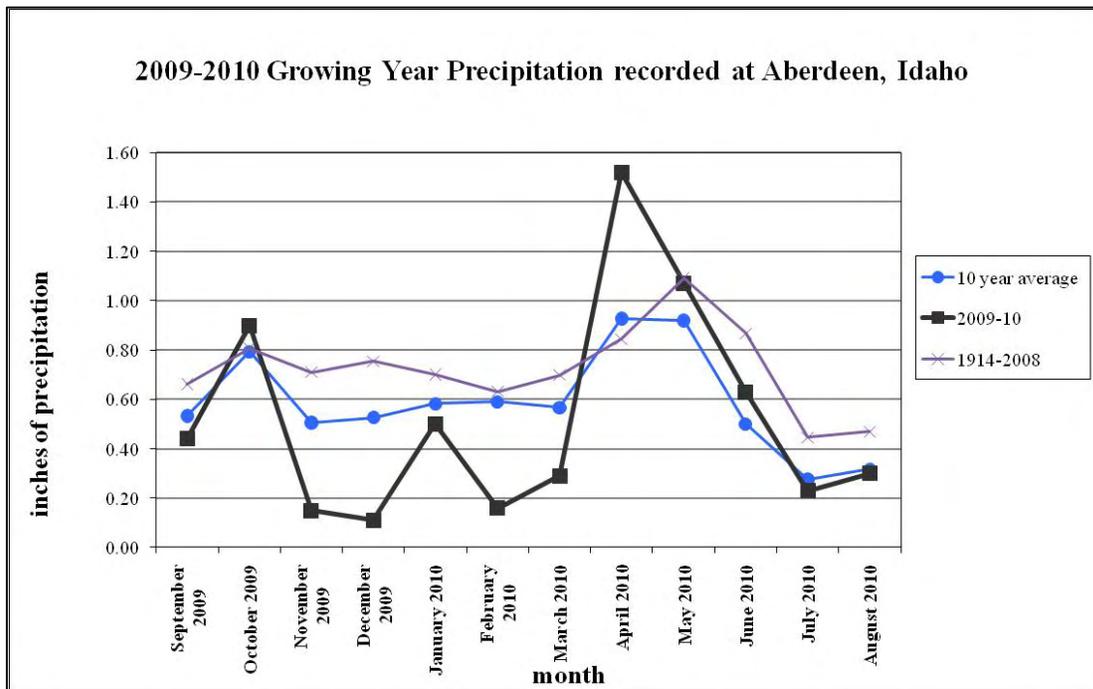


Chart 1. 2009-2010 growing year precipitation versus 10 year and 94 year averages.

normal spring moisture meant unexpectedly high yield potentials and resulted in low grain protein, especially in the spring grains. Dryland producers had a difficult time meeting nitrogen requirements as almost all nitrogen is applied preplant or at planting, with few efficient options available for in-season nitrogen applications.

A cool summer allowed for long time periods for grain fill, but also delayed grain maturity, delaying harvest for a week or more, depending upon location. High grain moisture also plagued harvest.

Other weather conditions that impacted grain yields included many locally severe hail storms and high winds just prior to crop maturity and harvest. Both hail storms and high winds induced severe grain shattering, reducing harvestable yield. Shattered grain germinated prior to complete drying of the current season's crop, resulting in a green bridge between crop years. (See "Green Bridge" below for a discussion on the implication for disease development in the 2010-2011 growing season.)

### **Disease and Insect Problems**

**Wireworms** were very damaging in many areas across the entire region, reducing stand and yield. Wireworms were prevalent in some areas in plant crowns throughout the entire spring and into July, probably due to cooler than average temperatures. Similar to last year, as many as five wireworms *per plant* were observed in some fields. Insecticides applied as seed treatments slightly reduced but did not control

wireworms and the resultant feeding damage.

Environmental conditions were optimal for the development of **stripe rust** in wheat and barley, but the disease did not develop until very late in the growing season. Stripe rust causing fungi rarely overwinter in southeast Idaho and disease development requires that inoculum (in this case, spores) be blown in from Washington, Oregon or California. The very late development of stripe rust meant that fungicides were not required to protect spring wheat from yield loss. However, growers may find the protective benefit worth the cost to apply fungicides at the latest applicable window to protect susceptible varieties. Little to no yield loss due to stripe rust was observed in foliar fungicide trials in Aberdeen. Very late outbreaks of stripe rust were substantial in WestBred 936 and were present in low levels in a few other varieties.

**Barley scald** affected some winter barley in the Magic Valley, but nowhere near the damaging levels of the previous year. Barley scald affected spring barley in southeast Idaho, and while visually significant, did not cause large yield losses. In most years, low levels of early season scald infection do little to affect the barley crop and yield, and can be ignored. The past two years were not by any means typical years, and scald ran rampant in fields in 2009 where application of fungicides would have prevented significant crop loss. In 2010, while the disease was again present in many fields, losses were minimal, probably due to reduced rainfall over the previous year. This will be a disease to watch in future years, especially as production of winter barley increases.

**Fusarium foot rot** and **take-all** were prevalent in areas where grain followed grain and where irrigation was not reduced to compensate for additional spring rains. A significant problem last year, **Fusarium head blight** did not reduce yields or contaminate grain with toxins. While found at low levels in a few fields, the causal organism was *Fusarium culmorum* and not the more aggressive *Fusarium graminearum* that often follows corn production. This disease was especially severe where spring wheat followed corn in 2009, as the fungus reproduces extensively on corn residue. It is highly recommended that irrigated spring wheat be treated with an appropriate fungicide at flowering to reduce infection, especially when a hard white spring wheat follows corn production. It is essential that a **triazole** fungicide be utilized, as strobilurin fungicides are ineffective in reducing the accumulation of toxins (i.e. deoxynivalenol or DON) that are a by-product of the fungal infection process.

**Pythium damping-off** occurred in many spring crops due to cold wet conditions at planting. This resulted in reduced root systems, reduced stand and stunted plants. Metalaxyl-based fungicides will control and/or reduce infection and symptom development, but in some cases seed treatments were not completely effective in controlling or reducing disease development.

There were no reports of damage from **Russian wheat aphid** or the **Haanchen barley mealy bug** (University of Idaho CIS 1109). While the barley mealybug was present in the same dryland production areas found in the past, environmental conditions were optimal

for plant growth and resulted in reduced visible damage in wheat and barley crops.

#### **Green Bridge, 2010 to 2011.**

A “green bridge” is generally defined as the overlap of different cropping cycles (or crop generations) within a year. This means there is a constant availability of living, green host material of a given crop. This occurred in many locations in southern and southeast Idaho for several reasons: 1) late maturing tillers of winter wheat stayed green and growing even after harvest; 2) windy conditions caused shattering of spring grains prior to complete maturity of the crop; 3) hail storms induced shattering of grains prior to crop maturity. Shattered grain germinated and grew, even prior to harvest of the current year’s crop. All three situations result in the continuous presence of living host material, which means there is a constant supply of food for disease-causing organisms and insects. This increases the likelihood and risks of higher disease and insect problems for the next growing season. Because of the green bridge, aphids can jump to the emerging (2010-2011) winter crop, causing direct damage and / or transmitting viruses. Foot rot diseases within a field migrate from the dying spring crop to the growing winter crop. Foliar diseases can easily infect the emerging crop within the same field, or can become airborne through the production of spores that then infect crops up to many miles away.

In the Fall of 2010, Russian Wheat aphids were found causing damage in winter wheat in fields from the Arbon Valley to east of Ririe. Also a potential concern was the presence of stripe rust in winter grain variety trials at the

University of Idaho's Aberdeen Research station. Stripe rust was found in many varieties of both soft white winter and hard winter wheat. While stripe rust requires living host tissue to survive the winter, the fact that substantial snow fall occurred prior to the ground freezing means that the insulating effect of snow cover may allow both the green tissue of the plants and the infecting fungi to survive cold winter air temperatures. The stripe rust fungi can survive to temperatures as low as 23°F. Producers should be actively scouting grain fields in the early spring for potential insect and disease problems.

#### **Kimberly Research and Extension Center, Winter Grain**

The winter wheat nurseries were planted Oct 9 following dry beans. Soils were dry and plots were irrigated after planting to improve emergence. The crop suffered no winter damage and growing conditions were good to excellent. Plots were harvested August 10.

The hard winter wheat group yielded from 112 to 162 bu/A. Golden Spike, a hard white wheat from the Utah AES, was the highest yielding variety. LHS and UI Silver (both hard white) yielded 158 and 150, respectively, and Utah 100 yielded 148 bu/A. Site average for yield of the hard winter group was 137 bu/A. Test weight average was 64 lbs/bu, and grain protein average for the location was very low, at 10.4%. **Averaged over all locations**, the highest yielding hard winter wheat varieties in 2010 were Utah 100 (144 bu/A), ACS 55017 (144 bu/A), Norwest 553 (139 bu/A), WB-Arrowhead (136 bu/A), and LHS (136 bu/A). **Three year averages** over all

locations put Deloris at the top with 126 bu/A followed by Utah 100, NuHorizon, Yellowstone, Whetstone and Moreland 124, 124, 124 and 122 bu/A, respectively.

In the soft white winter group, yield varied from 116 to 149 bu/A. AgriPro Legion, Bruneau, Lambert, Tubbs 06, AgriPro Salute, Bitterroot were the highest yielding varieties. Test weight averaged 60.9 lbs/bu, and grain protein average for the location was a low 7.6%. The top yielding soft white winter varieties **over the last three years** over all locations are Tubbs 06 (129 bu/A), Xerpha (128 bu/A), Brundage (127 bu/A), Bruneau (127 bu/A). Bruneau and Brundage have very good end use quality.

#### **Rupert, Jentschz-Kearl Farms, Winter Grain**

Plots were planted Oct 2 following dry beans. Some winter injury occurred in Rupert in the winter barley, but not in any of the winter wheat. Plots were harvested August 12 and 13<sup>th</sup>.

Average yield for the winter barley varieties was 143 bu/A, and varied from 92.6 to 174 bu/A. The highest yielding named varieties included Alba (170 bu/A), Kamiak (166 bu/A), Eight-Twelve (164 bu/A) and Schuyler (162 bu/A). Proteins were low (8.9%) and lodging averaged 6%. Charles, Endeavor, Maja, and Alba, four winter malt varieties, yielded 104, 93, 156 and 170 bu/A, respectively. Charles and Endeavor had reduced stands (30 and 21%, respectively) due to winter injury.

There was no winter injury in the soft or hard winter wheat plots. Average yields for the hard winter wheat trial were 106

bu/A, 31 bushels less than Kimberly. Yield ranged from 83 (Manning) to 139 bu/A (ACS 55017). Test weight was low, averaging 58.5 lbs/bu, and protein averaged 14.2%. Utah 100, Deloris, WB Arrowhead, and Norwest 553 were the highest yielding named lines at 135, 126, 126, and 121 bu/A, respectively.

The soft white winter group yielded from 116 to 149 bu/A. The highest yielding varieties were Brundage (142 bu/A), AP Badger (136 bu/A), and WB 456 (132 bu/A). Test weights were low (55.1 lbs/bu) and grain protein was high for the soft wheat class at 13.5%, possibly indicating water shortage during grain fill.

#### **Aberdeen R&E Center, Winter Grain**

The winter trial in Aberdeen were planted September 16, and harvested August 16-18. The preceding crop was green manure oats. The winter barley at Aberdeen was only slightly damaged by the winter conditions this year, and average spring stands were at 80%. Charles and Endeavor, two-rowed winter malt lines, had better spring stands in Aberdeen than at Rupert, resulting in significantly higher yields. Yields were as high as 202 bu/A with an overall average of 158 bu/A. High yielding feed varieties included Strider (182 bu/A), Sunstar Pride (172 bu/A) and Maja (172 bu/A). Charles, Endeavor, Maja, and Alba, four winter malt varieties, yielded 143, 155, 172 and 133 bu/A, respectively.

The winter wheat survival fared much better. Average spring stand for the hard winter wheat nursery was 95%, and for the soft white winter group, spring stand was 94%. The hard winter wheat yields varied from 97 (Bonneville) to 163 bu/A

(Norwest 553), with the average at 126 bu/A. Yields were 11 bu/A higher than last year's average and protein was good at an average of 13.5%. However, lodging was high averaging at 68%, yet Norwest 553 was the highest yielding variety and had no lodging. Utah 100 (148 bu/A), WB-Arrowhead (147 bu/A), ACS 55017 (146 bu/A), Garland (146 bu/A) and Yellowstone (145 bu/A) were the top yielding varieties with lodging at 58, 38, 58, 51, 50 and 56%, respectively.

The soft white winter wheat yields varied from 125 (Stephens) to 156 bu/A (Skiles), averaging 140 bu/A, 18 bu/A higher than last year; however, lodging was high, averaging 50%, while in 2009 average lodging was at 1%. Average proteins were high for this soft group at 12.1%. The top yielding varieties were Skiles (156 bu/A), ORCF-101 (156 bu/A), and AP Badger (153 bu/A), with AgriPro Salute, Brundage and WestBred 470 all averaging 146 bu/A. Grain protein of the higher yielding varieties were in the acceptable range, with protein noticeably increasing as yield decreased (Table 29).

#### **Ririe, LDS Church Farm, Dave Cook, Winter Grain**

This location is our main dryland location for winter grain. This is a high elevation location (5500 ft) for winter grain. We usually plant only one rep of winter barley here to roughly test for winter survival, which was minimal in 2010 and therefore results are not reported. Planting occurred late for this location, Oct 8, and the trials were harvested September 3.

The hard winter wheat group had reduced average yields (27.6 bu/A) in comparison to 2009 at 47 bu/A.

Exceptional spring and summer moisture pushed 2009 yields above expected for dryland conditions. The 2010 yield range went from a low of 18 bu/A to a high of 35 bu/A. Bonneville, LHS, WB-Arrowhead, UICF Grace, ACS 55017, Deloris and Yellowstone were the top yielding hard winter wheat varieties, at 35, 35, and 33, 33, 33, 32, 32, and 31 bu/A, respectively. Dryland yields **averaged over all locations and 3 years** averaged 39 bu/A, with the top yielding varieties including Deloris, Yellowstone, Utah 100, Golden Spike and Curlew (45, 42, 42, 41, and 41 bu/A, respectively).

The soft white winter wheat yields varied from 17 bu/A (WB-Junction) to 33 bu/A (Coda), with the site averaging 25 bu/A. Average proteins were acceptable for this soft group at 10.6%. There was no lodging. In addition to Coda, the top-yielders were Stephens (31 bu/A), AP Badger (30 bu/A), Xerpha (30 bu/A), and UICF Brundage (30 bu/A).

Over the **past three years**, the top yielding varieties at this location were Coda, Bruehl, Xerpha, ORCF-102, Bruneau, and UICF Brundage yielding 34, 34, 33, 32, 32, 31 and 31 bu/A, respectively. Three-year averages on dryland soft white winter grain protein were 10.4% (Table 8). Test weights were 59.1 lbs/bu, and average plant height was 22 inches.

#### **Rockland, Gilbert and Carl Hofmeister, Hard Red and White Winter Wheat**

The hard red and white winter wheat trial at the Hofmeisters' was planted on September 15 and harvested August 3. The trial was planted into average moisture. Spring stand was slightly reduced to 88%. There was a substantial

difference in the 2010 yield average of 39 bu/A and the previous year's average of 91 bu/A due to the unusual amount of precipitation in June of 2009. The 2010 yield ranged from 31 to 48 bu/A. The top yielding varieties this year were Garland (48 bu/A), ACS 55017 (46 bu/A), Deloris (46 bu/A) Yellowstone (44 bu/A), and Whetstone (43 bu/A). Grain protein was low at 10.9%, but test weight average was good at 60.7 lbs/bu and there was no lodging.

#### **Rupert, Duane Grant, Spring Grain**

The variety trials in Rupert were planted April 9 and harvested August 20 and 23<sup>rd</sup>. The preceding crop was sugar beets. There were no major weather-related problems and no lodging. Average yield for hard spring wheat at Rupert was 111 bu/A, compared to 107 bu/A in 2009 and 133 bu/A in 2008. Test weight average was 63.5 lbs/bu, and average protein was low at 12%. The top yielding varieties were the hard white spring wheats Lolo (126 bu/A), WB Idamax (118 bu/A), and Otis (117 bu/A). Cabernet, Blanca Grande (white) and Jerome yielded 115, 114, and 114 bu/A, respectively. Kelse, Choteau, and WestBred 936 had the highest grain protein under nitrogen limiting conditions (14, 13.1, and 12.7% respectively).

Over **three years over all locations**, the highest yielding hard spring varieties under irrigation were Lolo (124 bu/A), Otis (119 bu/A), and Bullseye (115 bu/A). While Otis was developed for dryland conditions, lodging has been minimal under high input situations and yields consistently high. The average test weight was 62.2 lbs/bu, and the average grain protein was 11.8%.

The soft white spring wheat yield average was 116 bu/A. In 2009, the average yield at the Rupert location was 120, and in 2008 it was 144 bu/A. In 2010, Whit and Alturas yielded 120 bu/A, and UI Pettit 119 bu/A. Protein average was very low at 7.8%. **Three year averages over all locations** put Alturas at the high yield of 121 bu/A, followed by Alpowa (118 bu/A), UI Pettit (118 bu/A) and Nick (116 bu/A).

The six-row spring barley trial at Rupert yielded an average of 117 bu/A, with a range from 93 to 141 bu/A. Creel (141 bu/A), Colter (127 bu/A) and Millennium (122 bu/A) were the top yielding feed barleys, and Legacy (115 bu/A) and Lacey (111 bu/A) were the top named varieties in the six-rowed malts. Test weights averaged 51.9 lbs/bu, proteins were very low 6.9%, and percent plumps (>6/64) were high (94.5%). **Over three years**, Millennium was the highest yielding feed variety at 127 bu/A, and Lacy was the highest yielding malt variety at 112 bu/A.

Two-rowed barley yields at this location averaged 122 bu/A, and ranged from 105 to 144 bu/A. The malt variety Moravian 115 yielded 144 bu/A, followed by Moravian 137 (143 bu/A), and the feed varieties Tetonia (141 bu/A) and RWA 1758 (136 bu/A). The hullless high beta-glucan food barleys Julie, Transit and Karma yielded 111, 86, and 53 bu/A but also had high test weights (60.3, 58.8, and 58.3 lbs/bu, respectively). **Three year averages** for the malt varieties puts Conrad, Geraldine, Merit and Pinnacle at the top (127, 122, 118 and 117 bu/A, respectively), with the Moravian lines doing very well in the Magic Valley, and Conrad and Geraldine doing consistently well over all locations. The feed

varieties Xena, Spaulding, Champion, and Lenetah were the top yielding lines over three years and all irrigated locations at 139, 138, 138, and 136 bu/A, respectively.

#### **Aberdeen R&E Center, Spring Grain**

Spring variety trials were planted April 8 and harvested August 25-27<sup>th</sup>. The preceding crop was green manure oats and there were no major disease or insect problems. Stripe rust of wheat was present late in the season, but had little impact on yield. Excellent growing conditions at Aberdeen pushed average yields of hard spring wheat to 121 bu/A and 13.6% grain protein. There was some lodging. In 2009, yields were similar at 120 bu/A, and in 2008 the average yield was 97 bu/A. The 2010 yields ranged from 108 to 138 bu/A. The top three varieties for yield were Lolo, Choteau, Bullseye, Malbec, WB-Idamax and Otis at 138, 134, 129, 128, 127, and 126 bu/A, respectively. Out of the spring durums, Alzada and Utopia yielded 125 bu/A and 120 bu/A.

The soft white spring wheat yields at Aberdeen averaged 126 bu/A, with a range from 102 to 135 bu/A. Excellent yields were obtained from Babe (136 bu/A), Alpowa (134 bu/A) and Nick (132 bu/A). Test weights were 60.6 lbs/bu and grain proteins were good at 11.3%.

Six-row barley in Aberdeen averaged 128 bu/A, 25 bu/A less than in 2008, and 6 bu/A more than 2009. Yields ranged from 108 bushels (Morex) to 150 bu/A (Herald). Colter and Millennium were the other two top yielding feed barley varieties, both at 139 bu/A. For the six-row malt lines, Lacey yielded 125 bu/A, Legacy 125, Tradition at 119,

Celebration at 114, and Morex at 108 bu/A. Grain protein for the malt varieties was low, and varied from 8.1-10%.

Two-row lines averaged 119 bu/A, and ranged from 62 to 169 bu/A. The top yielding feed lines were Idagold II, Spaulding, Lenetah and Champion (169, 138, 136, 134 bu/A, respectively). For the malt varieties, Moravian 69, Copeland, B1202 and Conrad yielded 139, 125, 124 and 122 bu/A, respectively. Test weight averaged 51.3 bu/A, and lodging was high with the exception of Spaulding at 6%.

#### **Idaho Falls, Marc Thiel, Spring Grain**

The Idaho Falls location followed potatoes, was planted April 16 and harvested September 1<sup>st</sup>. Good growing conditions in Idaho Falls resulted in average grain yield for the hard spring wheat of 123 bu/A, which was less than the average in 2008 of 132 bu/A, and similar to 2009 (121 bu/A). Hard spring wheat ranged in yield from 95 – 146 bu/A. Average grain protein was low at 11.8%, but test weight was high at 62.6 lbs/bu. The three highest yielding lines were Lolo (146 bu/A), Otis (143 bu/A), and Bullseye (131 bu/A).

Advanced numbered lines topped the yield chart for the soft white spring wheat varieties at Idaho Falls, with the highest named varieties being Nick (134 bu/a), UI Pettit (133 bu/A), and Alpowa (131 bu/A). Yields ranged from 116 bu/A (Cataldo) to 138 bu/A. Test weights were good at 62.1 lbs/bu, and grain proteins were also low at 8.9%.

Barley six-rowed feed lines yielded from 97-157 bu/A in Idaho Falls, with Creel at 157 bu/A followed by Herald (139 bu/A) and Colter (137 bu/A. In the six-

row malt lines, Lacey (125 bu/A) and Legacy (124 bu/A) out-yielded Celebration and Tradition at 115 and 105 bu/A, respectively). Overall site average was 127 bu/A, 22 bushels less than 2008, but similar to the 2009 average of 129 bu/A. Test weights were 50.2 lb/bu and thins were low (3.5%).

The two-row lines at Idaho Falls averaged 129 bu/A. Of the feed lines, Spaulding averaged 151 bu/A, had 54.1 lb test weight and 97% plumps. Xena, Primo, Baronesse and Champion were right behind with 147, 142, 142, and 141 bu/A, respectively. In the malt group, the high yielders were Conrad (140 bu/A), Moravian 69 (140 bu/A), Merit (136 bu/A), and Copeland (136 bu/A). Pinnacle had very high test weight (53.3 lbs/bu), no lodging, and 99% plump. Lodging in Harrington was 56% and in Hockett 48% (both developed more for dryland conditions).

#### **Ashton, Don Marotz, Spring Grain**

The Ashton location was planted May 17 following wheat and was harvested late, September 27 and 30th. Previous problems with barley mealy bug did not re-emerge this year in the Ashton area. The average yield for the hard spring wheat was 54 bu/A, compared to 2009 at 87 bu/A and 2008 at 84 bu/A. The range in yield varied from 34 bu/A to 69 bu/A. Test weights were low at 59.5 lbs/A, and protein was very low, averaging 9.9%. The high yielding variety was the hard white spring wheat variety WB-Paloma (69 bu/A), followed by Bullseye (62.4 bu/A), Lolo (61 bu/A), Jerome (60 bu/A) and Pristine (59 bu/A). The highest proteins were seen in Choteau (11.4%), WB-Fuzion (10.7%), Lochsa (10.7%) and Pristine (10.6%). There was no

lodging in the hard spring wheat at this location.

Alturas yielded 70 bu/A in the soft white spring trials, close to Cataldo (68 bu/A) and followed by Nick (60 bu/A) and UI Pettit (59 bu/A). The average yield for the soft white spring trial was 59 bu/A, and ranged from a low of 45 bu/A (Alpowa) to a high of 71 (IDO 668). The test weight average was 58.4 lbs/A, and there was no lodging. Grain protein was very low, averaging 7.8%.

In the six-rowed barleys at Ashton, the yield average was 13 bu/A lower than the two-rowed barleys, at 49 bu/A. In the feed barleys, Creel out-yielded the others at 71 bu/A, 52 lb test weight and 96% plumps. Steptoe was the closest next variety at 59 bu/A, 50 lb test weight and 98% plumps. The malt line Legacy 49 bu/A, with 49 lb test weight and 95% plumps.

Two-row barley yields ranged from 35 to 87 bu/A. The average was 61 bu/A, with the highest feed lines being RWA 1758 (87 bu/A), Primo (83 bu/A), Baronesse (82 bu/A) and Xena (78 bu/A). Geraldine, Merit 57, Moravian 69, B1202 and Copeland were the top yielding malt varieties at 66, 64, 61, 60, and 59 bu/A, respectively. Test weights and percent plumps were high, but proteins were very low, averaging only 7.6%.

### **Soda Springs, Scott Brown, Spring Grain**

The only dryland extension trials were in Soda Springs this year and were the spring wheat nurseries. The nursery was planted late (June 2) and harvested September 27<sup>th</sup>. The previous crop was barley.

Yield averages for the hard red and white spring nursery were 32 bu/A, lower than they were in 2009 (75 bu/A), and comparable to 2008 (28 bu/A). The range in yield went from 16 to 43 bu/A (Otis). The four highest yielding named varieties Otis, Jerome, Iona, Lolo and WB-Paloma at 43, 40, 37, 36, and 36 bu/A, respectively. Test weights averaged 58 lbs/bu, and proteins were very low (10%), with the highest proteins in Choteau (12.7%) Pristine (11.5%), Kelse and WB-Fuzion (both 10.8%).

For the soft white spring wheats, the nursery averaged 38 bu/A. The yield ranged from 29 to 43 bu/A. Alturas, Cataldo, UI Pettit and Diva were the four top yielding varieties at 41, 40, 40, and 39 bu/A, respectively. Test weight was 57.9 lbs/bu, and proteins were low, even for soft whites, at 7.7%. This is a typical problem when nitrogen applied (preplant or at planting) is not even adequate for yield.

Table 2. New Variety Descriptions

**SPRING BARLEY**

**Aquila (UT95B1480-1632)** – is a six-rowed feed barley released by Utah State in 2005. Aquila has similar yields and much higher test weights than Steptoe. Aquila is early maturing with lower lodging resistance than Millennium.

**Celebration** – a six-rowed barley released in 2008 by Busch Agricultural Resources, LLC. Celebration has some resistance to Fusarium head blight and consistently lower toxin (DON) content in the grain. In the two years of testing in southern Idaho, yields were comparable to Lacey, while protein and lodging were higher than average.

**Champion** – a 2007 release from WestBred, a unit of Monsanto, Champion is a very high yielding, two-rowed spring feed barley. Combined over locations and years, Champion yields were equal to Xena and Spaulding under irrigation. Champion has greater than average test weight, and average height, lodging, and plumps, heading 1-2 days earlier than Baronesse.

**Clearwater (01ID435H)** – a 2007 release from the USDA-ARS in Aberdeen and the Idaho Ag Experiment Station, Clearwater is the first named variety that is a low-phytic acid, hulless, two-rowed spring feed barley. The hulless, low-phytate characteristic should be valuable in the feed industry for monogastric animals, especially fish, where there is concern about high phosphorus concentrations in the waste stream. Clearwater, because of the hulless characteristic, has very high test weight. Maturity, height, and lodging are average, and Clearwater has a high percent protein.

**Conrad (B5057)** – two-rowed spring malt barley released by Busch Agricultural Resources in 2004. Conrad has above average yields and test weight. When compared to other malt varieties, Conrad is

one of the highest yielding varieties and it yielded very well in the Upper Valley area, especially around Idaho Falls and Ashton.

**CDC Copeland** – a two-rowed malt variety developed by the University of Saskatchewan and released in 1999, Copeland was tested in 2009 and 2010 in the southern Idaho variety trials. Copeland yielded similar to Conrad and Moravian 69, and much higher than Harrington. Copeland was 3-4 in taller than average, and average for lodging and test weight.

**Craft** - Craft two-rowed malt barley is being targeted as malt for specialty beers. Released in 2006 by Montana AES, Craft yields have been below trial averages under irrigation in southern and southeast Idaho.

**Geraldine** - Released in 2007 by Montana AES, Geraldine is a two-rowed malt variety with excellent irrigated yields similar to Conrad and Pinnacle. Geraldine is at average for height, protein and plump, and is about 2 days later than average in maturity.

**Goldeneye (UT95B1216-4087)** – is a six-rowed feed barley released by Utah State in 2005. Goldeneye has very high yields under irrigated conditions, and above average yields under dryland production, and above average test weight. Yield, test weight, lodging resistance, and protein, are equal to or better than Steptoe. When cut at soft dough, Goldeneye has proven to be a high-yielding forage variety. Goldeneye also has high plumps and protein.

**Herald (00ID1550)** – Herald is a low-phytate, hulled six-rowed feed barley released by the USDA-ARS and Idaho AES in 2006. Seed characteristics make this an excellent feed barley for monogastric animals (swine), as phosphorus is reduced in the waste stream. Depending on the year and

environment, Herald has a high yield potential (see Table 20) and may also prove useful in the fish food industry. Herald is agronomically similar to its parent, Colter, but has lower test weight and higher plump.

**Hockett (MT910189)** – two-rowed malt barley released in 2007 by Montana State University. Hockett should replace Harrington with higher yields and less lodging under irrigated and dryland conditions.

**Julie (03AH6561-94)** – a two-rowed hullless barley released by the USDA-ARS and the University of Idaho AES in 2010 for high-beta glucan content and intended for human consumption. Julie has high test weight.

**Karma (MT080100)** – a two-rowed hullless variety released by the Montana State University in 2010.

**Lenetah (01Ab11107)** – a 2008 release from the USDA-ARS and Idaho AES, Lenetah is a high yielding two-rowed feed variety particularly well-adapted to the rain-fed conditions of northern Idaho. Lenetah has average test weight, heading, protein, plump and height, but may lodge under extreme conditions. Lenetah has consistently yielded higher than Baronesse, even under the irrigated conditions in southern and southeast Idaho.

**Moravian 69 (C69)** - two-rowed spring malt barley released by Coors Brewing Co. in 2005. Moravian 69 has very high yields. Height is very short, and lodging is much less than Harrington.

**Pinnacle (2ND21863)** – two-rowed spring malt barley released by North Dakota State University and the USDA-ARS in 2007. Pinnacle is a widely adapted malt line, and was a top yielding variety over the previous three years (2007-09), similar to Conrad and

Geraldine. In 2010, yields of Pinnacle were average. Pinnacle has average test weight, low protein and high plumps and was 2 days earlier than average for heading date.

**Primo (B-99-AL-616)** – a 2008 two-rowed feed variety from AgriPro, now Syngenta Seeds, Primo has yielded well under high stress conditions. Primo has been above average for irrigated yield and average for other agronomic characteristics, competing with Baronesse and Tetonia for yield.

**Spaulding (PB1-95-2R-522)** – a two-rowed spring feed variety, and a Plant Breeders 1 release, Spaulding has excellent yield potential for the Magic Valley area, and yielded above average at all other irrigated locations. Spaulding has above average test weight and plump, average maturity and height and below average protein and lodging.

**Tetonia (98AB11720)** – two-rowed spring feed barley released in 2007 by the USDA-ARS in Aberdeen and the Idaho Ag Experiment Station. Tetonia has high yield potential over many locations, and is well adapted to Idaho and Montana. Tetonia yielded slightly less than Baronesse in the irrigated nurseries over the last three years.

**Transit (03AH3054-51)** – a two-rowed hullless variety released by the USDA-ARS and the University of Idaho AES in 2010 for high-beta glucan content and intended for human consumption.

## WINTER BARLEY

**Alba (OR77)** – a six-rowed winter malt variety released in 2010 by the Oregon AES and the USDA-ARS. Yields over the past three years have been comparable to Endeavor and Eight-Twelve. Winter hardiness is better than Endeavor and Charles (both are two-rowed winter malt varieties).

**Charles (94Ab1274)** – Charles is the first AMBA approved two-rowed winter malt variety released by the USDA-ARS and the IAES in 2005. Charles yields are lower than the winter feed varieties, but has above average test weight. Charles is short, early maturing with average lodging. Charles has excellent plumps and yields very well in the Twin Falls area, even when severe winter conditions reduce stand.

**Endeavor (95Ab2299)** - Endeavor is the second two-rowed winter malt variety released by the USDA-ARS and the IAES and approved by AMBA for malt quality. Endeavor has improved malt quality and yield over Charles, especially in the Magic Valley area where winter kill is less of a problem than in eastern Idaho. Endeavor has excellent test weight and plumps, and is average for heading date, height and lodging.

**Maja (OR81)** – a six-rowed winter barley released by Oregon AES as a winter malt variety. Yields in the first year of testing in southern Idaho were slightly less than Charles, but in the second year (2010) yields were above trial average and 35 bu/A greater than Charles. Maja has very high test weight and plumps, and very low lodging.

**Mathias (OR76)** – a six-rowed winter malt barley released by the Oregon AES and the USDA-ARS in 2009. Mathias yields have been slightly less than Alba with similar test weight and spring stand, and earlier maturity. Both have very high plumps.

## **SPRING WHEAT**

**Babe (WA008039)** – Babe is a soft white spring wheat derived from Alpowa. It was released by Washington State AES in 2009. Babe has better emergence than Alpowa with a more upright growth habit, similar yield, better quality and higher test weight. Babe has improved high-temperature adult

plant resistance to stripe rust over Alpowa, and has performed above average for yield in the two years it has been in southeast Idaho trials.

**Bullseye (B02-0081)** - Bullseye is a high quality hard red spring wheat was released by AgriPro, now Syngenta Seeds. Combined over irrigated locations, Bullseye was the top performing hard red spring wheat over the last three years. Bullseye has very high test weight, and average for height and grain protein.

**Cabernet** – a hard red spring wheat from Resource Seeds, now Syngenta Cereals, Cabernet yields similar to WestBred 936 with higher test, with similar heading date, and is about three inches shorter with lower protein.

**Cataldo (IDO642)** – a soft white spring wheat released in 2007 from Idaho AES. Cataldo is very similar to Alturas (partial waxy), bred for Hessian Fly resistance for the rain-fed production areas of the PNW. It yields slightly less, is earlier and shorter than Alturas and has adult plant resistance for stripe rust. End-use quality is similar to Alturas for cookies and Asian noodles.

**Choteau** – is a hard red spring wheat released by Montana State University in 2005. Choteau has the solid-stem characteristic, which contributes to resistance to the stem saw-fly. Choteau yields are similar to WestBred 936, is taller and 2 days later in maturity, with higher test weight and average protein.

**Diva (WA008090)** – a 2010 release from the Washington AES, Diva is a soft white spring wheat having Hessian Fly resistance, high-temperature adult plant resistance and good end-use quality. Diva yields have been similar to Penawawa over the last two years in these extension trials.

**JD (WA 8047)** – JD is a soft white spring club wheat released in 2009 by the

Washington State AES that has shown stable yield performance in Washington, and both seedling and high-temperature adult plant resistance to stripe rust. While JD has exceptional club wheat quality, yields are lower than common soft white wheat varieties in our area.

**Kelse (WA007954)** - a hard red spring wheat released in 2008 through the Washington AES, and the USDA-ARS. Kelse was taller than average under irrigation, and yielded below average in the first year of testing in southern Idaho. Yield in 2010 was similar to WestBred 936, with higher test weight and protein. Kelse has seedling and adult plant resistance (HTAP) to stripe rust and Hessian Fly resistance.

**Lochsa (IDO597)** – is a hard white spring wheat adapted to irrigated and rainfed production. Lochsa is agronomically similar to ‘Jefferson’, with superior quality and higher protein. Lochsa is susceptible to stripe rust.

**Malbec (RSI-50603)** – a hard red spring wheat released by Resource Seeds, Inc, now Syngenta Cereals, in 2009. Malbec is similar to WestBred 936 for yield, has higher test weight and comparable protein.

**UI Pettit (IDO632)** – is a soft white spring wheat released in 2006 through the Idaho AES. Yields and test weight are similar to Alturas, but UI Pettit is 4 inches shorter and heads 3-4 days earlier than Alturas.

**UI Winchester (IDO578)** – a hard red spring wheat released by the Idaho Ag Experiment Station for dryland production areas, but also does well under irrigation. UI Winchester performed similar to Jefferson in the extension trials.

**Volt** – hard red spring wheat carried by WestBred. In the first year in the trials, Volt

was agronomically similar to UI Winchester and WestBred 936 with higher test weight. Volt does well under irrigated high-yield environments.

**WB-Fuzion (BZ901-717)** – hard red spring released by WestBred (a unit of Monsanto) in 2009 with very good end-use quality. Yields in these trials were similar to WestBred 936, with higher test weight and protein. Fuzion is about 4 inches taller than WestBred 936.

**WB-Idamax (BZ904-336)** – hard white spring released by WestBred (a unit of Monsanto) in 2009 with excellent quality, similar to Klasic. WB-Idamax yields were slightly above trial average, and was at average for heading date, plant height, and protein.

**WB-Paloma (BZ904-331WP)** – a hard white spring wheat released in 2009 by WestBred (a unit of Monsanto) as a possible replacement for Snow Crest. In the second year of testing, Paloma had yield comparable to Otis under irrigation, yielding 110% of Snow Crest.

**Whit (WA008008)** – a soft white spring wheat released in 2008 through the Washington AES, and the USDA-ARS. In three years of extension testing in southern Idaho, Whit has yielded below average, comparable to Nick and Cataldo, but higher than Penawawa. Whit has moderate resistance to stripe rust (high temperature adult plant resistance) and to Hessian fly. Whit is a partial waxy wheat with milling and baking characteristics similar to Alturas and Alpowa.

## WINTER WHEAT

**AgriPro Legion** - Like Salute, Legion is a tall semi-dwarf soft white winter variety, with white chaff, early maturity and good

straw strength. Legion has good resistance to current prevalent races of stripe rust and is similar to Tubbs for both winter-hardiness and snow mold tolerance. Legion has excellent yield potential, yielding similar to Brundage in this year's trials. Like all AgriPro varieties (now Syngenta Cereals), is a PVP, Title V variety.

**AgriPro Paladin (W96-355)** – a hard red winter wheat released by AgriPro (now Syngenta Cereals) in 2005. Paladin had average yields, similar to Boundary and Moreland, average test weight, and is a little shorter than average.

**AgriPro Salute** - a soft white winter selection AgriPro (now Syngenta Cereals) from the cross: Rod/Stephens 3\*/SF4. Salute is a tall semi-dwarf, white-chaffed variety with early maturity and good straw strength for a taller wheat. Salute has good resistance to current prevalent races of stripe rust and above average winter-hardiness and snow mold tolerance. Salute has large heads, excellent yield potential with average test weights and grain protein.

**Bitterroot (92-22407A)** – released in 2007 by the University of Idaho AES, Bitterroot is an excellent quality soft white winter wheat. Yields have been similar to Brundage 96, with better test weight and 3 inches taller.

**Bruneau (93-64901A)** – soft white winter wheat released in 2009 by the University of Idaho AES. Bruneau has been one of the highest yielding soft white winter wheat in these trials averaged over the past three years. Bruneau is resistant to stripe rust, and also has excellent end use quality, good straw strength and low protein. It is susceptible to dwarf bunt.

**Curlew (UT9325-55)** – a hard red winter wheat released by the Utah AES for dryland production areas of southern Idaho and Northern Utah. Curlew yields comparable to Utah 100 and Yellowstone under dryland

conditions and is agronomically similar to Utah 100. Curlew has resistance to dwarf bunt, and is susceptible to stripe rust.

**Decade (MT0552)** – a 2010 release by the Montana AES, Decade is a hard red winter wheat with yields similar to Boundary and Eddy but having higher protein. Decade has a tendency to lodge under irrigation and should be grown under dryland conditions.

**Goetze (ORH010920)** - a soft white winter wheat released in 2007 by Oregon AES and the USDA-ARS as a replacement to 'Foote', which had become susceptible to stripe rust. Goetze is adapted to western Oregon production conditions, and also has resistance to Septoria leaf blotch. Across the trials this year, Goetze performed similar to Daws and better than Stephens. Goetze requires little to no vernalization and is susceptible to winter kill. End use quality is similar to Stephens and Tubbs.

**Norwest 553** – a hard red winter wheat developed by Oregon State and Nickerson U.K. in cooperation with the USDA-ARS. Norwest 553 is resistant to stripe rust and tolerant to Fusarium crown rot, and has yielded very well in the second year of testing, comparable to Utah 100 and WB-Arrowhead. Norwest 553 was shorter than average with excellent lodging resistance. Grain protein and test weight were average.

**Skiles (ORH010085)** – a soft white winter wheat released in 2007 by Oregon AES and the USDA-ARS. Skiles has better winter hardiness than Goetze, Stephens or Tubbs, is moderately resistant to stripe rust, and has tolerance to crown rot and Cephalosporium stripe. In the three years it's been in these trials, Skiles' yield performance was average, was shorter with good lodging resistance.

**UICF Brundage (02-859)** – a soft white winter Clearfield wheat derived from Brundage released in 2009 by the Idaho

AES. Clearfield wheats have resistance to imazamox herbicides such as Beyond®, for hard to control grassy weeds. Performance and agronomic characteristics are very similar to Brundage.

**UICF Lambert (99-435)** - a soft white winter Clearfield wheat released in 2008 by the Idaho AES. Clearfield wheats have resistance imazamox herbicides such as to Beyond® herbicide, for hard to control grassy weeds. Performance and agronomic characteristics are very similar to Lambert.

**UICF Grace (IDO 651)** – a hard white winter Clearfield wheat released in 2009 for the rainfed production areas. UICF Grace has resistance to imazamox herbicides such as Beyond®, and will be useful in areas where jointed goatgrass and cheatgrass are problems. Yields are comparable to Golden Spike. UICF Grace is tall and susceptible to black chaff, making it suited to dryland production.

**UI Darwin (IDO 604)** – a hard white winter wheat released in 2005 by the IAES, intended as a replacement for the hard red winter cultivar ‘Bonneville.’ UI Darwin is similar to Bonneville in appearance, agronomic and quality characteristics, and does best in dryland production areas. UI Darwin has some adult plant resistance to stripe rust, is resistant to dwarf bunt and has moderate resistance to snow mold. UI Darwin has very high test weight and grain protein, but will lodge under irrigation.

**LHS (IDO835)** – a hard white winter wheat to be released in 2011 by the Idaho AES for high yield potential under dryland conditions. In the first year of dryland trials, LHS did very well in Ririe and average in Rockland. While LHS yielded well under irrigation, it will lodge.

**UI Silver (IDO 658)** – a hard white winter wheat released in 2009 by the University of Idaho AES. UI Silver had excellent dryland

yields in 2009 extension testing, and has good end use quality for both bread and Asian noodles. UI Silver has resistance to stripe rust, dwarf bunt, and carries the SrTmp gene for resistance to stem rust. It is susceptible to black chaff, which can be a problem under irrigation.

**WB-Arrowhead (ML9W05-2501)** – a hard red winter wheat released by WestBred (a unit of Monsanto) in 2011. Yields of WB-Arrowhead averaged over the last two years have been very good, similar to Utah 100 and Norwest 553. Foundation seed should be available in 2011.

**WB 456** – a soft white winter wheat from WestBred, (a unit of Monsanto), released as an improvement over WestBred 470 and as a replacement for WB-528. WB 456 yielded similar to WestBred 470 and Brundage 96, is three inches shorter than WestBred 470 with improved lodging resistance. WB 456 has an early heading date, 5-6 days earlier than average.

**WB-528 (BZ6W98-528)** – soft white winter wheat released by WestBred (a unit of Monsanto) intended as a replacement for WestBred 470. Yields are above average, better than WestBred 470 in both dryland and irrigated trials, but test weight tends to be lower. WB-528 has much better quality than WestBred 470. WB-528 is also resistant to stripe rust.

**WB-Junction (BZ6W02-616)** – a soft white winter wheat planned for release in 2011 by WestBred, a unit of Monsanto. In the first year in these trials, averaged over all irrigated locations, the yield and agronomic performance were similar to WB 456, but with lower test weight, and to UICF Brundage, but heading 6 days earlier.

**Whetstone (W98-355)** - is a hard red winter wheat from AgriPro, now Syngenta Cereals. Whetstone has been a consistent high-yielding, high test weight wheat. Whetstone

is a medium height semidwarf with buckskin colored chaff at maturity. Whetstone is an early maturing wheat with a good level of winter-hardiness and is resistant to the current prevalent races of stripe rust. Whetstone has excellent straw strength and has performed well in both irrigated and dryland production. Whetstone produces good protein, very good loaf volume. Whetstone is a PVP, Title V variety.

**Yellowstone (MT00159)** – a hard red winter wheat with excellent yield potential in irrigated and dryland conditions of southeast Idaho. Yellowstone has average test weight, height and heading dates and has excellent lodging resistance under irrigation. End use quality is average for grain protein, with above average loaf volume.

**Table 3. Ten year averages of selected agronomic characteristics, 2000-2009 compared to 2010.**

NOTE: "Average" values are for years 2000 to 2009

**Winter Wheat**

YIELD			TEST WEIGHT			PLANT HEIGHT			HEADING DATE				LODGING		
Year	# of Loc.	bu/A	Year	# of Loc.	lb/bu	Year	# of Loc.	in.	Year	# of Loc.	date	Days fr. Jan.1	Year	# of Loc.	%
2004	3	122	2000	4	61.4	2005	4	38	2010	5	6/18	171	2010	5	21
2000	4	108	2004	3	61.1	2004	3	36	2008	5	6/14	166	2009	5	17
2005	4	104	2008	5	60.9	2009	5	35	2002	4	6/10	162	2007	4	9
2009	5	102	2001	4	60.9	2000	4	34	2009	5	6/9	162	2006	4	8
2003	4	101	2006	4	60.8	2010	5	34	2001	4	6/8	160	2003	4	7
<b>Avg.</b>	---	<b>99</b>	2007	4	60.3	<b>Avg.</b>	---	<b>33</b>	2005	4	6/7	159	<b>Avg.</b>	---	<b>5</b>
2006	4	98	2010	5	60.3	2006	4	32	<b>Avg.</b>	---	<b>6/5</b>	<b>157</b>	2008	5	4
2007	4	96	<b>Avg.</b>	---	<b>60.2</b>	2003	4	32	2004	3	6/3	155	2005	4	4
2010	5	95	2009	5	60.0	2001	4	32	2000	4	6/2	154	2000	4	2
2001	4	89	2003	4	59.7	2002	4	31	2006	4	6/1	153	2004	3	2
2002	4	88	2005	4	59.3	2007	4	30	2003	3	5/31	152	2001	4	0
2008	5	80	2002	4	57.8	2008	4	30	2007	4	5/30	151	2002	4	0

**Spring Wheat**

YIELD			TEST WEIGHT			PLANT HEIGHT			HEADING DATE				LODGING		
Year	# of Loc.	bu/A	Year	# of Loc.	lb/bu	Year	# of Loc.	in.	Year	# of Loc.	date	Days fr. Jan.1	Year	# of Loc.	%
2009	5	107	2006	5	62.1	2003	4	34	2008	5	7/10	192	2003	4	62
2008	5	102	2009	5	61.8	2009	5	34	2010	5	7/9	192	<b>Avg.</b>	---	<b>8</b>
2003	4	96	2000	6	61.6	2010	5	33	2005	5	7/3	186	2006	5	6
2010	5	91	2001	7	61.4	2005	5	32	2009	5	7/3	185	2007	5	5
2005	5	87	2002	7	60.8	2004	4	32	2004	4	7/1	183	2010	5	5
<b>Avg.</b>	---	<b>85</b>	2008	5	60.7	<b>Avg.</b>	---	<b>31</b>	2002	7	6/29	181	2005	5	2
2007	5	81	<b>Avg.</b>	---	<b>60.6</b>	2007	5	30	<b>Avg.</b>	---	<b>6/28</b>	<b>181</b>	2001	7	1
2000	6	80	2010	5	60.6	2008	5	30	2003	4	6/28	180	2004	4	1
2004	4	79	2005	5	60.2	2000	6	29	2006	5	6/27	179	2008	5	0
2001	7	79	2004	4	59.6	2001	7	29	2001	6	6/24	176	2000	6	0
2006	5	72	2003	4	59.4	2002	7	29	2007	5	6/21	173	2002	7	0
2002	7	67	2007	5	58.6	2006	5	29	2000	6	6/19	171	2009	5	0

**Spring Barley**

YIELD			TEST WEIGHT			PLANT HEIGHT			HEADING DATE				LODGING		
Year	# of Loc.	bu/A	Year	# of Loc.	lb/bu	Year	# of Loc.	in.	Year	# of Loc.	date	Days fr. Jan.1	Year	# of Loc.	%
2009	4	118	2009	4	52.5	2010	4	37	2008	5	7/11	193	2003	4	78
2008	5	114	2005	5	52.0	2009	4	34	2010	4	7/4	187	2007	5	35
2010	4	106	2010	4	51.7	2004	4	34	2005	5	7/4	186	<b>Avg.</b>	---	<b>25</b>
2005	5	103	2006	5	51.5	2002	7	32	2009	4	7/1	183	2001	7	25
2003	4	102	2000	6	50.9	2003	4	32	2004	4	6/29	181	2010	4	24
2001	7	101	2004	4	50.7	2005	5	32	2006	5	6/28	180	2004	4	23
<b>Avg.</b>	---	<b>101</b>	2008	5	50.7	2008	5	31	<b>Avg.</b>	---	<b>6/27</b>	<b>179</b>	2002	7	22
2000	6	99	<b>Avg.</b>	---	<b>50.5</b>	<b>Avg.</b>	---	<b>31</b>	2002	7	6/26	178	2005	5	21
2004	4	99	2002	7	50.1	2000	6	29	2001	6	6/25	177	2006	5	21
2007	5	99	2003	4	49.2	2001	7	29	2007	5	6/23	175	2008	5	15
2002	7	96	2007	5	49.2	2007	5	27	2003	4	6/20	172	2009	4	13
2006	5	82	2001	7	48.4	2006	5	26	2000	6	6/18	170	2000	6	2

**Table 4. Hard Winter Wheat Irrigated Nurseries, 3-Year Averages  
(2008-2010; 9 site-years)**

<b>Variety</b>	<b>Yield (bu/A)</b>	<b>Test Wt (lb/bu)</b>	<b>Spring Stand %</b>	<b>Heading Date</b>	<b>Height (in.)</b>	<b>Lodging (%)</b>	<b>Protein (%)</b>
Deloris	126.2	62.7	98	6/10	41	20	12.6
Utah 100	124.4	60.7	98	6/11	43	17	12.6
NuHorizon (W)	124.3	63.7	97	6/4	36	12	11.9
Yellowstone	124.3	61.8	98	6/7	39	11	12.8
Whetstone	122.1	62.0	97	6/3	35	10	13.4
Moreland	121.9	60.6	97	6/6	35	13	13.3
Garland	118.2	59.7	97	6/10	28	6	13.1
Promontory	117.9	62.6	97	6/8	37	22	12.6
Boundary	116.7	60.9	98	6/10	35	19	12.2
Eddy	115.8	62.5	97	6/6	35	15	12.5
Curlew	115.3	60.8	99	6/7	39	38	14.2
AgriPro Paladin	115.0	61.4	98	6/7	36	11	13.3
Golden Spike (W)	113.7	60.2	98	6/11	39	41	12.7
Gary (W)	113.6	60.4	99	6/11	40	46	12.5
Manning	113.6	61.3	96	6/9	38	40	12.8
DW	112.2	61.4	98	6/10	37	36	13.0
Bonneville	110.9	62.6	99	6/13	43	34	14.2
UI Darwin (W)	110.3	62.4	98	6/10	41	42	13.6
NuHills	109.8	63.0	98	6/3	34	19	13.4
Weston	105.9	62.6	98	6/7	41	38	13.5
Average	116.6	61.7	98	6/8	38	25	13.0
LSD ( $\alpha = .05$ )	6.6	0.6	1.7	0.6	1.1	8.5	0.6
CV%	12.2	2.3	3.7	0.8	6.4	75.3	4.6
Pr > F	<.0001	<.0001	0.0943	<.0001	<.0001	<.0001	<.0001

(W) = white

**Table 5. Soft White Winter Wheat Irrigated Nurseries, 3-Year Averages  
(2008-2010; 9 site-years)**

<b>Variety</b>	<b>Yield (bu/A)</b>	<b>Test Wt (lb/bu)</b>	<b>Spring Stand %</b>	<b>Heading Date</b>	<b>Height (in.)</b>	<b>Lodging (%)</b>	<b>Protein (%)</b>
Tubbs 06	128.5	58.8	98	6/11	37	10	10.8
Xerpha	127.7	59.6	99	6/14	36	18	11.0
Brundage	127.3	61.1	98	6/6	34	10	10.6
Bruneau	127.3	59.6	98	6/12	35	23	10.4
Agripro Salute	125.6	58.7	99	6/10	37	9	11.4
Simon	125.5	59.6	98	6/10	36	8	11.1
ORCF-101	125.5	59.4	98	6/11	35	2	11.1
Brundage 96	125.4	58.7	99	6/10	34	9	10.9
Bitterroot	124.9	60.0	98	6/11	37	12	11.0
00-475-2DH	124.9	60.5	98	6/12	35	23	11.1
Lambert	123.8	59.4	98	6/9	38	13	11.1
WB-528	123.7	60.9	99	6/6	34	18	10.9
ORCF-102	123.1	57.6	97	6/11	36	13	11.0
UICF Lambert	122.5	59.1	98	6/9	37	13	11.3
Skiles	122.4	60.0	98	6/12	33	5	11.3
UICF Brundage	121.8	58.0	98	6/10	33	13	11.2
Madsen	121.4	59.3	97	6/13	35	10	11.5
Daws	120.2	60.0	98	6/12	37	16	11.0
Coda*	119.1	60.9	98	6/14	37	24	12.3
Bruehl*	117.4	57.3	98	6/15	37	18	11.9
Stephens	116.9	59.5	98	6/11	35	17	11.2
Average	123.6	59.4	98	6/11	36	13	11.1
LSD ( $\alpha = .05$ )	5.1	1.2	1.0	0.7	0.9	7.3	0.5
CV%	8.9	4.4	2.1	0.9	5.4	116.9	5.1
Pr > F	<.0001	<.0001	0.0083	<.0001	<.0001	<.0001	<.0001

\*club wheat

**Table 6. Winter Barley Irrigated Nurseries, 3-Year Averages (2008-2010; 7 site-years)**

<b>Variety</b>	<b>Yield (bu/A)</b>	<b>Test Wt (lb/bu)</b>	<b>Spring Stand %</b>	<b>Heading Date</b>	<b>Height (in.)</b>	<b>Lodging (%)</b>	<b>Protein (%)</b>	<b>Plumps (&gt;6/64)</b>	<b>Plumps (&gt;5.5/64)</b>	<b>% thin</b>
94Ab1777	167.2	49.0	84	6/1	36	25	10.3	64.0	21.9	14.7
02Ab2732	162.1	47.6	77	6/5	36	13	8.9	76.7	14.6	9.0
02Ab2701	158.0	48.9	83	6/3	36	24	10.1	76.0	15.1	9.3
Sunstar Pride	154.7	47.6	85	5/31	32	16	8.4	60.2	20.7	19.7
93Ab669	153.5	48.5	77	6/1	34	12	10.2	77.1	14.5	9.0
Strider	153.0	50.0	83	6/3	34	19	10.7	86.0	9.6	5.0
Sprinter	152.6	50.6	85	6/6	37	19	10.5	69.8	20.8	10.0
02Ab2739	150.6	47.4	81	6/4	34	22	9.7	72.6	17.1	11.0
Eight-Twelve	150.2	49.4	82	6/1	32	14	9.6	80.2	13.1	7.6
Endeavor	149.6	50.1	74	6/1	32	18	11.0	85.2	9.4	5.9
OR77	144.2	50.6	90	6/1	34	13	10.3	88.2	8.0	4.7
02Ab339	132.9	50.8	78	6/7	36	17	10.8	75.9	15.5	9.1
Charles	128.2	50.8	65	6/5	34	19	11.0	86.4	7.4	7.0
Schuyler	123.5	49.8	78	6/3	35	17	11.4	67.5	20.4	12.2
Average	148.6	49.4	80	6/3	34	18	10.2	76.1	14.9	9.6
LSD (a=.05)	10.8	1.4	4.8	3.5	1.7	9.6	1.0	8.2	4.4	4.6
CV%	13.7	5.2	11.3	4.3	9.4	102.6	8.9	10.2	27.8	45.4
Pr > F	<.0001	<.0001	<.0001	0.0021	<.0001	0.1278	<.0001	<.0001	<.0001	<.0001

**Table 7. Hard Winter Wheat Dryland Nurseries 3-Year Averages (2008-2010; 6 site-years)**

<b>Variety</b>	<b>Yield (bu/A)</b>	<b>Test Wt (lb/bu)</b>	<b>Spring Stand %</b>	<b>Heading Date</b>	<b>Height (in.)</b>	<b>Lodging (%)</b>	<b>Protein (%)</b>
Deloris	44.5	60.8	87	6/22	31	0	13.3
Yellowstone	41.8	60.6	82	6/20	28	0	13.0
Utah 100	41.7	59.0	84	6/21	30	0	13.6
Golden Spike (W)	41.2	59.4	83	6/22	29	0	13.0
Curlew	41.0	59.5	88	6/20	30	0	13.7
DW	40.7	60.1	83	6/21	27	0	13.3
Boundary	39.8	58.9	85	6/23	25	0	12.7
NuHorizon (W)	39.8	61.3	82	6/18	26	0	12.4
Moreland	39.6	58.5	83	6/19	25	0	13.5
Gary (W)	38.8	59.8	81	6/22	29	0	12.7
Garland	38.7	58.8	79	6/22	21	0	13.9
Manning	38.4	60.3	79	6/21	28	0	13.8
Juniper	37.7	59.4	84	6/22	25	0	13.9
UI Darwin (W)	37.2	61.8	84	6/21	30	0	14.1
Bonneville	37.1	60.8	83	6/23	31	0	14.4
Weston	35.9	61.4	83	6/20	31	0	14.1
Eddy	35.8	60.7	79	6/19	25	0	13.4
Average	39.4	60.1	83	6/21	28	0	13.5
LSD ( $\alpha = .05$ )	3.2	1.2	7.1	0.6	1.0	0.1	0.7
CV%	14.2	3.5	12.3	0.7	5.6	1649.2	4.8
Pr > F	<.0001	<.0001	0.4161	<.0001	<.0001	0.4585	<.0001

(W) = white

**Table 8. Soft White Winter Wheat Dryland Nurseries, 3-Year Averages (2008-2010; 3 site-years)**

<b>Variety</b>	<b>Yield (bu/A)</b>	<b>Test Wt (lb/bu)</b>	<b>Spring Stand %</b>	<b>Heading Date</b>	<b>Height (in.)</b>	<b>Lodging (%)</b>	<b>Protein (%)</b>
00-475-2DH	34.5	61.2	85	6/28	22	0	10.8
Coda*	34.0	60.5	74	6/28	22	0	10.7
Bruehl*	33.6	59.1	74	6/30	24	0	11.1
Xerpha	33.3	59.3	80	6/29	22	0	10.4
Bitterroot	32.1	59.0	71	6/29	23	0	11.1
ORCF-102	32.0	59.4	79	6/28	22	0	10.8
Bruneau	31.0	59.5	75	6/29	22	0	9.8
UICF Brundage	30.6	57.4	79	6/27	21	0	9.8
Stephens	30.5	58.6	74	6/28	22	0	10.4
Madsen	30.2	58.8	86	6/28	22	0	11.1
ORCF-101	29.9	59.0	78	6/28	22	0	11.0
Simon	29.9	58.9	82	6/28	22	0	10.0
Agripro Salute	29.5	57.8	84	6/27	23	0	10.2
UICF Lambert	29.3	58.5	79	6/26	25	0	9.5
WB-528	29.2	60.4	86	6/25	22	0	10.2
Tubbs 06	28.9	58.3	81	6/28	23	0	10.2
Daws	28.5	60.0	81	6/27	22	0	10.6
Brundage 96	27.5	57.5	84	6/28	21	0	9.8
Skiles	26.6	59.2	75	6/28	21	0	11.0
Lambert	26.6	58.8	87	6/25	23	0	10.2
Brundage	23.9	60.2	85	6/24	21	0	9.6
Average	30.1	59.1	80	6/27	22	0	10.4
LSD ( $\alpha = .05$ )	3.9	1.2	10.4	0.8	0.9	0.0	0.9
CV%	15.9	2.5	16.2	0.6	5.2	.	5.4
Pr > F	<.0001	<.0001	0.0388	<.0001	<.0001	.	0.0055

\*club wheat

**Table 9. Hard Spring Wheat Irrigated Nurseries, 3-Year Averages (2008-2010; 12 site-years)**

<b>Variety</b>	<b>Yield (bu/A)</b>	<b>Test Wt (lb/bu)</b>	<b>Spring Stand %</b>	<b>Heading Date</b>	<b>Height (in.)</b>	<b>Lodging (%)</b>	<b>Protein (%)</b>
<b>Hard Spring Wheat</b>							
Lolo (W)	123.8	62.5	100	7/3	36	3	11.5
Otis (W)	119.4	62.3	100	7/4	40	0	11.6
Bullseye	115.0	63.7	100	7/3	32	1	11.7
Jerome	114.6	61.8	100	6/30	33	0	11.6
IDO 667	112.9	63.6	100	7/2	33	5	12.0
Iona	111.3	62.6	100	7/2	38	3	12.2
Jefferson	109.8	62.2	100	7/2	35	0	11.9
Lochsa (W)	109.0	60.7	100	7/3	35	0	12.7
Choteau	107.4	62.0	100	7/3	35	0	13.0
Pristine (W)	107.1	63.0	100	6/30	35	0	13.0
OR 4990114	106.6	61.2	100	6/30	33	0	11.8
Malbec	106.6	62.3	100	7/2	31	0	12.3
Cabernet	106.6	62.6	99	7/2	28	1	11.7
UI Winchester	106.3	62.3	100	7/2	33	0	11.8
RSI 03W10348 (W)	105.3	62.1	100	6/30	30	0	11.8
WestBred 936	105.1	61.2	100	7/1	31	2	12.4
Kelse	104.3	61.8	100	7/3	36	0	12.8
Tara 2002	103.6	61.4	100	7/1	38	1	12.1
Blanca Grande (W)	102.3	63.4	100	6/29	29	0	12.4
Snow Crest (W)	101.2	62.5	100	6/29	29	0	12.6
Klasic (W)	99.3	62.6	99	6/29	26	0	12.1
<b>Durum Wheat</b>							
Utopia	105.8	61.0	99	7/2	30	4	10.0
Kronos	105.5	61.7	100	6/29	30	0	10.6
Alzada	105.5	61.9	100	7/1	33	3	10.5
Matt	103.5	62.3	100	7/1	32	1	10.2
Average	107.9	62.2	100	7/1	33	1	11.8
LSD ( $\alpha = .05$ )	4.1	0.4	0.4	0.4	0.8	2.6	0.5
CV%	9.4	1.7	1.0	0.5	5.9	676.1	5.6
Pr>F	<.0001	<.0001	0.0122	<.0001	<.0001	0.0006	<.0001

(W) = white

**Table 10. Soft White Spring Wheat Irrigated Nurseries, 3-Year Averages  
(2008-2010; 12 site-years)**

<b>Variety</b>	<b>Yield (bu/A)</b>	<b>Test Wt (lb/bu)</b>	<b>Spring Stand %</b>	<b>Heading Date</b>	<b>Height (in.)</b>	<b>Lodging (%)</b>	<b>Protein (%)</b>
IDO 644	124.0	60.5	100	6/24	34	3	9.3
IDO 671	121.8	61.4	100	6/26	36	0	9.1
IDO 669	121.1	61.4	100	6/26	38	6	9.4
Alturas	120.9	61.1	100	6/26	36	3	9.0
IDO 668	119.6	61.5	100	6/25	36	2	9.7
Alpowa	118.2	61.2	100	6/27	37	4	9.6
UI Pettit	117.8	61.2	100	6/23	32	4	9.7
Nick	115.8	61.7	100	6/25	34	4	9.8
Whit	115.2	61.6	100	6/25	35	6	9.6
Cataldo	113.9	61.2	100	6/23	34	0	9.9
Penawawa	113.5	61.8	100	6/27	35	4	9.6
Average	118.3	61.3	100	6/25	35	3	9.5
LSD ( $\alpha = .05$ )	4.2	0.2	0.3	0.4	0.8	4.4	0.3
CV %	8.7	0.9	0.8	0.5	5.3	347.0	4.0
Pr > F	<.0001	<.0001	0.2310	<.0001	<.0001	0.1924	<.0001

\*club wheat

**Table 11. 6-Row Barley Irrigated Nurseries, 3-Year Averages (2008-2010; 12 site-years)**

<b>Variety</b>	<b>Yield (bu/A)</b>	<b>Test Wt (lb/bu)</b>	<b>Spring Stand %</b>	<b>Heading Date</b>	<b>Height (in.)</b>	<b>Lodging (%)</b>	<b>Protein (%)</b>	<b>Plump (&gt; 6/64)</b>	<b>Plump (&gt;5.5/64)</b>	<b>% Thin</b>
<b>Feed</b>										
Millennium	126.7	50.6	99	6/29	37.8	7.7	9.3	76.8	11.6	6.8
Creel	124.9	51.3	99	6/29	36.8	21.8	8.2	80.3	10.0	6.0
Goldeneye	124.0	51.4	99	7/1	37.2	22.0	9.7	84.3	7.2	4.4
Steptoe	123.0	49.7	99	6/29	36.6	29.4	8.7	83.0	6.8	4.5
Colter	121.4	50.6	97	6/29	37.0	17.1	8.3	79.3	10.4	5.5
Aquila	120.2	52.0	99	6/28	37.2	13.7	9.5	84.8	6.4	3.5
Herald	119.3	49.9	99	6/30	38.2	14.0	8.6	84.1	7.4	3.7
<b>Malt</b>										
Lacey	112.1	51.9	99	6/30	37.7	13.7	9.9	86.7	5.4	2.4
Legacy	110.8	51.3	99	6/30	38.4	29.8	9.7	83.7	7.6	4.4
Morex	109.6	50.8	99	7/1	38.1	33.4	9.9	77.7	10.9	7.3
Tradition	106.6	51.9	99	6/30	38.1	14.7	10.1	87.1	5.0	2.2
Average	118.0	51.0	99	6/30	38	20	9.3	82.5	8.1	4.6
LSD ( $\alpha = .05$ )	5.2	0.5	1.8	0.6	1.0	7.3	0.5	2.9	1.5	1.7
CV%	10.8	2.2	4.4	0.7	6.6	90.8	7.3	4.3	23.7	45.1
Pr > F	<.0001	<.0001	0.3105	<.0001	0.0006	<.0001	<.0001	<.0001	<.0001	<.0001

**Table 12. 2-Row Barley Irrigated Nurseries, 3-Year Averages (2008-2010; 12 site-years)**

Variety	Yield (bu/A)	Test Wt (lb/bu)	Spring Stand %	Heading Date	Height (in.)	Lodging (%)	Protein (%)	(> 6/64)	Plump (5.5/64)	% Thin
<b>Feed</b>										
Xena	139.3	53.5	100	7/4	34	13	9.3	92.1	5.1	2.8
Spaulding	138.8	54.2	100	7/5	34	4	9.1	93.0	4.9	2.9
RWA 1758	138.2	53.9	100	7/4	32	13	8.9	93.8	4.2	2.4
Champion	137.8	53.9	100	7/3	33	14	9.6	92.0	5.5	2.9
Lenetah	135.6	53.5	100	7/5	34	32	9.7	93.9	3.6	3.0
Idagold II	135.4	52.3	99	7/7	28	4	9.4	91.5	6.2	2.6
Baronesse	134.8	53.4	100	7/5	33	20	9.2	92.7	4.6	3.0
Primo	133.8	53.1	100	7/5	31	23	9.0	91.0	5.2	3.8
Tetonia	130.0	53.0	100	7/7	33	25	9.4	88.9	6.4	4.9
Burton	126.6	53.3	100	7/5	35	11	9.7	94.8	3.2	2.3
Camas	126.3	53.6	100	7/4	35	10	10.1	92.5	4.7	3.3
Haxby	118.0	54.5	98	7/4	34	14	9.8	94.8	3.3	2.2
Hays	107.4	50.8	100	7/6	35	19	9.2	84.7	8.3	7.3
Clearwater*	105.4	57.4	96	7/5	34	31	12.5	78.3	14.7	7.8
<b>Malt</b>										
Conrad	126.6	52.6	100	7/5	32	16	10.1	92.5	3.6	1.9
02Ab17271	122.3	51.2	99	7/9	35	17	9.8	87.2	7.6	5.4
Geraldine	122.2	53.2	100	7/7	33	18	9.2	89.7	6.5	4.3
Merit	117.8	50.8	100	7/8	35	18	9.2	88.4	7.2	4.6
02Ab17373	117.7	51.8	100	7/8	35	19	9.6	90.5	5.6	3.6
Pinnacle	117.2	53.8	99	7/2	36	6	9.4	97.3	1.8	1.2
B1202	116.2	52.0	100	7/5	34	17	10.1	93.7	4.2	2.4
Craft	114.3	54.0	100	7/3	37	17	10.4	93.5	4.0	2.8
Hockett	113.0	53.5	100	7/3	33	27	9.9	93.4	4.0	2.8
Harrington	107.3	52.2	100	7/6	34	37	9.9	86.2	8.2	5.8
Average	124.3	53.1	100	7/5	34	18	9.7	91.1	5.5	3.6
LSD ( $\alpha = .05$ )	5.4	1.0	1.3	0.5	0.9	8.5	0.6	3.0	1.6	1.5
CV%	10.7	4.4	3.3	0.6	6.8	118.0	7.5	4.1	36.3	51.8
Pr > F	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001

\*indicates hulless variety

**Table 13. Hard Spring Wheat Dryland Nurseries, 3-Year Averages (2008-2010; 3 site-years)**

<b>Variety</b>	<b>Yield (bu/A)</b>	<b>Test Wt (lb/bu)</b>	<b>Spring Stand %</b>	<b>Heading Date</b>	<b>Height (in.)</b>	<b>Lodging (%)</b>	<b>Protein (%)</b>
<b>Hard Spring Wheat</b>							
Otis (W)	56.9	58.6	95	7/25	29	0	10.4
Lolo (W)	54.7	59.7	92	7/24	27	0	10.5
Jerome	50.3	59.2	95	7/21	25	0	10.5
IDO 667	48.7	60.2	95	7/22	25	0	10.5
OR 4990114	48.5	59.2	95	7/21	24	0	10.4
Jefferson	48.4	59.7	93	7/23	25	0	11.1
Lochsa (W)	47.5	58.5	93	7/23	27	0	10.9
UI Winchester	46.7	59.5	93	7/22	24	0	10.5
Bullseye	46.0	60.3	95	7/23	22	0	10.7
Tara 2002	45.8	58.6	92	7/21	28	0	11.4
Iona	45.7	59.4	91	7/24	25	0	11.1
Cabernet	45.0	59.5	93	7/24	21	0	10.2
IDO 665	44.4	58.6	94	7/21	24	0	10.7
WestBred 936	44.3	58.7	93	7/21	23	0	11.2
Pristine (W)	44.0	59.8	94	7/20	25	0	11.8
Kelse	43.7	57.6	95	7/24	28	0	11.2
Snow Crest (W)	43.0	59.6	94	7/19	22	0	11.3
Blanca Grande (W)	42.4	60.3	93	7/20	22	0	11.0
Choteau	40.9	58.7	90	7/24	23	0	12.2
Klasic (W)	37.2	59.8	93	7/20	19	0	10.6
<b>Spring Durum</b>							
Utopia	37.7	57.4	90	7/24	22	0	10.0
Kronos	37.2	59.7	88	7/22	22	0	9.9
Matt	35.7	60.0	88	7/24	22	0	9.8
Average	45.0	59.2	93	7/22	24	0	10.8
LSD ( $\alpha = .05$ )	4.6	1.1	3.2	0.6	1.2	0.0	1.2
CV%	12.6	2.3	4.3	0.4	6.1	.	6.8
Pr>F	<.0001	<.0001	<.0001	<.0001	<.0001	.	<.0001

(W) = white

**Table 14. Soft White Spring Wheat Dryland Nurseries, 3-Year Averages  
(2008-2010; 3 site-years)**

<b>Variety</b>	<b>Yield (bu/A)</b>	<b>Test Wt (lb/bu)</b>	<b>Spring Stand %</b>	<b>Heading Date</b>	<b>Height (in.)</b>	<b>Lodging (%)</b>	<b>Protein (%)</b>
Cataldo	55.4	59.5	91	7/21	24	0	9.0
IDO 671	55.1	58.9	93	7/25	24	0	9.1
IDO 669	53.9	59.4	92	7/23	26	0	9.3
Penawawa	53.4	58.5	93	7/26	25	0	9.1
Alturas	53.4	58.2	95	7/26	25	0	8.4
Whit	51.3	58.1	94	7/24	25	0	9.2
IDO 644	49.6	58.4	94	7/23	24	0	8.6
UI Pettit	48.8	59.1	92	7/21	22	0	9.1
IDO 668	45.7	57.2	95	7/24	25	0	9.0
Alpowa	44.1	52.4	91	7/27	26	0	9.7
Average	51.1	58.0	93	7/24	25	0	9.1
LSD ( $\alpha = .05$ )	5.9	1.0	3.7	0.6	1.3	0.0	0.6
CV%	14.0	2.0	4.9	0.4	6.6	.	3.9
Pr > F	0.0007	<.0001	0.2801	<.0001	<.0001	.	0.0242

**Table 15. Irrigated Hard Winter Wheat Data Combined from Kimberly, Rupert, and Aberdeen, 2010.**

<b>Variety</b>	<b>Yield (bu/A)</b>	<b>Test Wt (lb/bu)</b>	<b>Spring Stand %</b>	<b>Heading Date</b>	<b>Height (in)</b>	<b>Lodging (%)</b>	<b>Protein (%)</b>
Utah 100	143.9	60.7	99	6/18	45	26	12.3
ACS 55017	143.5	61.7	99	6/11	38	27	12.1
Norwest 553	139.2	61.9	98	6/13	36	0	11.9
WB-Arrowhead	135.8	62.2	99	6/14	40	21	12.1
LHS (W)	135.5	61.3	100	6/18	41	40	12.3
BC002-02	132.1	61.5	98	6/11	36	13	12.9
IDO660	131.8	62.6	99	6/12	39	9	12.9
Yellowstone	130.1	61.1	98	6/12	42	20	12.6
Deloris	128.4	62.4	98	6/16	44	39	13.0
Whetstone	127.9	61.4	98	6/8	39	22	13.2
Garland	126.7	59.7	96	6/16	30	17	12.9
NuHorizon (W)	125.2	63.3	97	6/9	40	23	11.9
Moreland	124.9	60.2	98	6/13	37	16	12.9
Boundary	123.8	61.3	97	6/15	38	27	11.6
AgriPro Paladin	123.7	60.9	98	6/13	39	13	13.0
Decade	123.3	61.9	98	6/12	41	43	13.0
Eddy	120.0	61.8	97	6/11	38	20	11.7
Promontory	116.4	62.0	98	6/14	39	31	12.4
Golden Spike (W)	115.6	59.3	98	6/17	40	54	12.0
UI Silver (W)	115.3	61.1	98	6/15	40	60	13.4
Curlew	114.4	59.8	99	6/14	41	58	14.0
Gary (W)	114.2	59.8	98	6/17	42	62	12.4
Esperia	113.8	59.7	98	6/9	36	19	12.8
Weston	113.5	63.2	98	6/13	44	49	13.1
UI Darwin (W)	112.9	62.4	98	6/16	43	62	13.0
Manning	112.7	60.2	99	6/15	40	58	12.8
DW	112.1	60.7	99	6/17	38	45	12.8
UICF Grace (W)	111.6	60.4	98	6/13	45	38	13.7
Bonneville	110.9	62.8	98	6/18	46	46	14.3
NuHills	110.7	62.8	97	6/8	38	15	13.3
Average	123.0	61.3	98	6/14	40	32	12.7
LSD ( $\alpha = .05$ )	11.8	1.4	1.8	0.9	2.0	16.8	1.3
CV%	11.8	2.9	2.3	0.7	6.4	64.5	6.4
Pr >F	<.0001	<.0001	0.0343	<.0001	<.0001	<.0001	0.0217

**Table 16. Irrigated Soft White Winter Wheat Data Combined from Kimberly, Rupert, and Aberdeen, 2010.**

<b>Variety</b>	<b>Yield (bu/A)</b>	<b>Test Wt (lb/bu)</b>	<b>Spring Stand %</b>	<b>Heading Date</b>	<b>Height (in)</b>	<b>Lodging (%)</b>	<b>Protein (%)</b>
AP Badger	141.2	57.2	99	6/15	34	25	10.4
Brundage	141.0	61.0	98	6/11	37	29	10.6
Agripro Salute	137.2	58.3	98	6/16	40	15	11.6
Xerpha	136.9	59.4	99	6/18	39	45	11.0
ID98-19010A	136.7	59.3	97	6/13	37	25	10.2
Tubbs 06	136.1	57.8	97	6/17	39	23	10.8
Simon	136.1	58.9	97	6/16	38	16	11.0
ORCF-101	135.6	59.3	98	6/16	38	6	10.6
WB-528	135.1	60.6	99	6/11	37	38	10.4
AP Legacy	134.9	59.3	98	6/17	39	11	10.8
Bruneau	134.3	58.5	98	6/17	38	55	10.6
Skiles	134.2	60.3	97	6/18	36	7	10.6
UICF Lambert	132.0	57.9	98	6/13	40	24	11.5
WB 456	131.6	61.7	97	6/10	34	14	10.9
Westbred 470	131.6	62.1	97	6/10	37	24	10.7
Brundage 96	131.6	58.0	98	6/15	36	26	11.2
Bitterroot	131.1	59.0	98	6/17	40	28	11.0
Lambert	130.8	58.5	98	6/14	39	25	11.6
00-475-2DH	130.8	59.9	98	6/17	36	49	10.7
IDO663	130.4	58.0	99	6/13	37	23	11.6
Madsen	130.2	58.8	97	6/18	38	22	11.4
UICF Brundage	130.0	58.1	98	6/15	35	34	11.0
Agripro Legion	129.6	56.1	98	6/16	39	55	11.4
ORCF-102	129.0	58.3	98	6/17	39	38	11.2
WB-Junction	128.6	58.9	99	6/9	35	55	10.8
Daws	126.8	59.3	97	6/18	40	33	11.1
Goetze	124.4	58.3	96	6/10	34	8	10.4
Stephens	120.8	58.0	98	6/17	38	37	11.4
Bruehl*	118.9	56.0	98	6/21	40	45	11.9
Coda*	114.6	59.2	97	6/20	40	52	13.0
Average	131.4	58.9	98	6/15	38	30	11.0
LSD ( $\alpha = .05$ )	7.3	0.9	1.4	1.0	1.2	16.0	1.0
CV %	6.9	1.9	1.8	0.7	4.1	67.5	5.4
Pr > F	<.0001	<.0001	0.0152	<.0001	<.0001	<.0001	0.0006

\* indicates club wheat variety

**Table 17. Irrigated Winter Barley Data Combined from Rupert and Aberdeen 2010.**

Variety	Yield (bu/A)	Test Wt (lb/bu)	Spring Stand	Heading Date	Height (in)	Lodging (%)	Protein (%)	Plump		
								(>6/64)	(>5.5/64)	% Thin
OR819	175.7	49.8	92	6/5	36	3	8.7	86.6	9.8	4.1
94Ab1777	175.2	49.2	80	6/5	38	30	8.1	61.7	24.6	13.9
Eight-Twelve	175.0	49.5	88	6/5	37	19	7.5	78.7	13.9	7.9
02Ab2732	173.6	49.1	75	6/9	37	26	7.2	83.0	11.1	6.1
OR91	173.0	50.7	94	6/5	35	14	9.4	81.8	12.8	5.9
OR92	169.8	49.5	81	6/4	35	23	8.5	86.7	9.0	4.5
93Ab669	169.0	50.1	77	6/6	37	24	7.6	78.6	13.9	7.7
OR93	168.9	49.3	91	6/5	36	26	8.8	83.3	11.7	5.3
Sunstar Pride	165.3	48.4	83	6/14	36	15	7.0	53.1	21.4	26.0
OR94	164.5	49.8	91	6/5	35	13	9.2	88.3	8.8	3.6
02Ab2739	164.3	47.8	82	6/8	37	43	7.8	70.5	18.8	11.3
Maja	162.8	50.9	93	6/5	35	19	7.9	83.4	11.1	6.1
Strider	160.4	49.8	88	6/5	37	41	8.5	85.9	9.5	5.0
OR818	156.8	49.5	89	6/5	34	13	9.3	86.1	10.0	4.3
02Ab2701	155.4	48.6	88	6/7	40	57	7.8	68.7	18.7	13.0
02Ab339	155.1	50.5	92	6/10	38	43	8.7	60.7	25.1	14.5
Alba	151.2	50.6	88	6/5	36	28	7.8	89.8	7.3	3.5
OR816	149.1	49.9	87	6/6	39	39	8.0	87.0	8.9	4.5
Schuyler	144.8	49.8	91	6/9	39	46	11.3	62.7	20.4	15.7
OR85	144.7	55.3	81	6/3	33	28	13.5	53.5	30.5	16.6
Mathias	143.4	51.3	93	6/1	37	13	8.4	92.7	5.1	2.6
Kamiak	143.4	50.2	96	5/31	36	33	8.8	86.6	9.5	4.2
Sprinter	143.3	49.8	93	6/9	39	46	8.4	63.4	23.8	13.2
OR83	140.4	50.5	88	5/31	34	38	8.6	68.7	21.4	10.5
OR813	134.7	51.7	88	6/1	37	10	8.7	93.8	4.7	2.0
Endeavor	128.1	52.4	44	6/8	36	29	8.7	84.9	8.8	6.7
Charles	125.5	51.5	46	6/5	32	26	9.1	85.7	8.2	6.8
OR815	125.1	52.7	84	6/5	38	16	7.9	89.9	7.2	3.3
OR86	123.7	57.9	65	6/7	34	46	10.9	53.2	29.1	18.0
Average	153.9	50.5	84	6/5	36	28	8.7	77.5	14.3	8.5
LSD ( $\alpha = .05$ )	20.5	1.0	10.2	1.3	2.4	20.2	2.5	15.8	8.8	8.8
CV %	13.0	2.1	12.4	0.8	6.8	73.6	14.3	9.9	30.1	50.4
Pr > F	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0185	<.0001	<.0001	0.0006

**Table 18. Irrigated Hard Spring Wheat Data Combined from Rupert, Idaho Falls, Ashton, and Aberdeen, 2010.**

Variety	Yield (bu/A)	Test Wt (lb/bu)	Spring Stand	Heading Date	Height (in)	Lodging (%)	Protein (%)
Lolo (W)	117.8	61.9	99	7/7	37	8	11.0
Bullseye	108.7	63.0	100	7/5	33	0	11.5
Otis (W)	108.2	62.1	100	7/6	42	0	11.1
WB-Idamax (W)	107.0	61.0	100	7/3	31	0	11.9
WB-Paloma (W)	106.2	61.9	100	7/3	32	0	11.5
Jerome	105.8	61.0	100	7/4	34	0	11.3
IDO 667	105.4	63.0	100	7/5	34	14	12.1
OR 4990114	104.7	60.2	100	7/3	34	0	11.5
Jefferson	103.3	61.7	100	7/5	36	0	12.0
Pristine (W)	103.2	62.5	100	7/3	38	0	12.4
Choteau	102.7	62.0	99	7/5	36	0	12.6
IDO 702	102.4	61.0	99	7/5	36	0	11.7
Lochsa (W)	101.8	59.2	100	7/6	36	0	12.6
RSI 03W10348 (W)	101.8	61.9	100	7/3	32	0	11.2
Malbec	101.2	61.8	100	7/3	33	0	12.1
Iona	101.1	61.7	100	7/5	38	6	12.1
UI Winchester	100.4	61.7	100	7/5	34	1	11.5
Volt	100.4	63.0	100	7/6	34	0	11.5
Blanca Grande (W)	99.7	63.3	100	7/2	30	0	11.1
Tara 2002	99.1	60.8	100	7/3	41	3	11.9
Cabernet	98.9	62.1	99	7/4	29	3	11.6
WB-Fuzion	98.6	62.1	100	7/3	37	0	12.7
Kelse	97.9	61.2	100	7/6	38	1	12.8
WestBred 936	97.8	60.1	100	7/5	33	5	12.4
Snow Crest (W)	96.8	61.9	100	7/1	30	0	12.0
Klasic (W)	93.9	62.0	99	7/2	27	0	11.7
SJ908-247	83.1	62.0	100	7/5	27	0	13.3
<b>Durum</b>							
Utopia	104.4	60.7	98	7/5	31	10	10.7
Kronos	104.0	61.2	100	7/2	30	0	11.7
Alzada	101.2	62.2	100.0	7/4	34	6	11.5
Matt	100.5	61.8	100.0	7/4	33	0	11.4
Average	102.3	61.7	100	7/4	34	2	11.8
LSD ( $\alpha$ = .05)	5.4	0.5	6.6	0.8	1.5	1	0.8
CV%	7.5	1.3	1.0	0.6	6.5	515.0	4.6
Pr > F	<.0001	<.0001	0.0025	<.0001	<.0001	0.0009	<.0001

**Table 19. Irrigated Soft White Spring Wheat Data Combined from Rupert, Idaho Falls, Ashton, and Aberdeen 2010**

Variety	Yield (bu/A)	Test Wt (lb/bu)	Spring Stand	Heading Date	Height (in)	Lodging (%)	Protein (%)
IDO 644	113.6	59.8	100	7/4	35	8	8.7
IDO 599	111.9	60.5	100	7/5	36	13	8.8
IDO 669	111.5	60.5	100	7/6	39	15	8.9
Alturas	111.4	60.6	100	7/6	38	8	8.6
IDO 687	111.1	61.9	100	7/7	38	3	8.9
Nick	110.1	61.0	100	7/5	36	11	9.2
IDO 686	109.3	61.6	100	7/7	39	11	8.9
UI Pettit	109.2	60.7	100	7/3	34	12	8.8
IDO 671	109.1	60.8	100	7/6	38	1	8.5
Babe	108.9	61.5	100	7/6	40	11	9.0
IDO 668	107.9	60.8	100	7/4	38	5	9.3
Alpowa	107.0	60.4	100	7/7	39	11	8.9
Whit	106.9	60.8	100	7/5	37	15	9.1
Cataldo	104.5	60.9	99	7/3	36	0	9.4
Penawawa	99.3	61.0	100	7/7	37	10	9.1
Diva	96.7	59.8	100	7/6	38	24	9.3
JD	95.9	61.0	100	7/7	39	23	9.1
Average	107.3	60.8	100	7/6	37	11	9.0
LSD ( $\alpha = .05$ )	5.8	0.5	0.3	0.5	1.3	11.6	0.5
CV%	7.7	1.1	0.4	0.4	4.9	158.1	4.2
Pr > F	<.0001	<.0001	0.0077	<.0001	<.0001	0.0024	0.0396

**Table 20. Irrigated 6-Row Spring Barley Data Combined from Rupert, Idaho Falls, Ashton, and Aberdeen, 2010**

Variety	Yield (bu/A)	Test Wt (lb/bu)	Spring Stand	Heading Date	Height (in)	Lodging (%)	Protein (%)	Plumps (>6/64)	Plumps (>5.5/64)	% Thin
<b>Feed</b>										
Creel	125.2	50.5	100	7/1	40	23	7.4	85.0	9.0	6.3
Herald	114.9	49.4	100	7/2	40	22	7.6	91.0	6.1	3.0
UT2120-35	113.8	50.8	100	6/29	38	24	7.6	91.6	5.9	2.9
Colter	113.3	50.1	100	7/1	39	23	7.6	85.5	9.2	5.4
UT2120-14	113.1	51.0	100	6/29	37	20	7.7	93.3	4.5	2.6
Millennium	110.2	50.2	100	6/30	38	8	7.5	82.9	10.3	6.7
Steptoe	103.8	49.0	100	7/2	38	28	7.2	90.9	5.6	3.7
Goldeneye	103.2	51.7	100	7/2	38	21	8.1	90.8	5.7	3.6
Aquila	92.6	52.4	100	6/28	38	20	7.8	91.8	5.2	3.1
<b>Malt</b>										
Legacy	103.1	49.8	99	7/3	41	36	7.7	85.9	8.7	5.8
Lacey	100.2	52.4	100	7/1	41	20	7.7	93.1	4.7	2.5
Celebration	92.2	51.0	100	7/3	40	20	8.1	92.9	5.1	2.4
Morex	87.8	50.1	100	7/4	41	29	7.3	84.2	9.9	6.1
Tradition	86.8	51.5	100	7/3	41	23	8.2	93.1	4.8	2.3
Average	105.0	50.6	100	7/1	39	22	7.7	88.9	7.1	4.2
LSD ( $\alpha = .05$ )	8.7	0.6	1.0	0.7	1.8	13.6	0.6	4.9	2.2	2.9
CV%	11.9	1.7	1.4	0.5	6.6	87.5	5.1	3.9	22.2	48.8
Pr > F	<.0001	<.0001	0.5996	<.0001	<.0001	0.1173	0.0211	<.0001	<.0001	0.0026

**Table 21. Irrigated 2-Row Spring Barley Data Combined from Rupert, Idaho Falls, Ashton, and Aberdeen, 2010.**

<b>Variety</b>	<b>Yield (bu/A)</b>	<b>Test Wt (lb/bu)</b>	<b>Spring Stand</b>	<b>Heading Date</b>	<b>Height (in)</b>	<b>Lodging (%)</b>	<b>Protein (%)</b>	<b>Plumps</b>		
								<b>(&gt;6/64)</b>	<b>(&gt;5.5/64)</b>	<b>% Thin</b>
<b>Feed</b>										
Idagold II	127.2	51.6	100	7/9	30	9	7.3	90.5	7.0	2.7
RWA 1758	122.5	53.2	100	7/7	34	23	7.2	94.0	3.5	2.6
Spaulding	121.3	53.3	100	7/8	36	2	7.6	92.6	4.5	3.0
Baronesse	120.4	53.1	100	7/8	34	20	7.2	93.4	4.0	2.7
Xena	119.6	53.3	100	7/7	35	9	7.6	93.7	4.2	2.1
2Ab04-X00017-4	119.3	52.1	100	7/7	37	24	7.8	92.9	4.1	3.2
Champion	117.8	53.6	100	7/6	35	18	8.0	93.6	4.4	2.4
Tetonia	117.6	52.8	100	7/9	33	33	7.1	90.8	5.7	3.6
Lenetah	116.7	52.7	100	7/7	36	44	8.1	92.7	3.8	3.8
Primo	115.8	52.6	100	7/8	32	35	7.4	90.5	4.8	4.6
Camas	110.0	53.4	100	7/6	36	8	8.4	93.5	3.9	3.1
Burton	106.2	53.0	100	7/7	36	19	7.8	94.1	3.8	2.5
Haxby	98.9	54.1	100	7/6	36	19	8.7	95.0	3.0	2.3
Julie*	96.1	57.9	99	7/11	36	15	14.1	75.2	14.4	10.6
Hays	93.6	51.0	100	7/9	35	22	6.9	87.6	7.6	4.9
Clearwater*	90.0	58.0	100	7/7	34	30	13.5	73.7	17.8	8.7
Transit*	80.7	57.7	99	7/10	37	20	13.6	78.6	14.4	6.9
Karma	57.4	58.3	100	7/5	40	69	11.9	82.0	10.6	7.4
<b>Malt</b>										
2Ab04-X001084-27	118.2	50.9	100	7/7	35	23	7.6	92.0	4.4	3.4
Moravian 69	117.0	50.4	99	7/11	29	22	7.3	88.5	7.0	4.4
02Ab17271	113.3	50.4	100	7/11	35	17	7.8	87.0	7.9	5.1
Copeland	110.5	51.5	100	7/8	38	33	8.0	92.1	4.5	3.8
Conrad	110.1	52.1	100	7/7	33	19	7.9	93.8	4.0	2.2
Merit 57	107.9	50.2	100	7/7	35	33	7.9	81.8	9.9	8.4
Merit	106.2	49.6	100	7/10	36	29	8.0	88.1	7.0	5.0
Geraldine	105.7	52.7	100	7/9	35	23	7.9	89.2	6.0	4.8
B1202	105.4	51.5	100	7/7	36	24	8.1	93.9	3.5	2.5
02Ab17373	104.2	51.2	100	7/9	37	25	7.9	90.3	5.9	3.9
Pinnacle	98.2	53.1	100	7/3	38	13	8.2	96.5	2.2	1.4
Harrington	97.1	51.6	100	7/8	36	42	8.1	84.4	8.5	7.2
Craft	97.0	53.9	100	7/5	38	22	8.7	93.4	3.6	2.8
Hockett	95.4	53.3	100	7/5	34	35	8.2	93.7	3.6	2.7
Average	107.1	52.9	100	7/8	35	25	8.5	89.6	6.2	4.2
LSD ( $\alpha = .05$ )	8.5	0.8	0.4	0.8	1.5	15.0	0.7	7.4	3.7	3.9
CV%	11.4	2.1	0.6	0.6	6.2	87.3	5.8	5.9	43.6	67.2
Pr > F	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0004

\* indicates hulless variety

**Table 22. Agronomic data for winter wheat at Kimberly, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand%	Heading Date	Height (in.)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Hard Winter Wheat</b>									
Golden Spike (W)	149.8	118.3	161.5	63.4	100	6/13	40	0	9.7
LHS (W)	---	---	157.5	63.5	100	6/14	41	0	9.0
UI Silver (W)	---	---	149.9	64.2	99	6/12	39	0	9.5
Utah 100	119.3	137.2	148.1	62.9	100	6/14	45	0	10.7
Gary (W)	131.6	119.6	145.9	62.6	99	6/14	43	0	10.1
Manning	126.2	122.1	145.9	64.2	100	6/12	40	0	10.0
ACS 55017	---	---	144.8	63.7	100	6/8	37	0	9.6
Curlew	---	137.0	142.3	64.6	100	6/11	39	0	11.2
Bonneville	122.9	119.9	142.3	64.7	100	6/12	47	1	11.4
UICF Grace (W)	---	---	142.3	63.7	100	6/8	43	0	10.7
Deloris	146.3	135.6	140.5	64.1	100	6/11	42	0	10.4
Moreland	154.8	133.6	140.5	63.8	99	6/10	35	0	10.4
Yellowstone	141.8	142.9	140.1	63.9	100	6/10	40	0	9.9
BC002-02	---	145.3	136.9	64.6	100	6/8	33	0	10.6
Boundary	122.5	129.5	136.1	63.1	100	6/12	36	0	9.6
WB-Arrowhead	---	143.4	134.7	64.5	100	6/9	38	0	10.8
Whetstone	132.3	135.6	134.7	64.6	100	6/6	38	0	11.1
UI Darwin (W)	127.3	115.8	133.9	64.9	100	6/11	43	0	11.0
Norwest 553	---	149.1	133.9	62.7	99	6/10	34	0	9.4
DW	127.5	123.0	132.9	63.9	100	6/13	37	0	9.9
AgriPro Paladin	119.4	143.0	132.9	64.0	100	6/9	37	0	10.1
Garland	131.2	123.5	132.9	63.0	99	6/12	26	0	10.3
Promontory	130.6	146.4	132.1	65.2	99	6/11	38	0	10.0
Weston	127.2	109.8	128.9	65.0	100	6/9	41	4	11.3
IDO660	---	---	127.8	64.2	100	6/8	35	0	11.6
Eddy	129.2	138.9	127.4	64.4	99	6/8	36	0	10.2
Decade	---	---	126.7	64.0	100	6/8	39	0	11.4
NuHorizon (W)	134.5	145.7	122.0	64.8	100	6/6	38	0	10.1
Esperia	---	121.9	116.2	62.8	99	6/6	35	0	11.6
NuHills	113.9	136.6	111.8	64.9	98	6/6	36	0	12.1
Average	134.3	130.7	136.8	64.0	100	6/10	38	0	10.4
LSD ( $\alpha=.05$ )	4.0	13.3	9.8	0.4	1.2	1.3	3.7	1.4	
CV %	13.5	7.2	5.0	0.5	0.9	0.6	7.0	590.1	
Pr > F	0.0045	0.0001	<.0001	<.0001	0.0793	<.0001	<.0001	0.0042	

(W) = White

**Table 23. Agronomic data for winter wheat at Rupert, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand%	Heading Date	Height (in.)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Hard Winter Wheat</b>									
ACS 55017	---	---	139.4	60.0	100	6/14	37	30	14.3
Utah 100	112.5	103.1	135.4	55.9	100	6/22	45	20	13.6
IDO660	---	---	132.9	57.6	100	6/15	38	0	13.4
Deloris	112.9	120.3	125.6	60.9	100	6/19	43	35	13.8
WB-Arrowhead	---	129.1	125.6	59.6	100	6/18	40	5	13.5
Norwest 553	---	124.0	120.9	55.1	99	6/16	34	0	14.1
Decade	---	---	119.8	61.3	100	6/14	41	43	14.5
Whetstone	111.1	131.8	119.8	57.9	100	6/11	38	1	15.6
LHS (W)	---	---	118.0	58.9	100	6/21	40	48	13.8
BC002-02	---	124.4	111.8	55.7	100	6/13	36	3	15.1
Boundary	105.9	118.8	109.6	55.8	97	6/19	37	23	12.7
NuHorizon (W)	111.4	139.8	108.9	55.9	100	6/11	39	0	12.1
Weston	87.0	93.4	107.5	56.7	100	6/17	45	49	13.5
AgriPro Paladin	106.6	102.5	107.1	56.7	100	6/16	38	5	16.0
Yellowstone	107	113.5	104.5	61.3	98	6/14	41	3	14.6
Esperia	---	122.2	103.8	58.5	99	6/12	35	0	14.6
Curlew	111.4	108.8	101.6	56.4	100	6/17	40	76	16.1
Garland	111.4	114.9	100.9	59.3	97	6/20	28	0	14.7
Moreland	105.3	115.9	99.1	56.9	100	6/15	38	0	14.3
Eddy	102.1	106.1	98.0	59.9	100	6/14	38	0	13.0
Promontory	117.9	118.6	96.9	60.6	100	6/16	40	0	13.7
NuHills	104.4	122.7	96.2	60.1	98	6/10	37	1	14.3
UI Darwin (W)	87.4	87.7	96.2	61.5	100	6/19	41	89	14.4
Bonneville	97.2	95.6	93.3	58.6	100	6/21	46	42	15.9
DW	109.5	96.9	91.5	58.1	99	6/19	37	38	13.7
UI Silver (W)	---	---	86.8	60.1	99	6/19	39	88	14.6
Golden Spike (W)	108.2	82.6	85.7	59.2	100	6/21	38	68	13.2
Gary (W)	104.6	86.6	84.6	61.6	99	6/19	42	87	14.1
UICF Grace (W)	---	---	84.2	57.7	100	6/18	47	46	15.6
Manning	110.2	98.3	83.1	56.9	100	6/17	38	76	14.7
Average	106.3	108.1	106.3	58.5	99	6/16	39	29	14.2
LSD ( $\alpha=.05$ )	11.3	20.5	27.3	4.0	1.9	2.2	2.8	35.7	
CV %	7.7	13.4	18.3	4.9	1.4	0.9	5.1	87.5	
Pr > F	<.0001	<.0001	0.0002	0.0105	0.0048	<.0001	<.0001	<.0001	

(W) = White

**Table 24. Agronomic data for winter wheat at Aberdeen, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in.)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Hard Winter Wheat</b>									
Norwest 553	---	122.6	162.8	62.5	95	6/13	41	0	12.2
Utah 100	99.7	115.9	148.3	60.2	98	6/19	46	58	12.5
BC002-02	---	127.6	147.5	62.4	94	6/13	39	38	13.1
WB-Arrowhead	---	115.9	147.2	62.9	96	6/14	43	58	11.9
ACS 55017	---	---	146.4	61.3	98	6/11	41	51	12.6
Garland	83.9	118.7	146.4	60.2	91	6/16	37	50	13.9
Yellowstone	95.2	128.1	145.6	62.5	95	6/12	44	56	13.5
NuHorizon (W)	94.7	117.5	144.0	63.5	93	6/9	43	70	13.4
Moreland	105.4	107.7	135.1	60.0	95	6/13	39	48	14.1
Eddy	93.2	112.4	134.7	62.2	93	6/13	40	60	12.0
IDO660	---	---	134.7	62.3	98	6/13	43	28	13.7
AgriPro Paladin	77.3	111.3	131.2	62.7	95	6/13	42	33	13.0
LHS (W)	---	---	129.6	61.9	100	6/19	42	74	14.1
Whetstone	99.4	104.6	129.2	61.8	94	6/9	41	64	13.1
Boundary	92.0	110.5	125.7	61.3	96	6/15	42	58	12.6
NuHills	73.9	104.6	124.1	63.3	95	6/9	41	43	13.6
Promontory	87.6	112.8	124.1	62.1	96	6/14	41	92	13.5
Decade	---	---	123.3	61.8	94	6/13	42	88	13.1
Esperia	---	101.5	121.4	60.5	95	6/9	38	58	12.1
Deloris	101.9	133.9	119.1	61.9	94	6/19	46	83	14.7
DW	97.0	119.8	112.0	60.2	98	6/18	41	97	14.8
Gary (W)	98.3	132.3	112.0	60.8	96	6/19	43	100	13.0
Manning	103.0	124.5	108.9	60.1	96	6/16	41	98	13.7
UI Darwin (W)	96.4	134.7	108.5	62.2	94	6/18	46	97	13.6
UICF Grace (W)	---	---	107.2	60.9	95	6/14	44	69	14.7
UI Silver (W)	---	---	107.2	61.0	96	6/15	43	94	16.1
Curlew	88.0	116.3	106.2	59.7	96	6/14	43	99	14.7
Weston	76.8	118.7	104.2	63.1	95	6/15	46	95	14.6
Golden Spike (W)	110.0	107.4	99.5	58.0	95	6/18	43	96	13.1
Bonneville	116.7	112.8	97.2	62.9	95	6/20	44	95	15.4
Average	96.4	115.4	126.1	61.5	95	6/14	42	68	13.5
LSD ( $\alpha=0.05$ )	18.3	19.8	20.6	1.5	5.0	1.3	4.0	36.2	
CV %	13.6	12.2	11.2	1.7	3.7	0.5	6.8	37.8	
Pr > F	<.0001	0.0006	<.0001	<.0001	0.4719	<.0001	0.0005	<.0001	

(W) = White

**Table 25. Agronomic data for winter wheat at Ririe, dryland, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in.)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Hard Winter Wheat</b>									
Bonneville	26.2	46.7	35.2	62.9	76	7/2	26	0	14.7
LHS (W)	---	---	34.5	60.6	83	7/1	21	0	11.5
IDO660	---	---	33.1	59.9	83	6/29	24	0	13.5
WB-Arrowhead	---	48.8	32.7	61.5	87	6/27	24	0	14.1
UICF Grace (W)	---	46.3	32.7	60.5	83	6/30	29	0	12.9
ACS 55017	---	---	32.3	61.5	87	6/29	24	0	12.6
Deloris	27.3	53.3	31.9	61.8	88	7/1	25	0	13.0
Yellowstone	23.0	46.0	31.2	61.4	87	6/29	22	0	11.7
400W CL2	---	---	30.9	61.9	84	6/26	23	0	11.2
Golden Spike (W)	25.8	45.4	30.5	60.6	78	7/1	23	0	11.7
Manning	20.5	46.3	30.5	60.4	80	6/30	23	0	13.7
AgriPro Paladin	---	---	28.3	61.9	83	6/29	21	0	14.0
DW	21.6	48.1	28.0	61.3	81	7/1	22	0	12.0
Curlew	26.4	51.3	26.9	62.2	86	6/29	23	0	12.8
Gary (W)	21.3	50.5	26.9	61.7	87	7/2	23	0	10.9
UI Darwin (W)	23.7	42.7	26.5	62.2	86	6/30	23	0	13.6
BC002-02	---	---	26.5	62.0	82	6/29	21	0	12.4
Moreland	21.1	49.4	26.5	59.4	77	6/29	21	0	12.6
Utah 100	27.9	48.3	26.5	61.1	81	7/1	22	0	13.0
Boundary	24.7	49.8	26.2	60.4	85	7/1	20	0	10.8
Decade	---	---	25.8	61.5	86	6/28	21	0	13.8
Whetstone	---	---	25.8	62.1	83	6/27	22	0	13.8
Eddy	24.2	42.2	24.7	61.0	80	6/28	20	0	13.1
Juniper	20.0	48.7	24.7	62.0	78	7/1	25	0	12.7
Garland	17.4	49.4	24.0	59.4	68	7/1	17	0	14.2
NuHorizon (W)	22.1	50.6	23.2	62.4	74	6/28	21	0	11.4
Weston	24.8	46.9	22.9	62.4	79	6/30	21	0	14.4
UI Silver (W)	---	53.9	22.2	62.7	78	7/1	23	0	12.1
Promontory	22.0	45.4	18.5	60.6	85	6/29	21	0	11.9
503 CL2	---	---	18.1	62.0	79	6/28	19	0	13.0
Average	23.3	46.6	27.6	61.4	82	6/29	22	0	12.8
LSD ( $\alpha=.05$ )	5.3	7.5	10.2	1.4	12.0	1.1	3.2	0	
CV %	16.2	11.5	26.3	1.6	10.5	0.4	10.1	.	
Pr > F	0.0024	<.0001	0.0934	<.0001	0.2919	<.0001	<.0001	.	

(W) = White

**Table 26. Agronomic data for winter wheat at Rockland, dryland, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in.)	Lodging (%)	Protein (%)
	2008*	2009*	2010						
<b>Hard Winter Wheat</b>									
Garland	9.6	85.5	47.6	58.9	86	6/20	22	0	11.1
ACS 55017	---	---	46.4	61.4	91	6/16	28	0	9.7
Deloris	9.7	98.6	45.9	61.8	91	6/20	33	0	10.2
BC002-02	---	---	43.9	60.6	86	6/16	27	0	11.8
Yellowstone	6.4	99.1	43.5	60.6	86	6/18	30	0	10.8
Whetstone	---	---	43.0	61.1	89	6/14	29	0	11.3
Utah 100	8.7	96.4	42.3	60.0	91	6/20	32	0	9.9
Decade	---	---	42.2	61.3	90	6/16	28	0	13.2
AgriPro Paladin	---	---	42.0	62.0	90	6/17	28	0	11.9
LHS (W)	---	---	41.7	59.4	91	6/21	28	0	10.1
Curlew	6.2	93.8	41.6	61.4	89	6/17	33	0	9.9
Boundary	7.8	87.8	40.8	58.7	81	6/20	26	0	9.6
Juniper	8.1	84.7	40.1	61.1	86	6/18	36	0	12.0
DW	9.6	97.1	40.0	61.0	89	6/20	27	0	10.6
UI Silver (W)	---	101.3	39.2	61.6	91	6/19	30	0	9.7
WB-Arrowhead	---	95.6	39.1	61.1	89	6/16	29	0	11.0
Promontory	8.5	102.1	38.7	62.2	88	6/17	30	0	10.2
UICF Grace (W)	---	78.7	37.1	60.0	91	6/16	35	0	9.9
Gary (W)	10.0	88.7	37.1	59.7	85	6/21	29	0	10.6
UI Darwin (W)	5.9	85.5	36.0	62.4	89	6/20	30	0	12.1
Bonneville	9.1	69.0	35.6	61.7	91	6/21	29	0	11.8
Golden Spike (W)	19.8	94.5	35.6	59.0	88	6/20	29	0	10.9
NuHorizon (W)	8.3	99.2	35.5	61.7	89	6/14	28	0	9.5
Moreland	14.5	93.9	35.4	58.9	88	6/17	25	0	11.0
IDO660	---	---	35.3	59.7	89	6/16	28	0	11.2
400W CL2	---	---	34.4	61.0	88	6/14	28	0	9.3
Weston	22.0	78.6	34.0	61.3	90	6/18	32	0	12.0
Eddy	5.6	86.0	32.2	61.1	86	6/17	27	0	10.3
Manning	13.1	89.4	31.5	59.6	88	6/19	28	0	12.9
503 CL2	---	---	31.3	61.8	89	6/15	25	0	12.9
Average	10.3	90.5	39.0	60.7	88	6/18	29	0	10.9
LSD (a=.05)	9.6	8.6	7.3	0.9	4.6	1.6	1.5	0	
CV %	57.3	6.7	13.2	1.1	3.7	0.6	3.8	.	
Pr >F	0.0117	<.0001	<.0001	<.0001	0.0059	<.0001	<.0001	.	

(W) = White

\*Preston Data

**Table 27. Agronomic data for winter wheat at Kimberly, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand%	Heading Date	Height (in.)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Soft White Winter Wheat</b>									
Agripro Legion	---	151.7	149.2	59.5	100	6/12	39	0	7.1
Bruneau	144.5	146.5	148.1	61.2	100	6/13	37	0	6.8
Lambert	124.5	146.3	145.2	60.4	100	6/9	38	0	7.4
Tubbs 06	150.9	150.0	144.1	60.8	99	6/13	39	0	7.9
Agripro Salute	145.0	140.1	141.2	60.6	100	6/12	38	0	7.8
Bitterroot	148.4	142.4	138.3	60.8	100	6/13	40	0	7.1
Xerpha	146.0	131.6	138.0	61.3	100	6/14	37	0	7.9
UICF Lambert	138.4	140.2	137.9	60.1	100	6/9	38	0	7.2
WB-528	140.5	141.0	137.6	61.3	100	6/8	34	0	7.5
Simon	136.8	139.2	137.2	60.3	100	6/12	37	0	7.3
00-475-2DH	148.6	149.7	135.8	62.2	99	6/13	36	0	6.9
ID98-19010A	---	---	135.4	60.7	99	6/9	34	0	7.0
Brundage	149.1	144.2	135.0	62.2	100	6/8	33	0	8.0
IDO663	---	---	134.3	60.5	100	6/9	34	0	7.9
AP Badger	---	---	134.0	58.8	100	6/11	31	0	6.9
AP Legacy	---	---	134.0	60.5	100	6/13	36	0	7.0
Brundage 96	138.5	136.9	133.9	59.9	100	6/10	34	0	7.5
Daws	131.1	138.8	133.9	61.4	99	6/14	39	0	7.9
ORCF-102	130.4	146.1	131.8	60.7	100	6/14	37	0	7.7
WB-Junction	---	---	130.0	61.2	100	6/6	34	0	7.1
Madsen	131.4	140.8	130.0	60.8	99	6/15	36	0	7.8
UICF Brundage	133.2	131.3	128.1	60.0	100	6/12	33	0	7.8
Stephens	136.8	131.8	126.7	61.0	99	6/13	37	0	7.3
Bruehl*	151.8	136.1	124.5	58.6	100	6/18	39	0	7.5
Goetze	---	133.1	123.8	59.5	98	6/7	31	0	7.6
WB 456	---	132.1	123.4	63.0	98	6/8	32	0	8.4
ORCF-101	141.2	133.2	122.4	60.7	100	6/12	35	0	7.9
Skiles	141.6	135.2	119.8	62.2	98	6/12	34	0	8.0
Coda*	129.3	139.8	119.1	62.6	98	6/15	37	0	8.8
Westbred 470	---	139.9	115.7	63.8	97	6/8	36	0	7.9
Average	138.1	138.9	132.9	60.9	99	6/11	36	0	7.6
LSD ( $\alpha=.05$ )	19.9	8.0	11.1	0.5	1.8	1.2	1.9	0.0	
CV %	10.3	11.9	5.9	0.6	1.3	0.5	3.8	.	
Pr > F	0.1556	0.0034	<.0001	<.0001	0.0495	<.0001	<.0001	.	

\* = Club Wheat

**Table 28. Agronomic data for winter wheat at Rupert, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand%	Heading Date	Height (in.)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Soft White Winter Wheat</b>									
Brundage	89.7	133.0	141.6	58.7	100	6/14	38	49	12.7
AP Badger	---	---	136.1	53.2	100	6/20	34	14	13.2
WB 456	---	132.6	131.8	59.8	100	6/13	34	8	12.4
ID98-19010A	---	---	130.3	56.3	100	6/17	38	23	12.3
Xerpha	84.3	122.1	129.6	55.0	100	6/22	39	81	13.2
Westbred 470	---	119.5	129.6	59.2	99	6/13	35	31	13.3
UICF Lambert	87.9	123.5	129.2	53.4	100	6/18	39	35	14.7
Brundage 96	92.5	124.0	128.9	54.6	100	6/20	38	18	13.6
WB-528	87.0	111.8	128.5	59.3	100	6/16	37	45	11.6
Simon	85.4	120.6	127.8	55.5	100	6/21	38	13	14.0
Skiles	95.2	115.9	126.7	57.0	100	6/23	36	9	12.4
AP Legacy	---	---	126.3	55.8	99	6/22	39	4	13.5
ORCF-101	84.1	121.5	125.3	55.9	100	6/20	38	17	13.1
Agripro Salute	86.3	131.4	124.2	53.6	100	6/21	42	18	14.2
00-475-2DH	88.8	113.3	123.4	56.0	100	6/21	34	78	12.5
Madsen	81.6	122.7	120.2	55.1	100	6/23	38	9	14.2
UICF Brundage	85.6	115.3	120.1	54.3	100	6/19	34	66	13.8
Tubbs 06	87.8	126.0	119.4	53.2	100	6/22	38	10	12.8
Daws	100.5	110.8	117.6	55.5	100	6/22	40	53	13.3
Lambert	87.5	132.1	117.6	55.0	100	6/19	38	9	14.3
WB-Junction	---	---	117.3	54.4	100	6/13	33	93	13.2
Bruneau	77.7	126.5	115.5	54.1	100	6/22	36	89	13.4
IDO663	---	---	115.5	53.6	100	6/17	38	30	14.4
ORCF-102	84.4	130.6	114.4	54.1	99	6/22	39	43	13.4
Bitterroot	77.0	125.2	110.7	55.5	100	6/22	39	20	13.8
Stephens	81.4	112.2	110.4	53.6	99	6/21	37	59	14.1
Agripro Legion	---	130.1	109.6	50.8	100	6/22	37	89	14.1
Goetze	---	127.2	105.3	55.1	98	6/13	33	0	12.6
Bruehl*	72.1	121.6	103.1	51.5	100	6/25	39	75	14.9
Coda*	87.6	123.4	94.4	54.6	100	6/24	40	85	15.9
Average	85.7	122.4	121.0	55.1	100	6/19	37	39	13.5
LSD ( $\alpha=.05$ )	13.9	20.3	13.6	2.3	1.0	2.0	2.6	37.6	
CV %	11.4	11.8	8.0	3.0	0.7	0.8	5.0	68.9	
Pr > F	0.005	0.3813	<.0001	<.0001	0.0193	<.0001	<.0001	<.0001	

\* = Club Wheat

**Table 29. Agronomic data for winter wheat at Aberdeen, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in.)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Soft White Winter Wheat</b>									
Skiles	97.7	113.0	156.1	61.8	94	6/18	38	11	11.5
ORCF-101	115.0	130.4	155.7	61.3	93	6/15	41	3	10.9
AP Badger	---	---	153.4	59.8	96	6/14	36	60	11.3
Agripro Salute	103.7	111.9	146.4	60.8	94	6/15	41	28	12.7
Brundage	96.6	110.4	146.4	62.2	95	6/12	39	38	11.0
Westbred 470	---	120.3	145.6	63.2	95	6/9	41	40	11.1
Tubbs 06	103.3	129.7	144.8	59.4	93	6/15	42	58	11.8
AP Legacy	---	---	144.4	61.6	94	6/17	42	30	11.9
Bitterroot	106.7	131.3	144.4	60.7	93	6/16	42	65	12.1
ID98-19010A	---	---	144.4	60.8	93	6/13	38	53	11.3
Goetze	---	114.3	144.0	60.1	93	6/9	38	25	10.9
Simon	109.7	129.8	143.2	60.9	93	6/15	41	35	11.7
Xerpha	126.1	128.0	143.2	61.9	96	6/19	41	55	11.9
UICF Brundage	113.6	127.2	141.7	60.1	94	6/15	37	35	11.5
IDO663	---	---	141.3	59.9	96	6/14	40	38	12.6
ORCF-102	107.5	122.0	140.9	60.0	94	6/16	41	71	12.5
Madsen	99.7	126.1	140.5	60.6	94	6/17	40	58	12.2
WB 456	---	106.8	139.7	62.3	93	6/9	38	35	11.9
Bruneau	121.5	125.6	139.3	60.3	94	6/18	40	78	11.6
WB-528	93.8	134.1	139.3	61.3	98	6/10	40	70	12.1
WB-Junction	---	---	138.6	61.1	96	6/10	39	73	12.1
00-475-2DH	121.4	116.3	133.1	61.5	95	6/18	39	69	12.6
Brundage 96	113.7	128.0	131.9	59.6	94	6/14	38	60	12.6
Coda*	114.5	133.6	130.4	60.6	93	6/21	42	70	14.5
Agripro Legion	---	117.9	130.0	58.0	95	6/15	40	78	13.1
Lambert	105.3	126.2	129.6	60.1	94	6/14	42	66	13.1
Bruehl*	101.4	117.3	129.2	57.9	95	6/20	42	60	13.2
Daws	100.4	119.7	128.8	61.1	93	6/19	42	48	12.0
UICF Lambert	98.0	118.9	128.8	60.2	95	6/14	42	38	12.6
Stephens	104.5	123.5	125.3	59.3	95	6/17	40	53	12.7
Average	106.7	122.0	140.0	60.6	94	6/15	40	50	12.1
LSD ( $\alpha=.05$ )	14.1	18.2	13.6	1.4	3.9	1.7	1.9	30.7	
CV %	9.4	10.5	6.9	1.7	2.9	0.7	3.4	43.9	
Pr > F	0.0002	0.0995	0.0001	<.0001	0.3832	<.0001	<.0001	<.0001	

\* = Club Wheat

**Table 30. Agronomic data for winter wheat at Ririe, dryland, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in.)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Soft White Winter Wheat</b>									
Coda*	15.6	52.9	33.4	61.2	81	7/2	21	0	11.2
00-475-2DH	22.2	50.5	30.9	61.6	81	7/3	21	0	10.5
Stephens	16.4	44.5	30.5	61.1	81	7/3	20	0	10.9
AP Badger	---	---	29.8	57.5	84	7/2	18	0	10.5
Xerpha	22.0	48.0	29.8	59.3	74	7/3	20	0	11.5
UICF Brundage	16.8	45.5	29.4	57.5	88	7/1	19	0	9.6
Bitterroot	16.4	51.3	28.7	60.7	85	7/3	21	0	11.9
Bruehl*	20.0	52.2	28.7	59.4	82	7/4	21	0	10.9
ORCF-102	20.4	47.4	28.3	60.3	81	7/3	21	0	11.5
IDO663	---	---	28.0	59.4	90	6/28	19	0	10.0
ORCF-101	18.7	43.2	28.0	59.0	86	7/3	20	0	12.0
AP Legacy	---	---	26.5	59.4	82	7/2	20	0	10.3
ID98-19010A	---	---	26.5	60.1	85	6/29	19	0	9.9
UICF Lambert	19.5	42.5	25.8	58.4	93	6/29	24	0	8.5
Bruneau	23.1	45.2	24.7	60.0	88	7/3	20	0	9.7
Brundage 96	17.3	40.8	24.3	57.7	91	7/1	19	0	10.5
Goetze	---	45.7	24.3	59.1	71	6/29	20	0	11.2
Lambert	21.2	34.6	24.0	59.0	89	6/29	23	0	10.7
Agripro Legion	---	47.4	23.6	58.8	85	7/2	21	0	9.6
Madsen	19.8	47.7	23.2	59.7	86	7/3	21	0	11.4
Simon	19.0	47.4	23.2	59.4	87	7/2	20	0	10.0
WB-528	20.3	44.1	23.2	61.1	83	6/29	21	0	11.1
Agripro Salute	19.7	46.6	22.1	58.4	89	6/30	20	0	10.0
Skiles	19.6	38.1	22.1	60.1	84	7/3	19	0	11.1
Daws	17.6	47.0	21.1	60.6	79	7/2	19	0	10.6
Tubbs 06	20.0	45.6	21.1	58.3	85	7/2	21	0	10.3
Brundage	18.9	32.5	20.3	60.2	89	6/27	20	0	10.7
Westbred 470	---	42.1	20.0	61.8	74	6/28	19	0	11.7
WB 456	---	38.0	19.2	59.8	71	6/29	19	0	10.5
WB-Junction	---	---	16.7	59.8	90	6/26	22	0	9.7
Average	19.1	45.0	25.2	59.6	84	7/1	20	0	10.6
LSD ( $\alpha=.05$ )	5.3	8.8	6.0	0.7	8.5	0.9	1.9	0	
CV %	20.0	13.9	16.8	0.8	7.2	0.3	6.6	.	
Pr > F	0.1789	0.0014	<.0001	<.0001	<.0001	<.0001	<.0001	.	

\* = Club Wheat

**Table 31. Agronomic data for winter barley at Rupert, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in)	Lodging (%)	Protein (%)	Plump		
	2008	2009	2010							(>6/64)	(>5.5/64)	% Thin
02Ab339	113.8	157.9	173.8	49.8	98	6/11	34	5	9.0	54.2	30.3	15.8
Alba	120.3	145.4	169.7	50.0	93	6/7	33	1	7.3	92.2	6.3	2.3
OR91	---	---	167.4	52.4	97	6/7	33	6	9.1	79.5	13.3	7.3
Kamiak	---	---	165.8	50.5	100	5/31	35	0	8.6	88.5	8.9	2.4
Eight-Twelve	105.5	166.6	163.8	49.5	96	6/7	33	0	7.3	80.3	13.7	6.3
Schuyler	126.0	136.3	162.1	50.1	99	6/10	36	11	14.3	64.4	21.4	11.4
94Ab1777	141.9	157.7	161.1	48.8	91	6/5	36	0	8.2	63.4	24.1	12.6
Sunstar Pride	134.0	178.2	158.4	48.3	92	6/17	36	0	6.8	50.2	22.4	27.9
02Ab2701	120.5	166.3	156.1	48.6	98	6/10	40	25	8.5	70.3	18.6	11.2
Maja	---	132.7	156.1	51.4	96	6/6	34	1	7.9	89.2	7.8	3.2
Sprinter	118.8	158.6	154.9	49.0	99	6/10	37	6	8.1	57.3	29.6	13.5
OR92	---	---	154.7	49.8	73	6/6	34	15	8.5	83.3	10.0	6.5
02Ab2732	136.1	160.5	152.5	48.8	93	6/12	36	10	7.7	80.9	12.1	7.2
OR83	---	---	152.0	49.6	95	6/1	32	43	8.4	50.6	33.0	17.4
93Ab669	123.2	170.5	151.6	50.5	90	6/7	34	1	7.9	84.7	10.2	5.1
Mathias	---	120.9	151.3	50.0	99	6/1	33	0	8.4	92.5	5.8	2.1
OR93	---	---	151.1	48.8	94	6/8	35	23	8.9	79.9	13.6	6.9
OR813	---	---	145.2	51.4	92	6/1	33	0	8.9	93.9	4.5	2.2
OR819	---	---	144.0	50.3	94	6/8	35	0	8.1	86.1	9.9	4.9
OR85	---	---	141.6	55.1	95	6/4	30	0	14.2	54.6	29.5	17.0
OR816	---	---	139.2	49.7	86	6/9	38	23	8.4	84.3	10.7	5.5
02Ab2739	114.7	166.6	138.9	47.9	87	6/11	35	10	8.3	74.0	15.8	10.5
Strider	111.7	137.5	138.9	50.3	93	6/7	36	0	9.3	85.0	9.9	5.3
OR815	---	---	138.4	53.1	88	6/7	35	1	8.1	91.8	5.9	2.7
OR94	---	---	133.4	50.3	93	6/8	32	0	9.1	84.8	11.2	4.7
OR86	---	---	129.3	58.8	85	6/9	32	1	8.1	68.9	25.1	6.0
OR818	---	---	117.5	49.9	87	6/8	31	0	9.2	83.4	11.5	5.8
Charles	95.7	156.3	103.5	51.8	30	6/8	30	0	10.2	84.4	9.6	6.6
Endeavor	100.8	148.6	92.6	52.7	21	6/11	33	0	8.8	85.3	8.6	6.2
M 69	---	---	10.9	53.5	7	5/5	21	13	10.4	81.9	10.3	8.0
Average	119.2	153.3	147.1	50.6	88	6/7	34	6	8.9	77.3	14.8	8.2
LSD ( $\alpha=.05$ )	19.3	20.7	32.6	1.7	16.3	2.2	3.8	24.9				
CV %	11.6	12.0	14.9	2.4	13.2	1.0	7.9	282.9				
Pr > F	<.0001	0.0008	0.0019	<.0001	<.0001	<.0001	0.0005	0.1498				

**Table 32. Agronomic data for winter barley at Aberdeen, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in.)	Lodging (%)	Protein (%)	Plump		
	2008	2009	2010							(>6/64)	(>5.5/64)	% Thin
02Ab2732	72.2	157.6	201.7	49.4	58	6/6	38	43	6.6	85.0	10.1	4.9
OR819	---	---	199.6	49.4	90	6/2	37	6	9.4	87.1	9.7	3.3
OR818	---	---	196.1	49.2	91	6/3	36	26	9.4	88.8	8.4	2.8
OR94	---	---	195.7	49.3	89	6/2	37	25	9.3	91.8	6.3	2.5
02Ab2739	88.3	154.2	189.8	47.7	76	6/6	39	75	7.3	66.9	21.7	12.0
94Ab1777	101.3	161.0	189.3	49.5	69	6/5	40	60	8.0	59.9	25.1	15.2
93Ab669	150.5	175.7	186.4	49.8	65	6/5	41	48	7.2	72.4	17.5	10.3
OR92	---	---	184.9	49.1	90	6/2	37	31	8.5	90.0	8.0	2.5
Strider	135.0	173.0	182.0	49.4	83	6/3	39	81	7.6	86.7	9.0	4.6
OR91	---	---	178.6	49.0	90	6/2	36	23	9.8	84.0	12.3	4.4
Sunstar Pride	123.8	190.0	172.2	48.5	74	6/11	37	30	7.1	56.0	20.3	24.1
Maja	---	143.9	171.7	50.4	90	6/4	36	38	7.9	77.5	14.4	8.9
Kold	---	---	169.8	49.9	86	6/7	38	40	8.5	73.1	17.9	9.4
OR93	---	---	162.5	49.7	89	6/2	37	29	8.6	86.7	9.8	3.6
OR816	---	---	156.6	50.1	89	6/3	41	55	7.5	89.6	7.1	3.5
02Ab2701	124.5	172.2	154.7	48.6	79	6/5	40	89	7.1	67.0	18.8	14.7
Endeavor	36.5	143.4	154.7	52.1	68	6/6	38	58	8.7	84.5	9.0	7.1
OR85	---	---	147.8	55.4	66	6/1	35	55	12.8	52.4	31.4	16.1
Eight-Twelve	106.3	157.6	143.0	49.5	81	6/4	41	38	7.6	77.1	14.1	9.4
Charles	10.6	134.7	142.0	51.1	63	6/3	35	51	8.0	87.0	6.7	6.9
Mathias	---	121.5	137.6	52.6	88	5/31	41	25	8.5	92.8	4.3	3.1
Sprinter	118.76	155.15	134.7	50.7	86	6/9	41	86	8.7	69.5	17.9	12.8
Alba	120.8	146.9	132.7	51.2	83	6/4	39	55	8.3	87.4	8.2	4.7
Schuyler	142.1	153.7	131.7	49.5	83	6/8	42	80	8.2	60.9	19.3	20.0
OR83	---	---	128.8	51.5	80	5/31	36	34	8.8	86.8	9.8	3.6
OR813	---	---	126.9	52.0	84	5/31	42	20	8.5	93.6	4.8	1.8
OR86	---	---	118.1	57.1	45	6/6	36	91	13.7	37.4	33.0	30.0
02Ab339	19.2	105.9	116.1	51.3	85	6/9	42	80	8.4	67.2	19.8	13.2
Kamiak	---	---	113.2	49.8	93	5/31	37	66	8.9	84.6	10.1	5.9
OR815	---	---	111.7	52.2	81	6/3	42	30	7.6	88.0	8.5	3.9
Average	95.0	153.1	157.7	50.5	80	6/4	38	49	8.6	77.7	13.8	8.8
LSD ( $\alpha=.05$ )	33.5	20.6	39.4	1.2	12.4	1.5	3.0	32.3				
CV %	25.5	9.4	17.6	1.7	11.1	0.7	5.6	47.0				
Pr > F	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001			

**Table 33. Agronomic data for spring wheat at Rupert, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand%	Heading Date	Height (in)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Hard Spring Wheat</b>									
Lolo (W)	137.8	125.6	125.6	64.0	100	6/29	37	0	11.2
WB-Idamax (W)	---	102.0	118.0	63.5	100	6/25	32	0	11.9
Otis (W)	136.5	124.1	116.5	63.6	99	6/29	42	0	10.3
Cabernet	131.8	101.6	114.7	63.9	100	6/27	31	0	12.2
Blanca Grande (W)	137.7	99.5	114.3	64.5	100	6/26	30	0	11.9
Jerome	158.0	124.5	113.6	62.8	100	6/27	35	0	11.7
IDO 667	142.3	114.3	113.3	64.9	100	6/28	36	0	12.3
Bullseye	137.5	114.7	112.2	64.9	100	6/28	33	0	12.0
Lochsa (W)	134.5	112.5	112.2	61.3	100	6/29	38	0	12.5
WB-Paloma (W)	---	103.8	112.2	64.6	100	6/27	34	0	11.2
Iona	139.4	115.4	111.8	63.8	100	6/28	40	0	12.0
OR4990114	126.7	109.6	111.8	62.0	100	6/26	34	0	11.8
Pristine (W)	128.9	105.3	111.4	63.9	100	6/26	38	0	12.1
Tara 2002	125.2	89.3	111.3	62.7	100	6/26	42	0	12.2
WB-Fuzion	---	110.7	111.1	63.8	100	6/26	39	0	12.5
WestBred 936	122.3	105.6	110.7	62.1	100	6/28	34	0	12.7
Jefferson	138.4	104.2	110.4	62.9	100	6/27	37	0	11.6
IDO 702	---	---	109.3	62.8	99	6/29	37	0	11.2
Malbec	129.2	99.5	109.3	63.3	100	6/26	33	0	12.3
Snow Crest (W)	130.5	97.6	108.5	64.0	100	6/26	30	0	12.1
UI Winchester	121.0	98.7	108.5	63.5	100	6/28	36	0	11.7
RSI 03W10348 (W)	---	102.4	107.1	63.4	100	6/26	33	0	11.8
Choteau	128.5	104.5	104.5	63.1	100	6/28	37	0	13.1
Kelse	113.2	104.9	103.8	62.7	100	6/29	39	0	14.0
Volt	---	---	101.3	64.7	100	6/29	34	0	11.7
Klasic (W)	125.0	106.0	100.6	63.9	100	6/26	25	0	11.3
SJ908-247	---	---	94.0	63.8	100	6/27	28	0	13.3
<b>Durum Wheat</b>									
Kronos	146.6	106.4	119.1	63.1	100	6/26	33	0	11.5
Matt	126.7	108.5	113.3	63.4	100	6/27	35	0	11.7
Utopia	129.2	105.3	112.2	63.0	100	6/29	32	0	11.5
Alzada	126.2	105.6	107.4	63.9	100	6/28	37	0	11.6
Average	132.2	107.2	110.6	63.5	100	6/27	35	0	12.0
LSD ( $\alpha=0.05$ )	16.8	10.0	9.6	0.9	0.8	1.9	2.5	0	
CV %	9.0	6.7	6.1	1.0	0.6	0.8	5.1	.	
Pr > F	0.0044	<.0001	<.0001	<.0001	0.5951	<.0001	<.0001	.	

(W) = White

**Table 34. Agronomic data for spring wheat, Aberdeen, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand%	Heading Date	Height (in)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Hard Spring Wheat</b>									
Lolo (W)	124.9	132.9	138.2	62.2	98	6/28	35	33	12.5
Choteau	101.5	123.6	133.9	61.6	96	6/28	37	0	14.1
IDO 667	93.2	123.6	129.6	62.0	99	6/26	34	55	14.1
Bullseye	113.2	128.1	128.8	63.0	100	6/27	32	1	12.9
Malbec	83.7	126.4	127.6	61.8	100	6/26	34	0	13.5
WB-Idamax (W)	---	111.4	126.5	60.6	100	6/24	30	0	13.3
Otis (W)	107.7	140.2	125.7	62.3	100	6/27	45	0	13.1
Jerome	107.0	126.9	124.5	60.8	100	6/25	34	0	12.8
RSI 03W10348 (W)	---	110.2	123.3	61.4	100	6/24	32	0	12.6
Volt	---	---	123.3	63.4	99	6/27	32	0	12.7
Kelse	106.4	114.8	122.2	61.7	99	6/27	38	3	14.1
Cabernet	102.0	120.7	121.8	61.7	98	6/26	31	13	12.9
Blanca Grande (W)	79.6	114.9	121.0	63.0	100	6/24	31	0	12.4
Snow Crest (W)	75.1	111.7	119.8	60.8	99	6/22	33	0	13.4
UI Winchester	101.3	120.8	119.4	61.0	100	6/26	35	4	13.6
WestBred 936	99.3	115.3	119.0	59.3	100	6/27	35	21	14.0
WB-Paloma (W)	---	119.1	119.0	61.3	100	6/23	30	0	13.7
IDO 702	---	---	118.3	59.5	99	6/26	35	0	13.6
OR4990114	85.5	124.4	117.9	59.5	100	6/25	32	0	13.1
WB-Fuzion	---	123.5	116.7	61.8	100	6/25	35	0	14.9
Jefferson	93.6	128.4	115.5	61.5	100	6/26	35	0	14.1
Tara 2002	74.9	110.9	114.8	60.5	100	6/24	36	13	14.0
Lochsa (W)	92.7	128.4	114.4	57.2	100	6/27	37	0	14.5
Pristine (W)	102.0	113.6	113.2	61.7	100	6/25	37	0	14.4
Klasic (W)	93.9	116.0	111.2	61.1	98	6/22	30	0	13.7
SJ908-247	---	---	110.1	61.9	99	6/27	30	0	14.9
Iona	109.6	118.9	107.7	59.8	100	6/26	38	23	15.2
<b>Durum Wheat</b>									
Alzada	94.1	119.8	125.3	61.5	100	6/26	33	23	14.1
Utopia	94.4	108.2	124.5	60.6	94	6/27	32	39	13.7
Matt	99.3	108.4	123.0	60.9	100	6/26	34	0	13.6
Kronos	86.7	103.9	118.7	59.4	100	6/24	30	0	13.9
Average	96.7	119.5	121.1	61.1	99	6/25	34	7	13.6
LSD ( $\alpha=.05$ )	26.4	10.0	14.4	1.7	2.8	1.1	3.7	26.5	
CV %	19.3	6.0	8.5	1.9	2.0	0.5	7.7	257.5	
Pr > F	0.0204	<.0001	0.0210	<.0001	0.0065	<.0001	<.0001	0.0039	

(W) = White

**Table 35. Agronomic data for spring wheat, Idaho Falls, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand%	Heading Date	Height (in)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Hard Spring Wheat</b>									
Lolo (W)	139.9	150.8	145.9	63.4	100	7/3	40	0	11.5
Otis (W)	138.8	141.3	143.4	63.9	100	7/2	41	0	10.6
IDO 702	---	---	132.1	62.5	100	7/3	38	0	11.3
Bullseye	141.3	120.9	131.4	64.8	100	7/2	36	0	11.7
Jefferson	126.0	131.2	130.3	62.8	100	7/2	39	0	12.1
OR 4990114	122.3	121.4	130.0	61.0	100	6/30	35	0	11.9
Pristine (W)	132.6	123.3	129.2	63.5	100	6/30	40	0	12.3
WB-Idamax (W)	---	128.1	127.8	61.6	100	6/30	34	0	12.8
IDO 667	141.3	126.4	127.1	64.0	100	7/1	37	0	11.3
Iona	133.7	126.3	126.3	63.4	100	6/30	38	0	11.2
Jerome	125.4	125.3	125.2	61.7	100	7/1	35	0	10.8
Lochsa (W)	117.3	130.4	125.2	61.6	100	7/2	37	0	12.9
RSI 03W10348 (W)	---	112.3	125.2	61.9	100	6/30	32	0	11.4
WB-Paloma (W)	---	118.0	124.5	62.3	100	6/29	33	0	12.0
Volt	---	---	123.1	64.3	100	7/3	36	0	11.9
Malbec	138.8	112.3	120.9	62.3	100	6/30	34	0	12.1
UI Winchester	126.9	122.4	120.5	62.5	100	7/2	36	0	11.6
WB-Fuzion	---	122.2	120.2	63.0	100	6/30	40	0	12.5
Choteau	128.2	117.1	119.4	63.2	100	7/2	38	0	11.9
Tara 2002	143.9	131.6	116.5	62.6	100	7/1	45	0	11.8
WestBred 936	132.5	126.0	116.5	61.1	100	7/2	33	0	12.7
Blanca Grande (W)	128.0	117.2	115.1	63.4	100	6/29	32	0	10.8
Cabernet	123.0	114.2	114.7	61.9	100	6/30	30	0	11.8
Snow Crest (W)	144.7	111.2	111.8	62.0	100	6/29	29	0	12.5
Kelse	136.6	115.4	110.7	62.5	100	7/3	37	0	12.9
Klasic (W)	128.5	102.0	109.3	62.3	100	6/29	28	0	11.7
SJ908-247	---	---	94.7	61.9	100	7/1	27	0	13.4
<b>Durum Wheat</b>									
Kronos	127.0	110.5	123.4	62.3	100	6/29	30	0	12.4
Utopia	126.0	109.1	119.8	62.5	100	7/2	29	0	8.8
Alzada	131.6	114.4	118.3	63.2	100	7/1	34	0	10.7
Matt	140.9	103.4	112.2	62.5	100	7/1	35	0	10.9
Average	132.1	120.9	123.2	62.6	100	7/1	35	0	11.8
LSD ( $\alpha=.05$ )	17.7	10.7	8.7	0.8	0	0.9	3.2	0	
CV %	9.5	6.2	5.0	0.9	0	0.3	6.5	.	
Pr > F	0.0604	<.0001	<.0001	<.0001	.	<.0001	<.0001	.	

(W) = White

**Table 36. Agronomic data for spring wheat at Ashton, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Hard Spring Wheat</b>									
WB-Paloma (W)	---	84.9	69.0	59.4	100	7/21	31	0	9.0
Bullseye	90.2	92.9	62.4	59.5	100	7/25	31	0	9.4
Lolo (W)	106.1	98.7	61.3	58.0	100	7/26	35	0	9.0
OR4990114	79.8	83.9	61.0	58.5	100	7/24	34	0	9.4
Jerome	84.8	92.2	59.9	58.2	100	7/23	32	0	9.7
Pristine (W)	80.0	79.5	58.8	60.9	100	7/21	35	0	10.6
Iona	94.3	89.7	58.4	59.9	100	7/25	37	0	9.8
Jefferson	84.9	91.5	57.0	59.7	100	7/24	33	0	10.1
Tara 2002	73.2	88.9	57.0	57.6	100	7/23	41	0	9.6
WB-Idamax (W)	---	94.4	55.9	58.5	100	7/23	30	0	9.6
Lochsa (W)	91.7	89.3	55.5	56.8	100	7/24	34	0	10.7
Kelse	91.9	77.0	54.8	57.9	100	7/26	37	0	10.3
Klasic (W)	58.5	76.2	54.5	60.7	100	7/21	26	0	10.3
Volt	---	---	53.7	59.8	100	7/27	34	0	9.6
Choteau	88.3	80.9	53.0	60.0	100	7/25	33	0	11.4
UI Winchester	89.2	89.7	53.0	59.7	100	7/24	32	0	9.2
IDO 667	91.6	95.5	51.5	61.1	100	7/23	31	0	10.5
RSI 03W10348 (W)	---	94.4	51.5	60.9	100	7/21	31	0	9.0
IDO 702	---	---	50.1	59.1	100	7/24	34	0	10.4
Blanca Grande (W)	71.1	73.7	48.3	62.0	100	7/20	28	0	9.5
Malbec	87.1	92.2	47.2	59.3	100	7/22	30	0	10.5
Otis (W)	105.9	102.0	47.2	58.7	100	7/25	38	0	10.3
Snow Crest (W)	76.6	74.1	47.2	60.9	100	7/20	29	0	10.2
WB-Fuzion	---	74.8	46.5	59.7	100	7/22	34	0	10.7
WestBred 936	77.9	84.2	45.0	57.9	100	7/23	29	0	10.4
Cabernet	97.1	90.4	44.3	61.0	100	7/23	25	0	9.6
SJ908-247	---	---	33.8	60.5	100	7/24	25	0	11.5
<b>Durum Wheat</b>									
Utopia	75.1	97.3	61.0	56.7	100	7/24	30	0	8.9
Kronos	80.6	82.4	54.8	60.0	100	7/20	26	0	8.9
Alzada	78.3	84.6	53.7	60.1	100	7/21	32	0	9.4
Matt	64.8	77.7	53.7	60.6	100	7/22	30	0	9.3
Average	84.1	86.9	53.6	59.5	100	7/23	32	0	9.9
LSD ( $\alpha=.05$ )	18.0	11.5	9.8	0.9	0.3	2.0	3.0	0.0	
CV %	12.8	9.5	12.9	1.0	0.2	0.7	6.6	.	
Pr > F	<.0001	<.0001	<.0001	<.0001	0.5384	<.0001	<.0001	.	

(W) = White

**Table 37. Agronomic data for spring wheat at Soda Springs, dryland, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Hard Spring Wheat</b>									
Otis (W)	34.7	92.7	43.2	57.9	95	7/27	29	0	9.5
Jerome	28.5	81.9	40.3	57.8	94	7/25	24	0	8.8
OR4990114	22.3	84.0	39.2	57.9	95	7/24	24	0	8.4
IDO 665	23.0	73.3	37.0	57.4	94	7/24	26	0	9.5
Iona	23.9	76.6	36.7	58.1	93	7/26	27	0	10.6
Lolo (W)	39.9	88.3	35.9	58.4	90	7/27	26	0	9.7
WB-Paloma (W)	---	84.0	35.9	58.7	94	7/24	23	0	9.3
Tara 2002	26.2	77.2	34.1	56.2	91	7/24	27	0	10.1
Bullseye	27.0	77.1	33.8	58.3	94	7/25	22	0	9.5
Jefferson	31.6	80.2	33.4	59.6	91	7/26	24	0	10.2
WB-Idamax (W)	---	80.6	33.4	57.4	93	7/26	23	0	9.1
WB-Fuzion	---	63.2	33.0	59.4	96	7/24	25	0	10.8
UI Winchester	31.4	76.0	32.7	58.3	91	7/26	24	0	9.8
WestBred 936	26.6	73.5	32.7	57.3	94	7/24	23	0	10.0
Pristine (W)	29.0	71.2	31.9	59.1	91	7/24	26	0	11.5
Blanca Grande (W)	26.2	69.3	31.6	59.6	93	7/22	22	0	10.0
Lochsa (W)	28.9	81.9	31.6	57.2	90	7/26	26	0	10.0
IDO 702	---	---	30.9	55.9	93	7/26	25	0	11.4
Klasic (W)	23.3	57.4	30.9	61.4	94	7/22	18	0	9.5
Snow Crest (W)	31.0	67.2	30.9	59.4	91	7/22	22	0	9.7
IDO 667	29.7	85.8	30.5	58.3	93	7/26	24	0	9.9
Kelse	---	70.1	30.1	54.4	95	7/28	28	0	10.8
RSI 03W10348 (W)	---	72.2	29.4	60.1	93	7/24	22	0	8.5
Volt	---	---	27.6	58.3	91	7/30	23	0	10.4
Cabernet	35.1	73.3	26.5	59.0	90	7/29	20	0	9.3
Choteau	28.8	69.0	25.0	56.5	90	7/27	23	0	12.7
SJ908-247	---	---	16.0	54.0	91	7/29	21	0	11.9
<b>Durum Wheat</b>									
Utopia	17.1	64.3	31.6	55.0	90	7/26	21	0	10.0
Matt	18.9	60.2	28.0	59.2	91	7/26	22	0	9.8
Alzada	---	---	27.6	57.2	89	7/26	24	0	9.9
Kronos	21.4	63.7	26.5	59.0	93	7/24	21	0	9.5
Average	27.5	74.6	31.9	57.9	92	7/25	24	0	10.0
LSD ( $\alpha=.05$ )	6.7	10.6	6.1	1.7	5.1	0.9	2.0	0	
CV %	17.6	10.2	13.5	2.1	4.0	0.3	5.9	.	
Pr > F	<.0001	<.0001	<.0001	<.0001	0.3852	<.0001	<.0001	.	

(W) = White

**Table 38. Agronomic data for spring wheat at Rupert, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand%	Heading Date	Height (in)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Soft White Spring Wheat</b>									
IDO 686	---	---	121.3	62.7	100	6/30	41	0	7.7
IDO 669	149.5	126.7	120.9	62.0	100	6/30	40	0	8.0
Whit	148.7	114.4	120.2	62.4	100	6/28	39	0	7.9
Alturas	140.1	125.9	120.2	61.8	100	6/29	39	0	7.5
UI Pettit	147.4	124.9	118.7	61.2	100	6/25	36	0	7.6
Alpowa	140.2	113.4	118.4	62.2	100	6/30	40	0	7.6
IDO 644	145.1	125.6	117.3	61.1	100	6/27	35	0	7.4
IDO 599	---	130.9	116.9	61.3	100	6/28	38	0	7.9
IDO 668	145.3	128.1	116.9	62.3	100	6/28	39	0	8.2
IDO 687	---	---	116.9	63.3	100	7/1	39	0	8.0
IDO 671	144.8	134.8	116.6	61.9	100	6/29	40	0	7.5
Babe	---	114.9	115.1	63.1	100	6/28	42	0	7.2
Penawawa	152.1	121.2	115.1	63.1	100	6/30	39	0	7.3
Nick	141.6	110.8	114.7	62.5	100	6/28	38	0	8.0
JD*	---	---	108.2	62.5	100	6/30	40	0	8.3
Cataldo	136.0	106.6	105.3	62.0	100	6/26	39	0	8.3
Diva	---	104.1	102.1	61.5	100	6/29	37	12.5	8.5
Average	144.1	120.2	115.8	62.1	100	6/29	39	1	7.8
LSD ( $\alpha=.05$ )	15.0	9.1	11.8	0.5	0.0	1.1	2.9	8.4	
CV %	7.2	5.4	7.1	0.6	0.0	0.4	5.3	848.5	
Pr > F	0.5227	<.0001	0.1238	<.0001	.	<.0001	0.0015	0.4736	

\* = club wheat

**Table 39. Agronomic data for spring wheat, Aberdeen, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand%	Heading Date	Height (in)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Soft White Spring Wheat</b>									
Babe	---	134.4	135.4	61.5	100	6/27	40	45	11.8
IDO 599	---	131.9	134.7	61.0	100	6/27	36	53	10.8
Alpowa	119.2	130.6	133.9	60.5	100	6/29	37	43	11.7
IDO 644	119.6	136.2	133.9	59.6	100	6/26	36	34	10.9
Nick	113.4	120.0	132.3	61.2	100	6/26	35	45	11.8
IDO 687	---	---	131.9	62.2	100	6/28	39	13	10.9
IDO 669	120.9	122.3	130.4	61.7	100	6/27	38	61	10.9
Cataldo	108.8	124.6	128.8	60.8	98	6/25	38	0	11.7
Whit	114.8	125.9	128.0	60.4	100	6/26	35	59	11.5
UI Pettit	113.2	123.0	126.5	60.9	99	6/25	33	49	10.7
IDO 686	---	---	125.7	61.1	100	6/28	37	45	11.3
Alturas	120.7	124.1	124.5	60.1	100	6/28	38	30	10.8
IDO 671	108.0	138.4	122.6	60.7	100	6/28	38	5	10.7
IDO 668	118.4	130.2	119.8	60.0	100	6/27	39	22	11.7
Diva	---	124.2	112.8	59.1	100	6/27	38	83	12.3
Penawawa	114.4	123.6	109.3	59.6	100	6/27	36	41	11.6
JD*	---	---	102.3	60.4	100	6/29	37	94	11.9
Average	114.4	128.0	125.5	60.6	100	6/27	37	42	11.3
LSD ( $\alpha=.05$ )	24.5	11.6	15.5	1.2	1.3	0.9	2.6	46.6	
CV %	15.1	6.4	8.7	1.4	0.9	0.3	4.9	79.1	
Pr > F	0.9757	0.0307	0.0016	0.0004	0.0205	<.0001	<.0001	0.0161	

\* = club wheat

**Table 40. Agronomic data for spring wheat, Idaho Falls, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Soft White Spring Wheat</b>									
IDO 599	---	127.4	137.9	61.7	100	7/1	38	0	8.9
IDO 669	145.8	133.0	137.9	62.0	100	7/1	41	0	8.8
IDO 687	---	---	137.6	63.2	100	7/4	39	0	8.9
IDO 686	---	---	136.5	63.0	100	7/2	42	0	8.6
IDO 644	161.7	132.6	133.9	60.7	100	6/30	36	0	8.4
Nick	137.7	126.4	133.9	62.5	100	7/2	38	0	8.7
IDO 671	153.9	135.8	132.9	61.7	100	7/2	39	0	8.5
UI Pettit	138.0	130.0	132.9	61.8	100	6/30	35	0	9.0
Alturas	152.0	130.6	131.0	61.9	100	7/3	41	0	8.8
Alpowa	143.9	129.9	130.3	62.0	100	7/3	41	0	9.0
Whit	133.1	129.7	130.0	61.9	100	7/1	39	0	8.5
Babe	---	124.2	127.8	63.0	100	7/2	42	0	9.2
IDO 668	138.9	125.9	124.1	62.1	100	6/30	38	0	9.6
Penawawa	146.0	117.2	121.6	62.8	100	7/3	39	0	9.0
JD*	---	---	119.1	62.8	100	7/3	42	0	9.0
Diva	---	123.8	117.2	61.6	100	7/3	40	0	8.7
Cataldo	141.0	120.4	115.8	61.4	100	6/30	37	0	10.0
Average	143.8	129.3	129.8	62.1	100	7/2	39	0	8.9
LSD ( $\alpha=.05$ )	13.1	10.1	9.2	0.5	0.0	0.8	2.5	0.0	
CV %	6.4	5.5	5.0	0.6	0.0	0.3	4.6	.	
Pr > F	0.0008	<.0001	<.0001	<.0001	.	<.0001	<.0001	.	

\* = club wheat

**Table 41. Agronomic data for spring wheat at Ashton, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Soft White Spring Wheat</b>									
IDO 668	105.9	108.2	70.8	58.9	100	7/23	34	0	7.9
Alturas	113.9	96.2	69.7	58.6	100	7/26	34	0	7.4
IDO 644	111.5	98.0	69.3	57.9	100	7/24	32	0	8.0
Cataldo	106.5	102.4	68.2	59.5	100	7/22	31	0	7.7
IDO 671	111.9	95.8	64.3	58.9	100	7/26	34	0	7.3
Nick	100.6	94.4	59.5	58.0	100	7/25	32	0	8.2
UI Pettit	102.6	93.7	58.8	58.8	100	7/22	32	0	7.9
IDO 599	---	96.6	58.1	58.2	100	7/25	33	0	7.5
IDO 687	---	---	58.1	59.1	100	7/27	36	0	7.7
Babe	---	102.4	57.4	58.6	100	7/26	36	0	7.8
IDO 669	113.8	94.0	56.6	56.5	100	7/27	38	0	7.9
Diva	---	98.7	55.9	56.9	100	7/26	38	0	7.8
JD*	---	---	54.1	58.4	100	7/25	37	0	7.3
IDO 686	---	---	53.7	59.5	100	7/26	35	0	8.0
Penawawa	96.9	88.9	51.2	58.7	100	7/26	34	0	8.7
Whit	99.3	85.3	49.4	58.7	100	7/25	34	0	8.3
Alpowa	111.4	100.2	45.4	56.9	100	7/27	36	0	7.4
Average	107.9	97.8	58.7	58.4	100	7/25	34	0	7.8
LSD ( $\alpha=.05$ )	14.7	18.0	9.2	1.2	0.0	1.4	2.4	0	
CV %	8.2	13.0	11.1	1.5	0.0	0.5	4.9	.	
Pr > F	0.1983	0.7493	<.0001	<.0001	.	<.0001	<.0001	.	

\*= club wheat

**Table 42. Agronomic data for spring wheat at Soda Springs, dryland, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in)	Lodging (%)	Protein (%)
	2008	2009	2010						
<b>Soft White Spring Wheat</b>									
IDO 644	42.2	88.1	43.2	59.1	95	7/24	24	0	7.1
Alturas	29.7	89.1	41.4	58.0	98	7/30	24	0	6.9
Cataldo	38.5	87.8	39.9	59.7	90	7/23	22	0	7.9
IDO 599	---	97.3	39.9	59.2	94	7/25	26	0	7.6
IDO 668	37.6	75.8	39.9	58.6	95	7/26	24	0	7.4
IDO 686	---	---	39.9	54.3	94	7/30	27	0	8.2
UI Pettit	33.0	74.6	39.6	60.4	95	7/22	22	0	7.7
Diva	---	89.2	39.2	55.9	95	7/27	27	0	7.6
IDO 669	32.1	90.6	38.1	58.2	94	7/28	26	0	8.5
IDO 687	---	---	37.8	59.3	96	7/29	25	0	6.7
Penawawa	27.1	89.5	37.8	59.9	95	7/28	24	0	7.9
Babe	---	96.0	37.4	57.3	96	7/28	25	0	7.7
JD*	---	---	37.0	56.9	94	7/28	24	0	7.9
IDO 671	36.4	96.7	36.7	58.4	90	7/29	22	0	7.9
Whit	31.9	85.5	36.7	59.3	96	7/25	24	0	7.6
Nick	31.5	83.1	35.2	58.8	90	7/26	22	0	8.3
Alpowa	23.0	79.9	29.4	51.5	91	7/30	25	0	8.1
Average	30.1	87.4	38.2	57.9	94	7/27	24	0	7.7
LSD ( $\alpha=.05$ )	8.1	12.8	7.1	1.6	5.5	0.7	2.0	0	
CV %	18.9	10.2	13.1	1.9	4.1	0.2	5.7	.	
Pr > F	<.0001	0.0002	0.2017	<.0001	0.1392	<.0001	<.0001	.	

\* = club wheat

**Table 43. Agronomic data for spring barley at Rupert, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in.)	Lodging (%)	Protein (%)	Plump		
	2008	2009	2010							(>6/64)	(>5.5/64)	% Thin
<b>6- Row Spring Feed Barley</b>												
Creel	133.9	128.9	141.1	51.3	100	6/23	44	0	6.5	94.0	4.8	1.7
UT2120-14	---	---	130.7	51.8	100	6/23	40	0	6.7	95.1	3.5	1.6
Colter	144.3	127.1	127.1	52.2	100	6/23	43	0	7.0	94.3	4.4	1.5
UT2120-35	---	---	127.1	51.6	100	6/22	38	0	7.0	96.0	3.7	0.9
Millennium	162.1	129.3	122.1	51.9	100	6/22	40	0	7.1	91.0	6.0	2.7
Goldeneye	118.4	117.1	119.3	53.0	100	6/23	41	0	7.3	96.0	3.0	0.7
Herald	159.8	128.0	116.6	50.4	100	6/25	45	0	7.2	96.9	2.5	0.9
Steptoe	105.6	119.8	114.8	50.9	100	6/25	41	0	6.3	95.8	3.1	1.4
Aquila	130.8	115.3	108.0	53.2	100	6/21	40	0	6.8	95.2	3.4	1.5
<b>6- Row Spring Malt Barley</b>												
Legacy	124.6	84.9	115.3	52.2	100	6/26	44	0	6.5	96.8	3.1	0.5
Lacey	110.0	93.5	110.7	53.6	100	6/23	45	0	7.0	97.7	2.0	0.6
Morex	101.3	99.4	103.0	51.8	100	6/26	43	0	6.4	90.3	7.3	2.5
Celebration	---	81.2	99.8	51.5	100	6/25	42	0	7.1	97.6	2.3	0.6
Tradition	122.7	74.0	92.6	52.0	100	6/25	45	0	7.5	97.6	2.0	0.6
Average	130.6	109.6	116.6	51.9	100	6/23	42	0	6.9	94.9	3.9	1.4
LSD ( $\alpha=.05$ )	19.4	20.1	17.5	1.1	0.0	1.1	3.6	0.0				
CV %	10.4	12.7	10.5	1.4	0.0	0.4	6.0	.				
Pr > F	<.0001	<.0001	0.0001	<.0001	.	<.0001	0.0026	.				

**Table 44. Agronomic data for spring barley, Aberdeen, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in.)	Lodging (%)	Protein (%)	Plump		
	2008	2009	2010							(>6/64)	(>5.5/64)	% Thin
<b>6-Row Spring Feed Barley</b>												
Herald	155.7	124.2	149.8	47.1	99	6/25	43	89	8.3	82.5	11.4	6.3
Colter	155.5	131.2	138.6	46.8	100	6/23	41	94	8.6	70.3	16.6	13.2
Millennium	158.3	140.0	138.6	48.1	100	6/22	41	33	8.4	67.8	17.6	14.7
UT2120-35	---	---	133.2	48.9	99	6/21	43	76	8.1	83.0	10.8	6.6
Creel	161.2	131.5	131.3	47.9	100	6/24	41	93	8.8	66.1	17.5	16.7
Steptoe	157.9	124.4	122.5	47.0	100	6/24	40	91	8.2	83.0	9.3	7.8
UT2120-14	---	---	121.5	48.8	100	6/21	39	80	8.4	86.7	8.3	5.7
Goldeneye	159.5	117.4	119.5	49.8	100	6/24	41	73	10.0	83.4	9.4	7.8
Aquila	160.8	123.6	118.1	50.7	100	6/19	40	80	8.8	86.8	7.9	5.6
<b>6-Row Spring Malt Barley</b>												
Lacey	152.5	115.7	124.9	50.6	100	6/24	45	58	8.6	84.8	9.7	5.7
Legacy	143.5	118.8	124.9	47.8	95	6/26	42	95	9.3	74.1	12.7	13.8
Tradition	135.2	115.3	118.6	50.2	100	6/25	42	68	9.0	86.4	9.3	4.9
Celebration	---	105.4	114.2	49.8	100	6/26	45	71	9.6	85.1	9.6	5.6
Morex	128.2	117.0	108.3	49.1	100	6/27	39	68	8.4	79.1	13.0	8.6
Average	152.9	121.5	127.6	48.7	99	6/23	41	76	8.8	79.9	11.7	8.8
LSD ( $\alpha=0.05$ )	15.0	11.3	22.7	1.7	4.1	1.5	4.0	43.8				
CV %	7.0	6.5	12.4	2.4	2.9	0.6	6.8	40.3				
Pr > F	<.0001	<.0001	0.0120	<.0001	0.6009	<.0001	0.1081	0.3519				

**Table 45. Agronomic data for spring barley at Idaho Falls, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in.)	Lodging (%)	Protein (%)	Plump		
	2008	2009	2010							(>6/64)	(>5.5/64)	% Thin
<b>6 - Row Spring Feed Barley</b>												
Creel	173.5	134.3	157.0	50.9	100	6/26	41	0	7.1	90.3	6.6	3.0
UT2120-14	---	---	139.8	50.0	100	6/25	41	0	8.1	93.8	3.8	2.1
Herald	157.9	117.1	138.8	49.1	100	6/27	42	0	7.9	91.4	5.3	2.5
UT2120-35	---	---	138.4	49.5	100	6/25	41	19	8.4	90.6	6.3	2.9
Colter	157.7	130.2	136.6	49.8	100	6/27	43	0	7.8	87.5	8.8	3.5
Millennium	164.7	132.9	130.7	49.5	100	6/25	38	0	7.5	84.4	9.7	5.5
Goldeneye	162.3	142.9	129.3	51.6	100	6/26	39	10	8.3	89.7	6.2	4.0
Steptoe	172.1	133.9	119.3	47.8	100	6/28	41	20	7.9	89.7	6.6	3.3
Aquila	156.5	124.3	107.5	51.8	100	6/24	41	0	8.2	90.1	6.4	3.1
<b>6 - Row Spring Malt Barley</b>												
Lacey	114.0	119.8	124.8	52.2	100	6/26	40	20	7.6	94.4	3.9	1.1
Legacy	128.9	124.3	123.9	50.5	100	6/28	41	49	7.8	87.1	8.6	4.1
Celebration	---	108.4	114.8	51.1	100	6/27	38	10	8.1	93.2	4.9	1.7
Tradition	106.8	127.5	104.8	50.9	100	6/29	42	23	8.2	93.8	4.2	1.7
Morex	121.5	119.8	96.6	48.4	100	6/29	45	47	7.8	78.0	12.2	9.6
Average	149.3	129.1	126.7	50.2	100	6/26	41	13	7.9	89.2	6.9	3.5
LSD ( $\alpha=.05$ )	18.3	10.7	15.4	1.2	0.0	0.8	3.2	34.5				
CV %	8.9	5.8	8.5	1.7	0.0	0.3	5.5	183.9				
Pr > F	<.0001	<.0001	<.0001	<.0001	.	<.0001	0.0087	0.0565				

**Table 46. Agronomic data for spring barley at Ashton, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in.)	Lodging (%)	Protein (%)	Plump		
	2008	2009	2010							(>6/64)	(>5.5/64)	% Thin
<b>6-Row Spring Feed Barley</b>												
Creel	109.4	96.2	71.2	51.9	100	7/22	35	0	7.3	89.5	7.0	3.8
UT2120-14	---	---	60.3	53.5	100	7/20	29	0	7.5	97.4	2.3	0.9
Steptoe	118.2	101.6	58.5	50.3	100	7/21	31	0	6.4	95.0	3.3	2.1
UT2120-35	---	---	56.7	53.1	100	7/19	30	0	7.0	96.6	2.6	1.0
Herald	102.6	96.2	54.5	50.8	100	7/23	30	0	7.0	93.1	5.2	2.3
Colter	112.6	88.5	50.8	51.6	100	7/22	30	0	6.9	89.7	7.0	3.5
Millennium	119.4	90.3	49.5	51.2	100	7/21	32	0	7.2	88.5	7.7	3.7
Goldeneye	125.2	105.3	44.5	52.2	100	7/23	33	0	6.7	94.2	4.3	2.0
Aquila	111.6	84.9	36.8	54.0	100	7/20	31	0	7.4	94.9	3.2	2.1
<b>6-Row Spring Malt Barley</b>												
Legacy	111.4	94.4	48.6	48.7	100	7/24	37	0	7.3	85.7	10.4	4.6
Morex	103.7	103.5	43.1	51.4	100	7/25	36	0	6.7	89.5	7.1	3.8
Lacey	111.9	78.0	40.4	53.1	100	7/23	35	0	7.7	95.4	3.1	2.4
Celebration	---	76.2	39.9	51.6	100	7/24	34	0	7.9	95.6	3.5	1.7
Tradition	100.4	79.4	31.3	52.9	100	7/23	35	0	8.2	94.7	3.7	2.0
Average	114.0	736.4	48.9	51.8	100	7/22	32	0	7.3	92.5	5.3	2.7
LSD ( $\alpha=.05$ )	13.7	20.1	14.8	1.0	0.0	1.8	3.8	0.0				
CV %	7.1	15.1	21.2	1.3	0.0	0.6	8.2	·				
Pr > F	0.0019	0.0485	0.0003	<.0001	·	<.0001	0.0004	·				

**Table 47. Agronomic data for spring barley at Rupert, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in.)	Lodging (%)	Protien (%)	Plump		
	2008	2009	2010							(>6/64)	(>5.5/64)	% Thin
<b>2-Row Spring Feed Barley</b>												
Tetonia	152.2	144.9	141.1	54.6	100	6/30	33	23	6.5	94.5	3.9	1.8
RWA 1758	152.2	148.3	136.1	54.8	100	6/27	35	10	6.3	97.5	2.1	1.0
Spaulding	165.9	150.7	135.7	55.5	100	6/27	36	0	7.4	97.2	1.9	1.0
Idagold II	159.6	132.9	134.8	54.1	100	6/30	30	15	6.6	97.6	1.8	1.0
2Ab04-X00017-4	---	130.4	133.4	54.6	100	6/28	40	0	7.0	99.2	1.1	0.4
Baronesse	149.3	161.9	131.1	55.2	100	6/29	35	3	6.3	97.8	1.5	0.9
Primo	150.3	143.9	130.2	54.3	100	6/28	36	24	6.5	96.5	2.6	1.2
Xena	159.5	149.1	128.0	55.2	100	6/27	38	3	6.7	98.0	1.8	0.6
Lenetah	177.6	149.7	127.1	55.2	100	6/27	35	43	7.6	97.2	2.1	0.9
Champion	165.4	147.8	126.1	55.1	100	6/26	37	5	7.0	97.0	2.6	1.1
Haxby	150.8	123.2	118.9	55.1	100	6/26	40	18	7.7	98.4	1.3	0.6
Hays	139.5	101.1	116.2	53.1	100	6/29	37	0	6.1	96.1	3.0	0.9
Camas	154.7	126.8	115.7	55.1	100	6/27	38	0	7.3	98.2	2.2	0.9
Julie*	---	96.8	111.2	60.3	100	7/2	37	0	11.9	93.4	5.6	1.6
Burton	151.3	135.2	111.2	54.6	100	6/27	38	0	6.8	98.8	1.8	0.7
Clearwater*	126.9	110.0	95.7	59.4	100	6/28	34	13	11.7	83.0	13.8	3.6
Transit*	---	94.4	85.8	58.8	100	7/2	38	5	12.0	89.8	8.8	1.6
Karma*	---	---	52.6	58.3	100	6/26	44	88	11.5	87.8	8.1	4.5
<b>2-Row Spring Malt Barley</b>												
Moravian 115	---	---	143.8	52.4	100	7/1	28	0	7.1	98.7	1.2	0.6
Moravian 137	---	---	142.5	53.5	100	7/1	28	0	6.7	97.0	2.5	1.1
02Ab17271	154.2	127.5	141.1	53.8	100	7/2	37	5	7.0	96.8	2.6	0.9
Merit 57	---	---	135.5	53.0	100	6/30	37	30	7.1	95.2	4.0	1.2
2Ab04-X001084-27	---	---	132.0	53.8	100	6/28	36	3	6.3	98.0	1.1	0.5
Moravian 69	157.1	143.2	128.0	52.6	100	7/2	27	0	6.8	97.3	2.2	1.0
Conrad	150.3	134.3	125.2	54.1	100	6/26	34	0	7.0	98.7	1.2	0.2
Copeland	---	134.3	122.1	53.9	100	6/29	39	39	8.0	97.0	2.4	1.0
Merit	146.4	107.8	122.1	53.3	100	7/1	35	13	7.2	94.7	4.0	1.9
Geraldine	146.4	125.1	120.2	55.0	100	6/29	36	0	6.9	96.3	2.8	1.0
02Ab17373	146.9	106.5	116.6	53.4	100	7/2	40	21	7.0	96.8	2.4	1.3
Craft	133.7	117.6	115.3	55.7	100	6/26	42	20	7.9	98.5	1.4	0.6
Pinnacle	142.0	123.5	112.5	54.3	100	6/26	40	0	7.2	98.1	1.5	0.7
B1202	146.9	111.3	112.1	53.7	100	6/28	37	0	7.5	99.3	0.8	0.3
Hockett	150.8	103.0	108.9	55.5	100	6/25	38	26	7.3	98.4	1.2	0.4
Harrington	126.9	112.2	105.3	54.2	100	6/29	40	24	7.1	94.5	3.3	2.6
Average	151.4	129.4	121.5	54.8	100	6/28	36	12	7.5	96.4	2.9	1.1
LSD ( $\alpha=.05$ )	26.0	21.6	14.6	0.7	0.4	1.5	3.3	34.4				
CV %	12.2	8.2	8.5	0.9	0.3	0.6	6.4	204.7				
Pr > F	0.0060	<.0001	<.0001	<.0001	0.5566	<.0001	<.0001	0.0023				

\* indicates hulless variety

**Table 48. Agronomic data for spring barley, Aberdeen, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in.)	Lodging (%)	Protein (%)	Plump		
	2008	2009	2010							(>6/64)	(>5.5/64)	% Thin
<b>2-Row Spring Feed Barley</b>												
Idagold II	138.2	136.8	169.3	52.0	100	6/29	39	23	7.9	90.4	7.3	3.3
Spaulding	157.6	139.6	137.6	51.4	100	6/28	45	6	8.9	87.4	7.7	5.3
Lenetah	152.0	137.4	136.1	51.1	100	6/26	42	86	9.4	91.3	5.1	4.5
Champion	158.7	142.9	134.2	52.2	100	6/26	40	51	9.7	92.2	5.4	3.3
RWA 1758	158.5	144.3	131.3	51.2	100	6/27	40	54	9.3	90.5	5.0	4.6
Camas	157.0	121.1	129.3	51.3	100	6/27	39	30	10.3	88.1	5.6	7.1
2Ab04-X00017-4	---	142.7	127.3	50.7	100	6/26	40	81	9.0	84.2	9.4	6.9
Baronesse	140.5	133.6	126.9	50.7	100	6/27	38	63	9.0	86.3	7.9	6.5
Xena	165.3	139.9	125.9	51.2	100	6/26	39	35	9.5	87.8	8.4	4.0
Tetonia	148.3	138.2	124.9	51.7	100	6/27	38	71	8.7	88.6	7.6	4.3
Haxby	156.0	121.0	116.6	52.1	100	6/27	40	58	10.1	92.0	4.9	4.1
Burton	147.4	126.9	113.2	50.8	100	6/26	42	73	9.8	86.9	7.7	6.2
Primo	153.9	131.8	107.8	50.3	100	6/27	35	84	9.4	79.1	9.0	12.0
Julie*	---	122.6	103.0	55.8	96	7/2	39	59	16.6	60.7	20.8	18.8
Hays	110.7	109.3	103.0	49.9	100	6/28	37	73	8.2	78.2	13.7	9.1
Transit*	---	93.9	101.0	56.7	96	6/29	39	68	15.2	77.7	15.5	7.1
Clearwater*	130.6	111.1	97.6	54.2	99	6/27	39	83	16.3	57.2	27.5	16.3
Karma*	---	---	62.5	59.2	100	6/27	41	93	12.7	83.4	10.1	7.0
<b>2-Row Spring Malt Barley</b>												
Moravian 69	---	---	139.1	50.3	96	7/1	34	75	7.9	78.4	12.4	9.2
2Ab04-X001084-27	---	---	127.8	49.6	100	6/28	41	55	9.7	86.9	6.9	6.6
Copeland	---	121.6	124.9	50.7	100	6/27	44	88	9.5	85.8	7.2	8.7
B1202	129.7	116.1	123.9	49.6	100	6/28	39	75	9.6	86.3	7.6	6.2
Conrad	152.8	130.3	122.0	50.2	100	6/26	36	55	9.4	86.6	8.8	4.7
Merit	131.1	123.9	117.6	50.1	100	6/29	40	94	8.9	82.2	8.8	9.6
02Ab17271	125.4	113.7	116.1	49.8	100	7/1	35	48	8.9	81.7	9.6	8.9
02Ab17373	131.1	128.0	114.5	50.0	100	6/30	41	66	9.5	84.6	8.7	7.3
Geraldine	140.7	135.3	112.7	50.5	100	6/29	38	68	9.1	80.1	10.1	10.3
Hockett	129.1	123.8	112.7	52.0	100	6/25	37	68	9.3	90.6	4.9	4.7
Craft	139.6	119.1	111.7	52.5	100	6/26	39	63	10.4	86.3	6.8	6.7
Harrington	121.1	104.8	110.3	49.8	100	6/28	38	89	9.7	72.8	13.2	14.2
Merit 57	---	---	109.8	48.0	100	6/28	35	88	9.0	58.6	20.0	21.8
Pinnacle	143.0	128.9	96.1	51.8	100	6/25	40	54	9.6	94.7	3.3	2.4
Average	142.7	126.2	119.1	51.3	100	6/27	39	67	10.0	83.1	9.6	7.9
LSD ( $\alpha=.05$ )	16.8	15.8	24.2	2.1	1.5	1.2	3.2	37.9				
CV %	8.4	8.2	14.4	2.9	1.1	0.5	5.9	40.4				
Pr > F	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0005				

\* indicates hulless variety

**Table 49. Agronomic data for spring barley at Idaho Falls, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in.)	Lodging (%)	Protein (%)	Plump		
	2008	2009	2010							(>6/64)	(>5.5/64)	% Thin
<b>2-Row Spring Feed Barley</b>												
Spaulding	173.6	144.3	151.1	54.1	100	7/2	35	0	7.6	92.8	3.8	3.1
2Ab04-X00017-4	---	142.5	147.0	52.7	100	6/30	38	15	8.1	93.1	3.0	3.3
Xena	184.4	141.1	147.0	53.6	100	7/1	35	0	7.7	94.2	3.2	1.8
Primo	162.4	135.2	142.0	52.0	100	7/1	32	34	7.3	89.2	5.5	4.3
Baronesse	167.5	146.1	141.6	53.0	100	7/1	35	15	7.6	92.0	4.6	2.6
Champion	187.1	137.9	141.1	53.5	100	6/29	34	15	8.1	91.9	4.3	3.1
Idagold II	168.5	128.0	140.7	50.9	100	7/5	28	0	7.6	87.0	8.9	3.4
Camas	159.8	137.1	139.3	53.4	100	7/1	38	0	8.8	93.0	3.9	2.7
RWA 1758	171.0	145.7	138.8	53.0	100	6/30	34	26	7.3	90.6	4.7	4.0
Lenetah	163.1	144.8	138.4	52.0	100	7/1	35	49	8.5	85.8	5.3	8.2
Burton	168.3	140.2	134.3	53.5	100	7/1	37	5	8.0	94.4	3.3	1.7
Tetonia	147.2	139.3	132.9	52.2	100	7/4	35	39	7.7	84.5	8.2	6.8
Julie*	---	126.6	128.0	59.1	100	7/6	37	0	15.7	91.1	6.3	2.1
Haxby	149.9	130.2	119.8	54.3	100	6/30	36	0	9.1	93.3	3.1	3.0
Clearwater*	136.1	113.5	112.1	56.9	100	6/30	36	24	14.1	74.9	16.5	7.8
Hays	110.1	126.1	103.0	50.5	100	7/3	36	16	7.1	84.3	8.6	6.3
Transit*	---	101.6	100.7	58.1	100	7/3	38	8	14.4	84.4	11.3	3.3
Karma*	---	---	70.3	55.6	100	6/30	42	97	12.2	69.9	16.2	12.9
<b>2-Row Spring Malt Barley</b>												
02Ab17271	123.2	136.6	140.7	51.2	100	7/5	36	15	7.7	87.3	6.9	5.2
Conrad	147.4	133.9	140.2	52.7	100	7/1	35	23	8.3	93.7	3.3	2.4
Moravian 69	---	---	139.8	50.9	100	7/5	29	14	7.4	89.7	6.5	3.0
Merit	125.6	130.2	136.1	47.0	100	7/4	37	10	8.3	89.1	6.1	4.4
Copeland	---	133.9	135.7	52.1	100	7/2	38	6	7.8	92.9	3.7	2.6
02Ab17373	125.1	134.3	134.8	52.5	100	7/4	36	13	8.2	91.8	4.4	3.0
Pinnacle	139.5	143.4	132.5	53.3	100	6/28	38	0	8.4	97.2	1.5	0.6
Merit 57	---	---	128.9	50.5	100	6/30	35	14	8.2	85.2	7.9	6.4
2Ab04-X001084-27	---	---	127.5	50.7	100	7/1	34	36	7.9	89.1	5.5	4.6
B1202	138.5	124.8	125.7	52.0	100	7/1	34	23	8.0	95.3	1.9	1.9
Geraldine	142.7	131.6	123.9	53.0	100	7/3	35	24	8.6	88.5	5.8	4.9
Harrington	121.4	109.4	117.1	50.0	100	7/3	36	56	8.3	80.7	9.8	8.8
Craft	142.1	129.8	113.4	54.0	100	6/29	40	6	9.2	93.4	3.4	2.1
Hockett	127.3	119.8	112.1	52.5	100	6/29	35	48	8.4	89.3	5.9	4.5
Average	149.2	132.4	129.3	52.8	100	7/1	36	21	8.8	89.1	6.0	4.2
LSD ( $\alpha=.05$ )	14.8	12.3	15.1	1.7	0.0	1.2	2.7	30.0				
CV %	7.1	6.6	8.3	2.3	0.0	0.5	5.4	102.8				
Pr > F	<.0001	<.0001	<.0001	<.0001	.	<.0001	<.0001	<.0001				

\* indicates hulless variety

**Table 50. Agronomic data for spring barley at Ashton, irrigated, 2010.**

Variety	Yield (bu/A)			Test Wt. (lb/bu)	Spring Stand %	Heading Date	Height (in.)	Lodging (%)	Protein (%)	Plump		
	2008	2009	2010							(>6/64)	(>5.5/64)	% Thin
<b>2-Row Spring Feed Barley</b>												
RWA 1758	137.7	115.3	87.1	54.0	100	8/4	29	0	5.8	97.4	2.2	0.9
Primo	145.8	118.9	83.0	53.7	100	8/4	27	0	6.3	97.1	2.0	1.0
Baronesse	129.3	123.0	82.1	53.4	100	8/3	28	0	6.2	97.3	1.9	0.8
Xena	153.2	104.4	77.6	53.2	100	8/3	30	0	6.6	94.7	3.5	2.0
Tetonia	129.3	97.6	71.2	52.8	100	8/5	28	0	5.6	95.5	3.2	1.4
Champion	146.8	104.8	69.9	53.6	100	8/2	29	0	7.4	93.1	5.2	1.9
2Ab04-X00017-4	---	113.4	69.4	50.4	100	8/3	29	0	7.3	95.1	3.0	2.0
Burton	135.9	96.2	66.2	52.9	100	8/2	29	0	6.6	96.4	2.3	1.4
Lenetah	138.7	110.3	65.3	52.5	100	8/3	31	0	6.8	96.3	2.5	1.5
Idagold II	113.2	102.1	64.0	49.3	100	8/3	25	0	7.2	86.9	9.9	3.1
Spaulding	133.1	118.0	60.8	52.5	100	8/4	30	0	6.7	93.0	4.5	2.4
Camas	122.0	104.8	55.8	53.8	100	8/1	31	0	7.3	94.8	3.7	1.6
Clearwater*	101.8	79.9	54.5	61.6	100	8/1	29	0	11.7	79.7	13.5	7.2
Hays	131.5	91.7	52.2	50.3	100	8/4	32	0	6.2	91.8	4.9	3.1
Karma*	---	---	44.0	60.5	100	7/28	34	0	11.1	87.0	8.0	5.2
Julie*	---	87.6	42.2	56.5	100	8/5	30	0	12.2	55.7	24.8	19.9
Haxby	105.9	91.7	40.4	54.7	100	8/1	30	0	7.9	96.1	2.6	1.4
Transit*	---	70.8	35.4	57.2	100	8/5	31	0	12.7	62.5	22.1	15.7
<b>2-Row Spring Malt Barley</b>												
2Ab04-X001084-27	---	---	85.3	49.6	100	8/3	29	0	6.6	93.8	4.0	2.0
Geraldine	122.1	98.9	65.8	52.5	100	8/3	31	0	6.9	91.9	5.3	2.8
Merit 57	---	---	64.4	49.5	100	7/31	32	0	7.5	88.0	7.7	4.1
Moravian 69	---	---	61.3	48.0	100	8/6	25	0	7.2	88.7	6.9	4.2
B1202	118.5	88.0	59.9	50.7	100	8/1	33	0	7.4	94.5	3.8	1.6
Copeland	---	103.5	59.4	49.4	100	8/4	33	0	6.9	92.5	4.7	2.8
Harrington	120.3	92.6	55.8	52.3	100	8/2	29	0	7.5	89.7	7.8	3.0
02Ab17271	115.7	120.7	55.4	46.8	100	8/5	33	0	7.5	82.1	12.4	5.4
02Ab17373	125.4	95.3	53.5	48.7	100	8/1	31	0	7.0	87.9	8.0	4.1
Conrad	124.6	103.9	53.1	51.6	100	8/3	28	0	7.0	96.1	2.5	1.4
Pinnacle	112.3	84.9	51.7	53.1	100	7/25	32	0	7.6	96.0	2.3	1.8
Merit	117.6	103.0	49.0	47.9	100	8/4	30	0	7.7	86.4	9.1	4.1
Hockett	126.9	98.9	48.1	53.2	100	8/1	28	0	7.7	96.4	2.5	1.3
Craft	120.8	96.2	47.6	53.6	100	7/30	33	0	7.4	95.3	2.8	1.8
Average	127.2	100.5	61.4	52.4	100	8/2	30	0	7.6	90.3	6.2	3.5
LSD ( $\alpha=.05$ )	19.9	17.8	13.6	1.3	0.2	2.5	3.2	0				
CV %	9.7	12.6	15.8	1.8	0.2	0.8	7.7	.				
Pr > F	<.0001	<.0001	<.0001	<.0001	0.4816	<.0001	<.0001	.				

\* indicates hulless variety

**Table 51. Hard Winter Wheat Yield Percentage of Location Averages, 2010.**

(100% =Average)

Variety	Kimberly	Rupert	Aberdeen	Ririe	Rockland	Variety Average
ACS 55017	106	131	116	117	119	118
Norwest 553	98	114	129	---	---	114
LHS (W)	115	111	103	125	107	112
Utah 100	108	127	118	96	109	112
WB-Arrowhead	98	118	117	119	100	110
Deloris	103	118	94	116	118	110
Yellowstone	102	98	115	113	112	108
IDO660	93	125	107	120	91	107
BC002-02	100	105	117	96	113	106
Whetstone	98	113	102	93	110	103
Garland	97	95	116	87	122	103
AgriPro Paladin	97	101	104	103	108	102
Decade	93	113	98	93	108	101
Boundary	100	103	100	95	105	100
400W CL2	---	---	---	112	88	100
Moreland	103	93	107	96	91	98
Bonneville	104	88	77	128	91	98
Curlew	104	96	84	97	107	98
UICF Grace (W)	104	79	85	118	95	96
NuHorizon (W)	89	102	114	84	91	96
Juniper	---	---	---	90	103	96
Golden Spike (W)	118	81	79	111	91	96
DW	97	86	89	101	103	95
Gary (W)	107	80	89	97	95	94
Esperia	85	98	96	---	---	93
Eddy	93	92	107	90	83	93
UI Darwin (W)	98	91	86	96	92	93
Manning	107	78	86	110	81	93
UI Silver (W)	110	82	85	80	100	91
Promontory	97	91	98	67	99	91
NuHills	82	91	98	---	---	90
Weston	94	101	83	83	87	90
503 CL2	---	---	---	66	80	73
Location Average (bu/A)	137	106	126	28	39	

(W) = White

**Table 52. Soft White Winter Wheat Yield Percentage of Location Averages, 2010.**

	(100% =Average)				Variety
	Kimberly	Rupert	Aberdeen	Ririe	Average
AP Badger	101	113	110	118	110
Xerpha	104	107	102	118	108
00-475-2DH	102	102	95	122	105
ID98-19010A	102	108	103	105	104
ORCF-101	92	104	111	111	104
UICF Brundage	96	99	101	116	103
AP Legacy	101	104	103	105	103
Bitterroot	104	91	103	114	103
IDO663	101	95	101	111	102
ORCF-102	99	95	101	112	102
UICF Lambert	104	107	92	102	101
Bruneau	111	95	100	98	101
Brundage	102	117	105	81	101
Simon	103	106	102	92	101
WB-528	104	106	100	92	100
Agripro Salute	106	103	105	88	100
Brundage 96	101	107	94	96	99
Stephens	95	91	89	121	99
Skiles	90	105	112	88	99
Tubbs 06	108	99	103	83	98
Lambert	109	97	93	95	98
Coda*	90	78	93	132	98
Madsen	98	99	100	92	97
Agripro Legion	112	91	93	93	97
Bruehl*	94	85	92	114	96
Goetze	93	87	103	96	95
WB 456	93	109	100	76	94
Westbred 470	87	107	104	79	94
Daws	101	97	92	83	93
WB-Junction	98	97	99	66	90
Location Average (bu/A)	133	121	140	25	

\* = Club Wheat

**Table 53. Winter Barley Yield Percentage of Location Averages, 2010.**

	(100% =Average)		Variety Average
	Rupert	Aberdeen	
02Ab2732	107	128	117
94Ab1777	113	120	117
OR91	117	113	115
OR819	101	127	114
OR92	109	117	113
93Ab669	106	118	112
Sunstar Pride	111	109	110
Maja	110	109	109
02Ab2739	97	120	109
OR94	94	124	109
Kold	---	108	108
Strider	97	115	106
OR93	106	103	105
02Ab2701	110	98	104
OR818	82	124	103
Eight-Twelve	115	91	103
Alba	119	84	102
Schuyler	114	84	99
OR816	98	99	98
02Ab339	122	74	98
Sprinter	109	85	97
Mathias	106	87	97
OR85	99	94	97
OR83	107	82	94
Kamiak	116	72	94
OR813	102	80	91
OR815	97	71	84
OR86	91	75	83
Endeavor	65	98	82
Charles	73	90	81
M 69	8	---	8
Location Average (bu/A)	143	158	

**Table 54. Hard Spring Wheat Yield Percentage of Location Averages, 2010.**

Variety	(100% =Average)				Soda	Variety Average
	Rupert	Aberdeen	Idaho Falls	Ashton	Springs	
IDO 665	---	---	---	---	115	115
Lolo (W)	113	114	118	114	112	114
Otis (W)	105	104	116	87	134	109
Jerome	102	103	102	111	125	109
WB-Paloma (W)	101	98	101	128	112	108
OR 4990114	101	97	105	113	122	108
Bullseye	101	106	107	116	105	107
WB-Idamax (W)	106	104	104	103	104	104
Iona	101	89	103	108	114	103
Jefferson	99	95	106	105	104	102
Pristine (W)	100	93	105	109	99	101
IDO 667	102	107	103	95	95	100
Tara 2002	100	95	95	105	106	100
Lochsa (W)	101	94	102	103	98	100
UI Winchester	98	99	98	98	102	99
IDO 702	99	98	107	93	96	98
RSI 03W10348 (W)	97	102	102	95	91	97
Malbec	99	105	98	87	---	97
Blanca Grande (W)	103	100	93	89	98	97
WB-Fuzion	100	96	98	86	103	97
Kelse	94	101	90	101	94	96
Volt	91	102	100	99	86	96
Choteau	94	110	97	98	78	96
WestBred 936	100	98	95	83	102	96
Snow Crest (W)	98	99	91	87	96	94
Klasic (W)	91	92	89	101	96	94
Cabernet	103	100	93	82	82	92
SJ908-247	85	91	77	62	50	73
<b>Durum Wheat</b>						
Utopia	101	103	97	113	98	102
Kronos	107	98	100	101	82	98
Alzada	97	103	96	99	86	96
Matt	102	101	91	99	87	96
Location Average (bu/A)	111	121	123	54	32	

(W) = White

**Table 55. Soft White Spring Wheat Yield Percentage of Location Averages, 2010.**

	(100% =Average)				Soda	
	Rupert	Aberdeen	Idaho Falls	Ashton	Springs	Variety Average
IDO 644	101	107	103	118	113	109
Alturas	104	99	101	119	108	106
IDO 599	101	108	106	99	105	104
IDO 668	101	96	96	120	105	103
IDO 669	104	104	106	96	100	102
IDO 687	101	105	106	99	99	102
UI Pettit	102	101	102	100	104	102
IDO 671	101	98	102	109	96	101
IDO 686	105	100	105	91	105	101
Cataldo	91	103	89	116	105	101
Babe	99	108	98	98	98	100
Nick	99	106	103	101	92	100
Whit	104	102	100	84	96	97
Diva	88	90	90	95	103	93
Penawawa	99	87	94	87	99	93
Alpowa	102	107	100	77	77	93
JD*	93	82	92	92	97	91
Location Average (bu/A)	116	125	130	59	38	

\* = club wheat

**Table 56. 6-Row Barley Yield Percentage of Location Averages, 2010.**

	(100% =Average)				Variety
	Rupert	Aberdeen	Idaho Falls	Ashton	Average
<b>Feed</b>					
Creel	121	103	124	146	123
UT2120-14	112	95	110	123	110
UT2120-35	109	104	109	116	110
Herald	100	117	110	111	110
Colter	109	109	108	104	107
Millennium	105	109	103	101	104
Steptoe	98	96	94	120	102
Goldeneye	102	94	102	91	97
Aquila	93	93	85	75	86
<b>Malt</b>					
Legacy	99	98	98	99	98
Lacey	95	98	99	83	93
Celebration	86	89	91	82	87
Morex	88	85	76	88	84
Tradition	79	93	83	64	80
Location Average (bu/A)	117	128	127	49	

**Table 57. 2-Row Barley Yield Percentage of Location Averages, 2010.**

	(100% =Average)				Variety Average
	Rupert	Aberdeen	Idaho Falls	Ashton	
<b>Feed</b>					
RWA 1758	112	110	107	142	118
Idagold II	111	142	108	104	116
Baronesse	108	107	109	134	114
Xena	105	106	113	126	113
2Ab04-X00017-4	110	107	113	113	111
Spaulding	112	116	117	99	111
Primo	107	91	110	135	111
Tetonia	116	105	103	116	110
Champion	104	113	109	114	110
Lenetah	105	114	107	106	108
Camas	95	109	107	91	101
Burton	92	95	104	108	100
Haxby	98	98	92	66	88
Hays	96	86	79	85	87
Julie*	92	86	99	69	86
Clearwater*	79	82	86	89	84
Transit*	71	85	78	58	73
Karma*	43	52	54	72	55
<b>Malt</b>					
Moravian 115	118	---	---	---	118
Moravian 137	117	---	---	---	117
2Ab04-X001084-27	109	107	98	139	113
Moravian 69	105	117	108	100	107
02Ab17271	116	98	108	90	103
Merit 57	112	92	99	105	102
Copeland	100	105	105	97	102
Conrad	103	102	108	87	100
Geraldine	99	95	96	107	99
B1202	92	104	97	98	98
Merit	100	99	105	80	96
02Ab17373	96	96	104	87	96
Harrington	87	93	90	91	90
Pinnacle	93	81	102	84	90
Craft	95	94	87	78	88
Hockett	90	95	86	78	87
Location Average (bu/A)	121	119	130	61	

\* indicates hulless variety

## 2010 Winter Grain Yield Percentage Across All Locations Charts

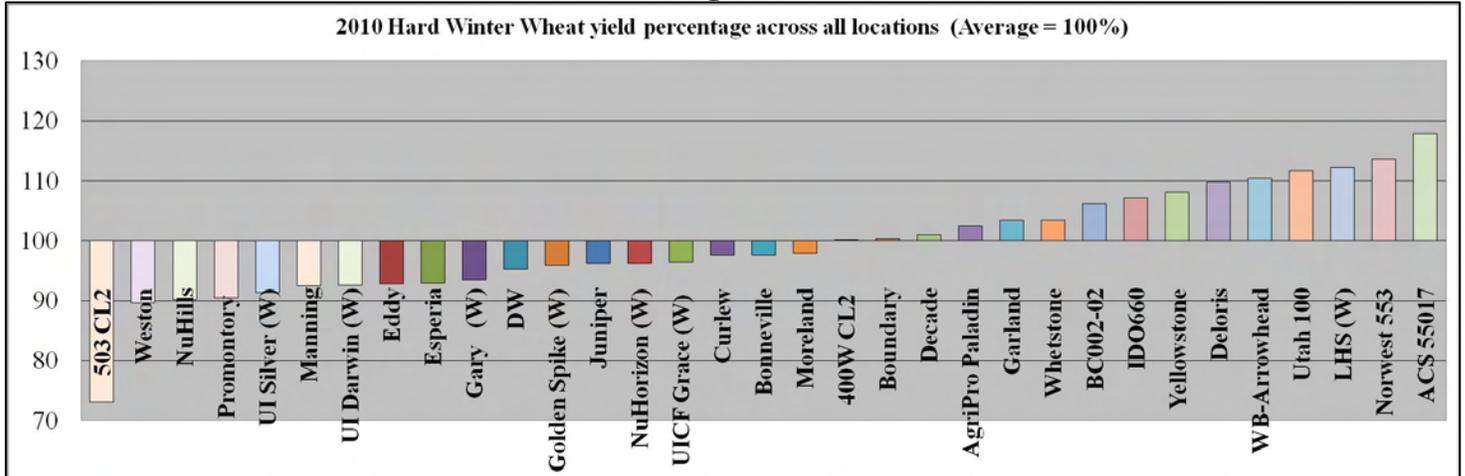


Chart 2. Hard Winter Wheat Yield Percentage Across All Locations.

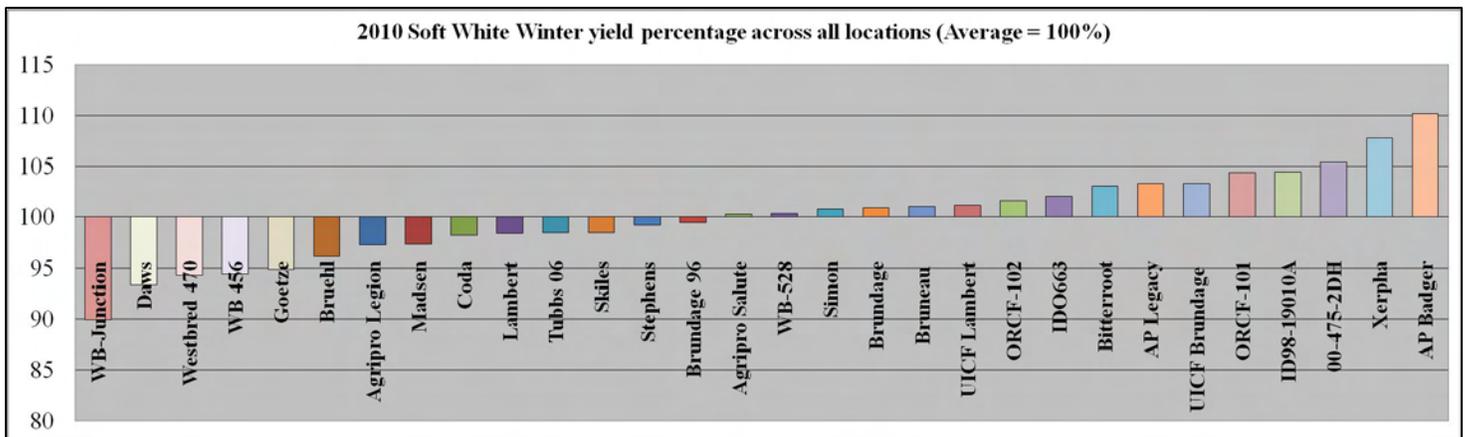


Chart 3. Soft White Winter Wheat Yield Percentage Across All Locations.

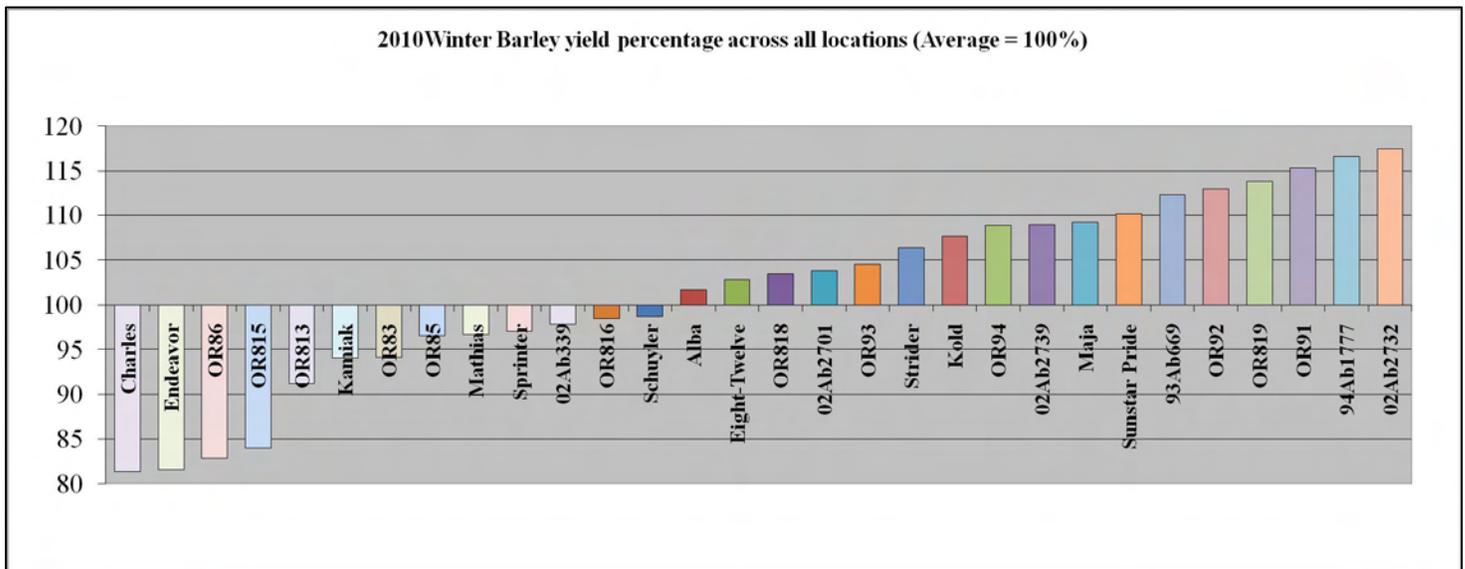


Chart 4. Winter Barley Yield Percentage Across All Locations.

## 2010 Spring Grain Yield Percentages Across Irrigated Locations Charts

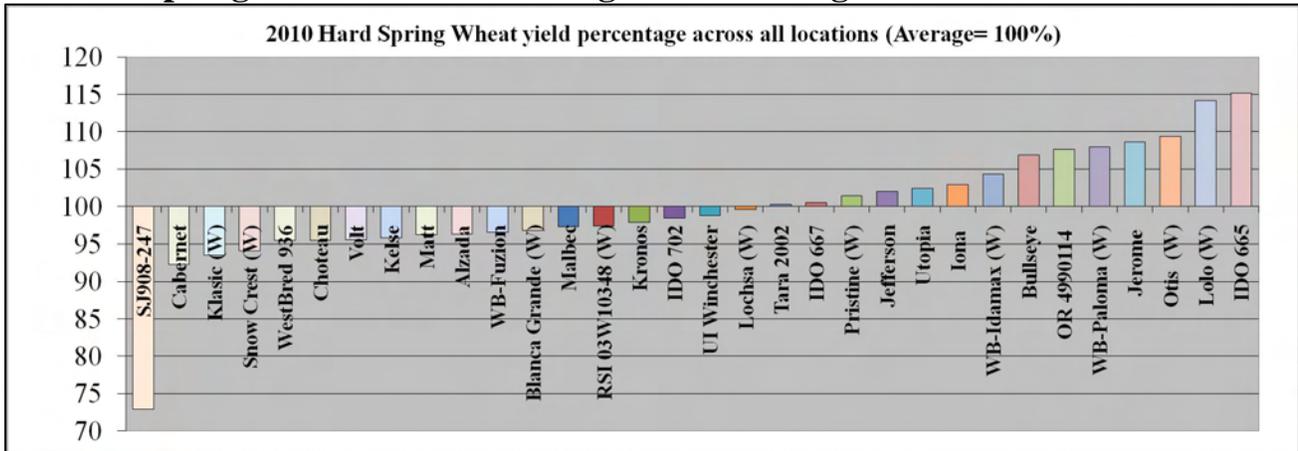


Chart 5. Hard Spring Wheat Yield Percentage Across All Locations.

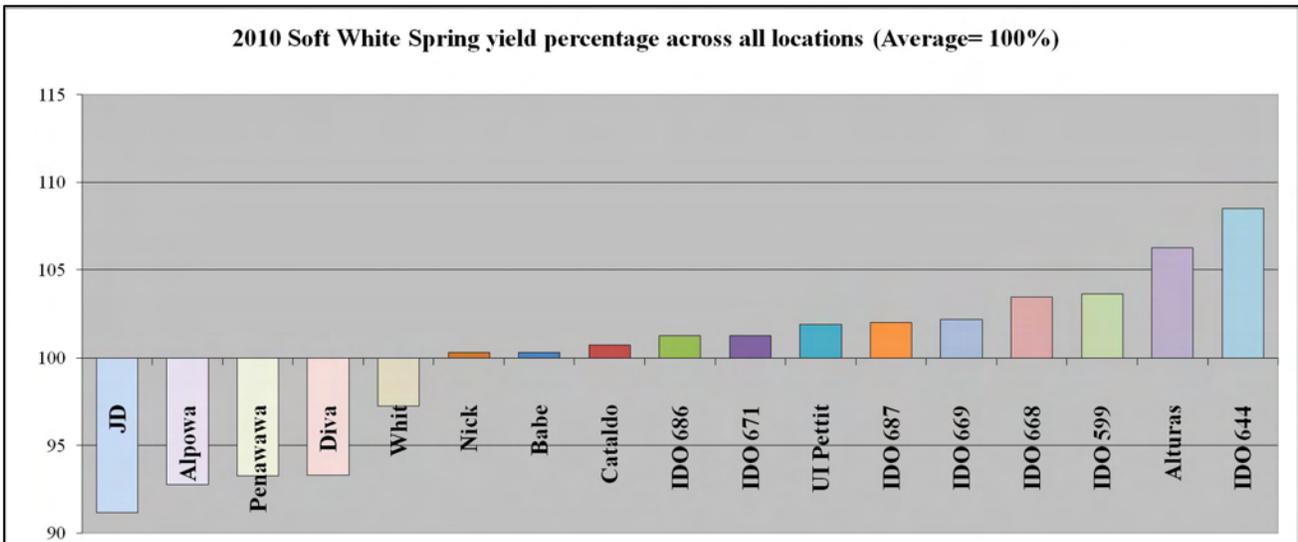


Chart 6. Soft White Spring Yield Percentage Across All Locations.

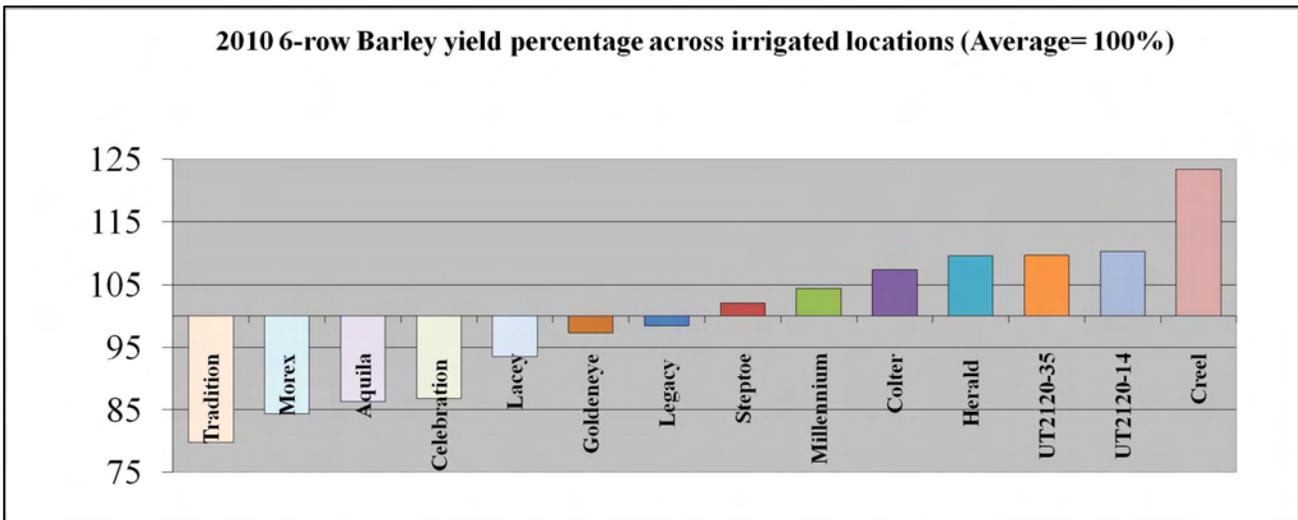


Chart 7. 6-Row Barley Yield Percentage Across Irrigated Locations.

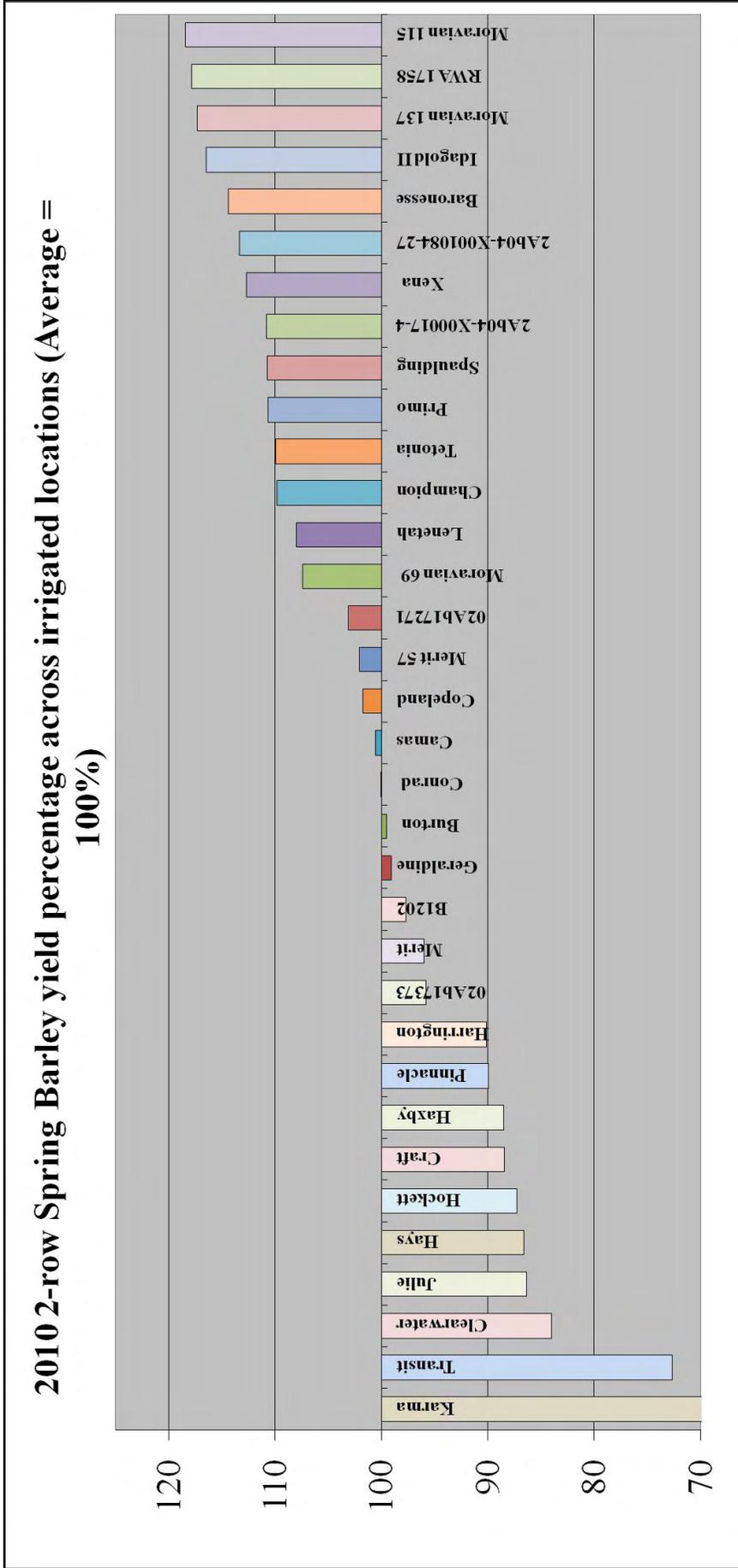


Chart 8. 2-Row Spring Barley Yield Percentage Across Irrigated Locations.

Table 58. Hard Winter Wheat Grain Protein &amp; Kernel Hardness, 2009.

Variety	-----Grain Protein %-----					-----Kernel Hardness 0-100-----						
	Kimberly	Rupert	Aberdeen	Ririe	Preston	Average	Kimberly	Rupert	Aberdeen	Ririe	Preston	Average
AgriPro Paladin	12.4	14.0	13.9	---	---	13.4	70	69	72	---	---	70.3
Bauermeister	12.9	14.4	13.7	12.2	14.4	13.5	73	68	65	63	62	66.2
BC002-02	12.9	14.6	14.4	---	---	14.0	85	76	82	---	---	81.0
Bonneville	14.2	15.4	14.0	13.5	14.4	14.3	72	71	69	66	68	69.2
Boundary	11.6	13.5	12.7	12.3	14.0	12.8	71	76	68	63	67	69.0
Deloris	12.5	13.4	13.3	13.4	13.6	13.2	78	74	71	65	70	71.6
DW	13.0	13.5	13.2	13.3	13.7	13.3	71	72	73	69	78	72.6
Eddy	12.0	13.0	13.0	13.1	13.5	12.9	67	66	66	66	67	66.4
Esperia	12.2	13.2	13.1	13.5	13.2	13.0	68	70	65	66	72	68.2
Garland	13.2	14.3	13.2	13.1	14.1	13.6	69	62	65	65	70	66.2
Gary (W)	13.3	13.5	12.7	13.1	13.6	13.2	69	69	73	66	72	69.8
Golden Spike (W)	12.1	13.1	13.3	12.5	13.5	12.9	71	65	70	68	70	68.8
IDO 621	12.1	13.0	12.4	12.4	13.1	12.6	63	72	68	62	66	66.2
Manning	12.1	13.4	13.1	12.6	13.7	13.0	60	70	73	69	74	69.2
MDM (W)	12.4	15.1	13.8	12.8	15.0	13.8	64	75	71	66	72	69.6
Mieti	12.4	14.9	14.1	13.0	14.5	13.8	61	69	61	64	74	65.8
WB-Arrowhead	11.6	13.1	13.0	12.7	13.5	12.8	65	71	68	65	71	68.0
Mol	13.2	14.8	14.4	14.5	14.8	14.3	59	76	73	70	79	71.4
Moreland	12.6	13.5	13.9	13.4	14.0	13.5	62	68	73	66	69	67.6
MT0495	11.9	13.8	14.1	12.2	13.9	13.2	58	66	67	57	70	63.6
Norwest 553	12.0	13.4	13.4	12.9	13.8	13.1	62	65	71	61	69	65.6
NuHills	11.8	12.9	13.5	13.4	13.6	13.0	59	64	64	66	77	66.0
NuHorizon (W)	11.2	12.3	12.2	12.0	13.2	12.2	60	66	63	60	71	64.0
Promontory	11.6	13.3	12.9	12.6	13.3	12.7	58	72	67	65	73	67.0
UI Darwin (W)	12.9	14.8	13.1	13.7	13.8	13.7	61	67	74	62	73	67.4
Curlew	12.8	13.8	13.9	13.3	14.0	13.6	60	68	72	65	73	67.6
Utah 100	11.9	13.0	13.0	13.5	13.3	12.9	72	76	76	73	78	75.0
W98-344	12.0	13.4	14.1	---	---	13.2	67	72	69	---	---	69.3
Weston	12.7	13.9	13.6	13.6	13.8	13.5	43	57	55	59	64	55.6
Yellowstone	11.2	13.0	12.8	12.6	13.6	12.6	64	71	70	65	78	69.6
Juniper	---	---	---	13.3	14.5	13.9	---	---	---	63	61	62.0
UICF Grace (W)	---	---	---	12.5	14.7	13.6	---	---	---	76	80	78.0
IDO 658 (W)	---	---	---	12.6	13.4	13.0	---	---	---	73	79	76.0
<b>Location Average</b>	<b>12.4</b>	<b>13.7</b>	<b>13.4</b>	<b>13.0</b>	<b>13.9</b>	<b>13.3</b>	<b>65.4</b>	<b>69.4</b>	<b>69.1</b>	<b>65.5</b>	<b>71.6</b>	<b>68.6</b>

(W) = White

**Table 59. Soft White Winter Wheat Grain Protein & Kernel Hardness, 2009.**

Variety	-----Grain Protein %-----					-----Kernel Hardness 0-100-----				
	Kimberly	Rupert	Aberdeen	Ririe	Average	Kimberly	Rupert	Aberdeen	Ririe	Average
00-475-2DH	9.2	12.7	12.8	12.1	11.7	16	20	21	14	18
02-859	10.0	11.3	12.7	11.7	11.4	11	10	20	14	14
93-64901A	8.2	11.5	12.0	11.3	10.8	12	12	22	11	14
Agripro Legion	9.1	10.7	12.2	11.0	10.8	13	16	24	16	17
Agripro Salute	9.2	10.6	13.5	11.8	11.3	22	10	28	19	20
Bitterroot	8.7	10.5	12.7	12.1	11.0	8	10	20	14	13
Bruehl*	9.6	11.3	13.7	11.9	11.6	14	20	22	14	18
Brundage	9.1	10.7	11.9	10.4	10.5	17	17	24	18	19
Brundage 96	9.0	11.1	12.6	11.3	11.0	13	15	25	19	18
Chukar	9.8	10.9	13.5	11.3	11.4	21	24	31	22	25
Clearfirst	9.5	11.4	13.0	12.3	11.6	17	21	28	17	21
Coda*	9.6	11.4	12.8	11.9	11.4	23	24	33	24	26
Daws	8.7	11.7	13.0	12.0	11.4	16	20	30	17	21
Goetz	9.8	11.5	13.1	12.5	11.7	17	15	27	15	19
ID-D-05	8.9	11.4	13.6	12.8	11.7	21	19	31	22	23
IDO 587	9.4	11.6	13.1	12.3	11.6	15	16	32	19	21
IDO 655	9.5	10.8	13.1	11.9	11.3	20	24	28	20	23
Lambert	8.8	11.3	12.7	11.1	11.0	19	23	34	25	25
Madsen	9.5	11.6	13.4	12.4	11.7	22	22	27	22	23
ORCF-101	9.9	12.0	13.0	11.9	11.7	21	21	31	20	23
ORCF-102	9.6	9.7	12.9	11.7	11.0	18	21	32	24	24
Simon	9.2	12.0	12.8	12.0	11.5	20	20	30	22	23
Skiles	10.0	11.7	13.3	11.8	11.7	15	14	24	18	18
Stephens	8.9	11.3	13.1	11.3	11.2	17	20	29	16	21
Tubbs 06	8.7	11.5	12.4	11.5	11.0	19	18	33	19	22
UICF Lambert	9.0	11.1	12.8	11.2	11.0	20	23	32	20	24
WB 456	9.8	11.3	14.9	13.1	12.3	22	18	34	28	26
WB-528	9.0	11.1	13.0	12.1	11.3	15	22	28	25	23
Westbred 470	9.5	12.2	14.1	12.5	12.1	18	18	28	18	21
Xerpha	8.9	11.4	12.8	11.1	11.1	21	26	31	21	25
<b>Location Average</b>	<b>9.3</b>	<b>11.3</b>	<b>13.0</b>	<b>11.8</b>	<b>11.4</b>	<b>17.4</b>	<b>18.6</b>	<b>28.0</b>	<b>19.1</b>	<b>20.8</b>

\* = Club Wheat

Table 60. Hard Spring Wheat Grain Protein &amp; Kernel Hardness, 2009.

Variety	.....Grain Protein %.....					.....Kernel Hardness 0-100.....						
	Rupert	Aberdeen	Idaho Falls	Ashton	Soda Springs	Average	Rupert	Aberdeen	Idaho Falls	Ashton	Soda Springs	Average
<b>Hard Red Spring</b>												
Buck Pronto	13.4	14.4	13.0	11.9	11.6	12.9	56	66	66	59	53	60.0
Bullseye	12.0	14.0	12.4	10.2	10.4	11.8	63	72	74	61	62	66.4
WB-Fuzion	13.2	14.3	13.3	11.4	10.9	12.6	76	72	71	62	62	68.6
Cabernet	12.7	13.6	12.4	11.1	10.2	12.0	50	54	63	49	44	52.0
Choteau	13.3	14.6	13.6	12.3	11.8	13.1	67	75	73	56	62	66.6
IDO 667	12.6	14.0	12.7	10.3	10.0	11.9	57	62	66	63	58	61.2
Iona	12.6	14.6	12.7	11.3	10.4	12.3	57	64	65	55	51	58.4
Jefferson	12.3	13.5	12.4	11.4	11.2	12.2	60	70	73	60	57	64.0
Jerome	12.0	13.4	12.4	10.8	10.2	11.8	61	62	66	52	57	59.6
Kelse	13.0	14.8	13.6	11.9	10.9	12.8	56	64	70	55	65	62.0
NPB HR 70	12.6	14.1	13.2	11.5	11.0	12.5	57	63	65	58	54	59.4
OR 4990114	12.2	13.4	11.9	10.4	9.9	11.6	50	57	60	54	57	55.6
RSI 40292R	13.0	14.0	12.9	10.6	10.6	12.2	64	65	72	68	64	66.6
Malbec	12.8	13.9	12.8	12.4	10.8	12.5	63	69	68	65	58	64.6
Summit	12.3	13.2	12.4	11.2	11.2	12.1	53	58	59	57	62	57.8
Tara 2002	12.1	13.8	12.0	10.9	11.3	12.0	51	59	61	54	60	57.0
UI Winchester	12.8	13.9	12.9	11.4	10.7	12.3	54	61	61	60	60	59.2
WestBred 936	12.9	14.1	12.8	11.4	11.3	12.5	50	62	64	57	65	59.6
IDO 665	---	---	---	---	11.1	11.1	---	---	---	---	66	66.0
<b>Hard White Spring</b>												
Blanca Grande (W)	13.1	13.7	12.5	11.4	11.4	12.4	46	53	55	49	54	51.4
WB-Paloma (W)	12.6	13.9	12.3	10.1	10.5	11.9	53	64	69	62	65	62.6
WB-Idamax (W)	12.3	13.8	12.5	10.3	10.5	11.9	53	62	70	60	70	63.0
Idaho 377s (W)	11.8	13.9	12.0	10.1	10.5	11.7	52	63	68	65	65	62.6
Klasic (W)	12.5	13.0	11.8	10.3	11.7	11.9	43	49	53	45	52	48.4
(W)	12.6	13.9	13.1	11.6	11.9	12.6	63	69	76	70	74	70.4
Lolo (W)	12.3	13.5	12.0	10.2	10.9	11.8	61	65	62	66	66	64.0
Otis (W)	11.7	13.7	12.1	10.6	10.6	11.7	57	70	66	68	67	65.6
Pristine (W)	12.7	14.3	13.2	11.0	11.4	12.5	62	69	75	66	67	67.8
RSI 03W10348 (W)	12.5	13.3	12.0	10.6	10.6	11.8	47	45	52	52	56	50.4
Snow Crest (W)	12.7	13.8	12.5	11.1	11.0	12.2	37	46	46	43	48	44.0
<b>Spring Durum</b>												
Alzada	12.7	14.0	12.8	10.4	---	12.5	---	---	---	---	---	---
AP1526	12.6	14.6	13.5	10.9	12.0	12.7	---	---	---	---	---	---
Kronos	12.7	14.5	13.1	10.8	11.2	12.5	---	---	---	---	---	---
Matt	12.3	13.7	12.7	9.8	11.2	11.9	---	---	---	---	---	---
Utopia	12.4	14.4	12.4	9.8	11.1	12.0	---	---	---	---	---	---
<b>Location Average</b>	<b>12.6</b>	<b>13.9</b>	<b>12.6</b>	<b>10.9</b>	<b>10.9</b>	<b>12.2</b>	<b>55.8</b>	<b>62.4</b>	<b>65.1</b>	<b>58.3</b>	<b>60.0</b>	<b>60.5</b>

(W) = White

Table 61. Soft White Spring Wheat Grain Protein & Kernel Hardness, 2009.

Variety	-----Grain Protein %-----					-----Kernel Hardness 0-100-----						
	Rupert	Aberdeen	Idaho Falls	Ashton	Soda Springs	Average	Rupert	Aberdeen	Idaho Falls	Ashton	Soda Springs	Average
Alpowa	12.3	10.6	10.9	8.9	10.6	10.7	18	23	21	23	17	20.4
Alturas	11.9	10.6	10.0	8.7	9.9	10.2	17	18	21	16	17	17.8
BZ604-002	11.8	10.7	10.3	9.6	10.0	10.5	15	19	22	23	23	20.4
Cataldo	12.5	11.6	11.0	9.5	10.2	11.0	14	18	20	11	20	16.6
Challis	12.3	10.7	10.4	9.1	9.5	10.4	16	23	24	23	24	22.0
IDO599	12.1	10.1	9.5	9.0	9.4	10.0	14	12	17	13	13	13.8
IDO629	12.3	11.1	10.8	10.0	11.0	11.0	11	12	16	17	13	13.8
IDO630	13.0	11.6	11.6	10.4	10.9	11.5	9	11	14	14	9	11.4
IDO644	12.1	10.4	10.0	9.4	9.5	10.3	21	26	24	24	23	23.6
IDO668	12.1	11.0	10.5	9.7	10.4	10.7	7	14	8	9	14	10.4
IDO669	12.1	10.2	10.6	8.8	9.9	10.3	18	23	25	21	20	21.4
IDO671	10.6	9.9	10.4	8.7	9.6	9.8	12	15	17	14	18	15.2
Nick	12.5	11.1	11.2	9.7	10.6	11.0	15	23	26	23	29	23.2
Penawawa	12.3	10.8	10.6	9.0	10.2	10.6	13	15	22	14	18	16.4
Skookum	12.2	10.4	10.6	9.5	10.5	10.6	12	12	16	17	6	12.6
Treasure	11.9	9.8	10.2	7.9	10.8	10.1	18	20	16	10	15	15.8
UI Pettit	11.3	10.2	10.2	8.5	10.1	10.1	15	22	19	9	21	17.2
Babe	12.1	9.8	10.4	8.0	9.6	10.0	13	16	19	11	17	15.2
Divia	12.4	10.8	10.6	7.5	9.5	10.2	23	24	25	16	15	20.6
Waxy Penawawa	12.6	11.2	11.1	8.3	10.9	10.8	---	5	20	0	7	8.0
Whit	12.3	10.7	11.3	8.5	10.1	10.6	14	22	23	10	21	18.0
<b>Location Average</b>	<b>12.1</b>	<b>10.6</b>	<b>10.6</b>	<b>9.0</b>	<b>10.2</b>	<b>10.5</b>	<b>14.8</b>	<b>17.8</b>	<b>19.8</b>	<b>15.1</b>	<b>17.1</b>	<b>16.8</b>

**Table 62. Percent flour protein and flour yield for soft white winter wheat at Kimberly, Rupert, Ririe, and Aberdeen, 2009.**

Variety	Flour Protein (%)					Flour Yield (%)				
	Kimberly	Rupert	Aberdeen	Ririe	Average	Kimberly	Rupert	Aberdeen	Ririe	Average
00-475-2DH	8.3	9.1	10.3	10.6	<b>9.6</b>	69.3	57.2	64.8	63.7	<b>63.8</b>
02-859	8.8	9.1	10.1	10.0	<b>9.5</b>	63.0	57.2	60.7	60.9	<b>60.5</b>
93-64901A	7.8	9.2	9.6	10.0	<b>9.2</b>	63.5	61.4	65.1	64.1	<b>63.5</b>
Agripro Legion	7.8	8.7	9.7	9.3	<b>8.9</b>	65.2	62.1	65.4	64.5	<b>64.3</b>
Agripro Salute	7.7	8.5	10.4	9.9	<b>9.1</b>	66.7	65.1	63.3	64.0	<b>64.8</b>
Bitterroot	7.8	8.7	10.2	10.6	<b>9.3</b>	67.2	62.6	66.1	62.8	<b>64.7</b>
Bruehl *	8.4	9.3	10.8	10.5	<b>9.8</b>	68.0	62.0	61.4	63.9	<b>63.8</b>
Brundage	7.4	8.4	9.4	9.1	<b>8.6</b>	66.3	64.1	64.7	64.9	<b>65.0</b>
Brundage 96	8.1	9.1	9.8	9.4	<b>9.1</b>	66.6	63.7	63.7	64.0	<b>64.5</b>
Chukar	8.4	9.2	10.5	9.7	<b>9.5</b>	66.4	64.1	65.3	64.1	<b>65.0</b>
Clearfirst	8.3	9.3	10.3	10.5	<b>9.6</b>	67.3	63.0	66.2	63.3	<b>65.0</b>
Coda *	8.1	9.8	10.0	10.2	<b>9.5</b>	69.9	64.5	68.4	66.3	<b>67.3</b>
Daws	7.7	8.9	10.0	10.0	<b>9.2</b>	67.0	59.1	61.3	62.3	<b>62.4</b>
Goetz	8.7	9.3	10.4	10.8	<b>9.8</b>	65.9	58.9	64.1	60.3	<b>62.3</b>
ID-D-05	7.9	9.4	10.7	10.9	<b>9.7</b>	67.1	62.9	64.1	64.2	<b>64.6</b>
IDO 587	8.4	9.3	10.2	10.6	<b>9.6</b>	67.5	57.7	65.2	61.1	<b>62.9</b>
IDO 655	8.3	8.7	10.3	10.3	<b>9.4</b>	66.5	64.5	61.6	65.5	<b>64.5</b>
Lambert	7.5	8.9	9.6	9.0	<b>8.8</b>	66.6	60.7	65.2	65.6	<b>64.5</b>
Madsen	8.2	9.3	10.7	10.5	<b>9.7</b>	69.0	63.8	64.4	66.4	<b>65.9</b>
ORCF-101	8.7	9.7	10.2	10.4	<b>9.8</b>	68.4	64.2	66.8	64.6	<b>66.0</b>
ORCF-102	8.0	8.6	10.0	9.9	<b>9.1</b>	67.5	67.3	65.0	64.3	<b>66.0</b>
Simon	8.0	10.3	10.1	10.1	<b>9.6</b>	70.6	64.8	68.3	66.6	<b>67.6</b>
Skiles	8.7	10.3	10.2	9.2	<b>9.6</b>	64.9	61.2	59.5	63.1	<b>62.2</b>
Stephens	7.8	9.9	10.2	8.7	<b>9.2</b>	67.1	61.3	62.2	63.8	<b>63.6</b>
Tubbs 06	7.7	10.1	9.7	9.1	<b>9.2</b>	68.8	62.0	67.1	65.1	<b>65.8</b>
UICF Lambert	7.4	9.7	9.7	8.5	<b>8.8</b>	66.4	62.7	64.7	65.2	<b>64.8</b>
WB 456	8.3	10.1	12.2	10.3	<b>10.2</b>	68.4	63.5	64.8	65.2	<b>65.5</b>
WB-528	8.1	10.1	10.9	9.7	<b>9.7</b>	64.1	62.9	65.6	64.5	<b>64.3</b>
Westbred 470	8.5	10.9	11.4	9.9	<b>10.2</b>	65.9	57.4	62.1	61.3	<b>61.7</b>
Xerpha	7.6	10.0	10.2	8.7	<b>9.1</b>	66.5	63.1	64.2	64.1	<b>64.5</b>
<b>Location average</b>	<b>8.1</b>	<b>9.4</b>	<b>10.3</b>	<b>9.9</b>	<b>9.4</b>	<b>66.9</b>	<b>62.2</b>	<b>64.4</b>	<b>64.0</b>	<b>64.4</b>

\* = Club Wheat

**Table 63. Percent break flour yield and cookie diameter for soft white winter wheat at Kimberly, Rupert, Ririe, and Aberdeen 2009.**

Variety	Break Flour Yield (%)					Cookie Diameter (cm)				
	Kimberly	Rupert	Aberdeen	Ririe	Average	Kimberly	Rupert	Aberdeen	Ririe	Average
00-475-2DH	41.8	38.8	42.5	43.9	<b>41.8</b>	9.0	8.4	8.4	8.6	<b>8.6</b>
02-859	41.0	40.1	39.8	45.0	<b>41.5</b>	8.9	8.8	8.8	9.1	<b>8.9</b>
93-64901A	38.5	38.8	38.8	43.9	<b>40.0</b>	8.7	8.9	8.7	9.0	<b>8.8</b>
Agripro Legion	42.4	39.0	35.9	39.1	<b>39.1</b>	8.8	8.6	8.5	8.8	<b>8.6</b>
Agripro Salute	38.7	35.1	36.6	41.1	<b>37.9</b>	8.7	8.8	8.5	8.8	<b>8.7</b>
Bitterroot	45.2	39.0	40.5	42.6	<b>41.8</b>	8.7	8.9	8.8	8.9	<b>8.8</b>
Bruehl *	36.8	37.1	36.4	38.6	<b>37.2</b>	9.0	8.9	8.8	8.8	<b>8.9</b>
Brundage	40.6	37.0	38.4	42.4	<b>39.6</b>	8.9	8.9	8.8	8.9	<b>8.8</b>
Brundage 96	41.4	36.9	37.8	39.8	<b>39.0</b>	8.9	8.6	8.8	8.7	<b>8.8</b>
Chukar *	42.0	37.5	39.7	38.0	<b>39.3</b>	8.8	8.9	8.6	9.0	<b>8.8</b>
Clearfirst	38.4	34.5	34.4	39.2	<b>36.6</b>	8.5	8.6	8.4	8.8	<b>8.6</b>
Coda	39.2	32.3	33.2	39.0	<b>35.9</b>	8.7	8.4	8.5	8.7	<b>8.6</b>
Daws	41.5	38.3	37.5	41.0	<b>39.6</b>	8.6	8.3	8.4	8.5	<b>8.4</b>
Goetz	35.5	40.0	31.6	38.6	<b>36.4</b>	8.6	8.4	8.5	8.8	<b>8.6</b>
ID-D-05	36.6	38.7	35.7	43.6	<b>38.7</b>	8.7	8.8	8.6	8.8	<b>8.7</b>
IDO 587	36.8	37.8	33.0	40.5	<b>37.0</b>	8.7	8.5	8.6	8.6	<b>8.6</b>
IDO 655	35.6	34.2	31.3	38.0	<b>34.8</b>	8.7	8.8	8.6	8.8	<b>8.7</b>
Lambert	39.1	36.6	33.3	39.7	<b>37.2</b>	8.5	8.5	8.5	8.8	<b>8.6</b>
Madsen	35.5	32.7	35.2	35.4	<b>34.7</b>	8.6	8.4	8.4	8.5	<b>8.5</b>
ORCF-101	33.8	34.3	30.4	35.9	<b>33.6</b>	8.6	8.4	8.5	8.6	<b>8.5</b>
ORCF-102	38.4	34.7	31.9	38.4	<b>35.9</b>	8.6	8.3	8.4	8.6	<b>8.5</b>
Simon	35.2	34.6	30.5	31.3	<b>32.9</b>	8.5	8.4	8.4	8.5	<b>8.4</b>
Skiles	39.8	37.8	37.5	42.6	<b>39.4</b>	8.7	8.7	8.7	8.7	<b>8.7</b>
Stephens	38.3	37.9	34.6	39.5	<b>37.6</b>	8.6	8.4	8.4	8.6	<b>8.5</b>
Tubbs 06	34.5	33.9	29.8	36.8	<b>33.8</b>	8.5	8.2	8.2	8.4	<b>8.3</b>
UICF Lambert	38.2	35.2	34.0	41.6	<b>37.3</b>	8.5	8.4	8.6	8.7	<b>8.5</b>
WB 456	31.6	31.5	31.8	33.6	<b>32.1</b>	8.6	8.6	8.3	8.6	<b>8.5</b>
WB-528	35.1	33.0	36.6	37.5	<b>35.6</b>	8.8	8.6	8.5	8.5	<b>8.6</b>
Westbred 470	34.1	29.9	34.5	39.4	<b>34.5</b>	8.6	8.5	8.5	8.7	<b>8.6</b>
Xerpha	30.9	32.5	35.4	39.3	<b>34.5</b>	8.4	8.4	8.4	8.6	<b>8.4</b>
<b>Location average</b>	<b>37.9</b>	<b>36.0</b>	<b>35.3</b>	<b>39.5</b>	<b>37.2</b>	<b>8.7</b>	<b>8.6</b>	<b>8.5</b>	<b>8.7</b>	<b>8.6</b>

\* = Club Wheat

Table 64. Percent flour protein and flour yield for soft white spring wheat at Rupert, Aberdeen, Idaho Falls, Ashton, and Soda Springs, 2009.

Variety	Flour Protein (14% mb)					Flour Yield (%)						
	Rupert	Aberdeen	Idaho Falls	Ashton	Soda Springs Average	Rupert	Aberdeen	Idaho Falls	Ashton	Soda Springs Average		
Alpowa	8.9	7.6	8.0	7.0	8.4	8.0	60.5	65.5	63.5	63.9	62.0	63.1
Alturas	9.0	8.1	7.7	6.8	7.7	7.9	65.6	65.8	67.2	67.5	66.1	66.4
BZ604-002	8.7	8.3	8.0	7.1	7.6	7.9	62.9	62.5	64.9	65.5	64.8	64.1
Cataldo	9.5	9.0	8.6	7.8	7.8	8.5	62.2	63.8	62.6	65.2	63.7	63.5
Challis	9.1	8.4	8.1	7.0	7.0	7.9	62.4	65.0	65.5	65.6	64.6	64.6
IDO599	9.0	7.9	7.4	7.1	7.1	7.7	65.1	65.3	67.4	67.1	65.9	66.2
IDO629	9.5	8.6	8.4	7.7	8.3	8.5	56.8	57.9	54.3	55.8	57.6	56.5
IDO630	10.2	9.2	9.4	8.2	8.4	9.1	55.3	58.0	56.0	55.3	54.3	55.8
IDO644	9.3	8.0	7.9	6.9	7.0	7.8	67.0	67.6	67.2	66.9	67.2	67.2
IDO668	9.4	8.6	8.8	7.5	7.8	8.4	66.3	66.3	67.5	67.2	66.2	66.7
IDO669	9.2	7.8	8.6	6.8	7.6	8.0	62.1	66.5	67.4	66.3	67.3	65.9
IDO671	9.0	8.1	8.7	6.9	7.2	8.0	66.4	67.1	68.2	67.5	67.8	67.4
Nick	9.6	8.4	9.0	7.1	7.3	8.3	61.9	66.6	66.1	66.1	64.7	65.1
Penawawa	9.2	8.5	8.6	6.8	7.4	8.1	58.8	62.5	63.6	63.9	60.8	61.9
Skookum	8.9	8.2	8.5	7.2	8.1	8.2	63.1	64.5	65.0	64.3	63.3	64.0
Treasure	8.5	7.2	8.0	6.2	7.5	7.5	66.2	66.5	65.2	65.2	63.9	65.4
UI Pettit	8.5	7.7	8.2	6.5	7.2	7.6	66.9	67.8	67.4	67.6	66.2	67.2
Babe	8.9	7.7	8.2	6.1	6.9	7.6	63.0	67.0	66.4	65.9	65.0	65.5
Diva	8.9	8.1	8.1	5.5	6.7	7.5	65.9	67.0	64.9	65.8	64.7	65.7
Waxy Penawawa	9.5	8.9	9.2	6.4	7.8	8.4	44.5	50.6	49.3	52.0	53.3	49.9
Whit	10.3	8.1	9.1	6.3	7.3	8.2	62.7	66.0	63.5	64.1	64.6	64.2
<b>Location Average</b>	<b>9.2</b>	<b>8.2</b>	<b>8.4</b>	<b>6.9</b>	<b>7.5</b>	<b>8.0</b>	<b>62.2</b>	<b>64.3</b>	<b>64.0</b>	<b>64.2</b>	<b>63.5</b>	<b>63.6</b>

**Table 65. Percent break flour and cookie diameter for soft white spring wheat at Rupert, Aberdeen, Idaho Falls, Ashton, and Soda Springs, 2009.**

Variety	Break Flour (%)					Cookie Diameter (cm)						
	Rupert	Aberdeen	Idaho Falls	Ashton	Soda Springs Average	Rupert	Aberdeen	Idaho Falls	Ashton	Soda Springs Average		
Alpowa	44.3	42.6	41.1	35.4	41.1	40.9	8.5	8.4	8.5	8.6	8.5	8.5
Alturas	41.1	41.7	39.6	40.4	38.6	40.3	8.4	8.7	8.6	8.5	8.7	8.6
BZ604-002	41.9	38.3	39.1	36.2	36.5	38.4	8.7	8.9	8.6	8.3	8.2	8.5
Cataldo	39.4	42.5	35.3	35.5	36.8	37.9	8.6	8.6	8.5	8.3	8.4	8.5
Challis	44.0	41.0	42.0	37.3	39.4	40.7	8.8	8.7	8.7	8.5	8.4	8.6
IDO599	43.8	45.8	46.2	43.5	43.9	44.6	8.7	8.9	8.8	8.8	8.7	8.8
IDO629	39.2	34.0	35.8	27.5	30.0	33.3	7.7	7.8	7.9	7.5	7.5	7.7
IDO630	35.0	34.4	33.5	28.1	23.6	30.9	7.5	7.5	7.6	7.3	7.2	7.4
IDO644	40.8	36.6	39.2	38.6	37.1	38.5	8.2	8.3	8.3	8.1	8.0	8.2
IDO668	38.9	38.1	40.5	35.7	38.8	38.4	8.3	8.6	8.6	8.3	8.3	8.4
IDO669	47.6	45.4	43.4	40.5	43.5	44.1	9.0	9.2	9.0	8.8	8.7	8.9
IDO671	41.9	39.1	39.9	36.3	37.8	39.0	8.6	8.7	8.6	8.4	8.4	8.6
Nick	42.4	35.8	38.2	33.3	34.8	36.9	8.7	8.6	8.5	8.3	8.4	8.5
Penawawa	44.4	39.4	39.6	36.0	32.8	38.4	8.5	8.7	8.5	8.4	8.5	8.5
Skookum	46.9	44.7	42.6	41.4	43.1	43.7	8.6	8.9	8.8	8.6	8.4	8.6
Treasure	45.9	46.1	44.8	41.8	41.7	44.1	8.8	8.7	8.8	8.9	8.6	8.8
UI Pettit	42.0	41.2	42.6	40.5	41.5	41.6	8.9	8.8	8.8	8.6	8.5	8.7
Babe	42.6	38.1	37.9	34.3	40.0	38.6	8.8	8.8	8.7	8.5	8.6	8.6
Diva	43.1	44.3	41.1	38.4	49.6	43.3	8.7	9.0	8.9	8.6	8.8	8.8
Waxy Penawawa	46.9	40.4	42.0	34.5	37.5	40.3	7.9	8.0	7.9	7.9	7.5	7.8
Whit	45.4	40.2	40.2	37.1	37.2	40.0	8.6	8.6	8.4	8.5	8.3	8.5
<b>Location Average</b>	<b>42.7</b>	<b>40.5</b>	<b>40.2</b>	<b>36.8</b>	<b>38.3</b>	<b>39.7</b>	<b>8.5</b>	<b>8.6</b>	<b>8.5</b>	<b>8.4</b>	<b>8.3</b>	<b>8.5</b>

**Table 66. Percent flour protein and flour yield for hard winter wheat at Aberdeen, Kimberly, Rupert, Ririe and Preston 2009.**

Variety	Flour Protein (14% mb)						Flour Yield (%)					
	Kimberly	Rupert	Aberdeen	Ririe	Preston	Average	Kimberly	Rupert	Aberdeen	Ririe	Preston	Average
<b>Hard Red Winter Wheat</b>												
AgriPro Paladin	10.5	12.2	12.1	---	---	<b>11.6</b>	67.7	60.4	66.4	---	---	<b>64.8</b>
Bauermeister	10.8	12.5	12.2	10.9	13.0	<b>11.9</b>	66.9	59.3	66.1	67.3	60.8	<b>64.1</b>
BC002-02	10.9	12.6	12.8	---	---	<b>12.1</b>	63.5	60.3	64.9	---	---	<b>62.9</b>
Bonneville	11.9	13.1	12.5	12.0	13.3	<b>12.6</b>	68.1	64.8	68.4	68.0	64.7	<b>66.8</b>
Boundary	10.0	11.5	11.0	10.8	12.4	<b>11.1</b>	69.9	66.0	65.8	67.0	64.8	<b>66.7</b>
Deloris	10.6	11.3	11.7	12.3	12.5	<b>11.7</b>	71.1	69.3	71.4	69.5	69.4	<b>70.1</b>
DW	11.1	11.9	11.6	12.0	12.3	<b>11.8</b>	64.2	63.4	66.9	66.6	64.7	<b>65.2</b>
Eddy	10.3	11.5	11.7	11.9	12.1	<b>11.5</b>	70.6	66.4	69.8	68.7	66.2	<b>68.3</b>
Esperia	10.6	11.7	12.0	12.1	11.9	<b>11.7</b>	67.2	65.6	65.7	64.9	65.2	<b>65.7</b>
Garland	11.1	12.3	11.3	11.5	12.5	<b>11.7</b>	63.0	59.4	64.6	63.7	57.1	<b>61.6</b>
IDO 621	10.4	11.4	10.7	10.7	11.4	<b>10.9</b>	68.5	65.0	66.9	66.7	65.9	<b>66.6</b>
Juniper	---	---	---	11.5	12.6	<b>12.1</b>	---	---	---	64.4	58.7	<b>61.6</b>
Manning	10.2	11.7	11.2	11.1	11.9	<b>11.2</b>	63.8	63.0	67.4	66.4	64.5	<b>65.0</b>
Mieti	10.8	13.1	12.5	11.4	12.8	<b>12.1</b>	69.6	65.9	66.9	68.1	65.3	<b>67.2</b>
WB-Arrowhead	10.4	11.5	11.6	11.4	12.0	<b>11.4</b>	70.2	66.4	67.8	68.3	66.6	<b>67.9</b>
Mol	12.2	13.8	13.3	13.1	13.8	<b>13.2</b>	69.6	66.3	67.8	66.1	65.5	<b>67.1</b>
Moreland	11.2	11.8	12.2	11.9	12.6	<b>11.9</b>	66.2	61.0	66.4	66.1	63.3	<b>64.6</b>
MT0495	10.7	12.4	12.6	10.8	12.4	<b>11.8</b>	67.0	62.4	67.0	65.7	63.6	<b>65.1</b>
Norwest 553	10.3	11.9	11.6	11.2	11.9	<b>11.4</b>	66.7	63.1	67.2	66.7	65.3	<b>65.8</b>
NuHills	10.5	11.3	11.8	11.7	11.7	<b>11.4</b>	63.4	59.7	63.3	64.4	63.7	<b>62.9</b>
Promontory	10.2	11.7	11.4	11.1	11.6	<b>11.2</b>	67.6	63.7	68.7	68.1	68.1	<b>67.2</b>
Curlew	11.5	13.0	12.8	12.0	12.3	<b>12.3</b>	66.7	62.6	66.9	67.6	65.2	<b>65.8</b>
Utah 100	10.3	11.5	11.2	11.8	11.5	<b>11.3</b>	67.2	62.6	67.7	66.9	66.3	<b>66.1</b>
W98-344	12.0	11.9	12.6	---	---	<b>12.2</b>	67.3	64.7	66.4	---	---	<b>66.1</b>
Weston	12.0	12.8	12.4	12.2	12.4	<b>12.4</b>	65.6	61.0	66.5	66.8	66.1	<b>65.2</b>
Yellowstone	10.1	11.5	11.5	11.0	11.7	<b>11.2</b>	69.4	66.4	67.9	67.8	66.3	<b>67.6</b>
<b>Location Average</b>	<b>10.8</b>	<b>12.1</b>	<b>11.9</b>	<b>11.6</b>	<b>12.3</b>	<b>11.8</b>	<b>67.2</b>	<b>63.5</b>	<b>67.0</b>	<b>66.8</b>	<b>64.7</b>	<b>65.7</b>
<b>Hard White Winter Wheat</b>												
Gary (W)	10.9	11.3	10.9	11.0	12.0	<b>11.2</b>	62.8	60.8	67.3	65.1	63.3	<b>63.9</b>
Golden Spike (W)	10.4	11.3	11.9	10.9	11.7	<b>11.2</b>	67.5	60.4	69.0	68.7	65.2	<b>66.2</b>
MDM (W)	10.8	13.4	12.3	11.3	13.3	<b>12.2</b>	64.6	52.8	64.3	64.9	60.1	<b>61.3</b>
NuHorizon (W)	10.0	10.9	10.9	10.8	11.3	<b>10.8</b>	66.2	65.7	66.5	65.9	68.3	<b>66.5</b>
UI Darwin (W)	11.3	12.7	11.5	12.1	11.7	<b>11.9</b>	64.8	60.5	67.3	66.3	66.2	<b>65.0</b>
UICF Grace (W)	---	---	---	10.7	13.1	<b>11.9</b>	---	---	---	64.0	60.4	<b>62.2</b>
IDO 658 (W)	---	---	---	11.1	11.3	<b>11.2</b>	---	---	---	67.3	65.1	<b>66.2</b>
<b>Location Average</b>	<b>10.7</b>	<b>11.9</b>	<b>11.5</b>	<b>11.1</b>	<b>12.1</b>	<b>11.5</b>	<b>65.2</b>	<b>60.0</b>	<b>66.9</b>	<b>66.0</b>	<b>64.1</b>	<b>64.5</b>

**Table 67. Bake volume for hard winter wheat at Aberdeen, Kimberly, Rupert, Ririe and Preston 2009.**

Variety	Bake Volume (cc)					Average
	Aberdeen	Kimberly	Rupert	Ririe	Preston	
<b>Hard Red Winter Wheat</b>						
AgriPro Paladin	1150	1000	1150	---	---	<b>1100</b>
Bauermeister	1175	925	1025	1050	1125	<b>1060</b>
BC002-02	1200	950	1000	---	---	<b>1050</b>
Bonneville	1275	1125	1100	1050	1100	<b>1130</b>
Boundary	1125	850	1025	1025	1025	<b>1010</b>
Deloris	1250	1100	1100	1175	1200	<b>1165</b>
DW	1225	1125	1175	1150	1100	<b>1155</b>
Eddy	1225	1100	1150	1150	1125	<b>1150</b>
Esperia	1225	1000	1150	1125	1025	<b>1105</b>
Garland	1100	1100	1100	1025	975	<b>1060</b>
IDO 621	1050	950	925	975	975	<b>975</b>
Juniper	---	---	---	1075	1050	<b>1063</b>
Manning	1125	1025	1075	1025	1025	<b>1055</b>
WB-Arrowhead	1225	1100	1050	1075	925	<b>1075</b>
Moreland	1400	1150	1125	1100	1000	<b>1155</b>
MT0495	1400	1100	1100	1100	1125	<b>1165</b>
Norwest 553	1200	975	1100	1025	1025	<b>1065</b>
Promontory	1075	1000	1075	1100	1025	<b>1055</b>
Curlew	1225	1175	1200	1400	1175	<b>1235</b>
Utah 100	1175	1100	1075	1125	1050	<b>1105</b>
W98-344	1200	1075	1100	---	---	<b>1125</b>
Weston	1175	1175	1150	1200	1150	<b>1170</b>
Yellowstone	1150	1000	1100	1100	1025	<b>1075</b>
<b>Location Average</b>	<b>1198</b>	<b>1050</b>	<b>1093</b>	<b>1103</b>	<b>1061</b>	<b>1101</b>
<b>Hard White Winter Wheat</b>						
Gary (W)	1125	1050	1025	1100	1075	<b>1075</b>
Golden Spike (W)	1175	1050	1100	1050	1050	<b>1085</b>
UICF Grace (W)	---	---	---	1000	1075	<b>1038</b>
IDO 658 (W)	---	---	---	1100	1075	<b>1088</b>
MDM (W)	1175	925	1075	1050	1100	<b>1065</b>
Mieti	1150	925	1050	1000	1050	<b>1035</b>
Mol	1200	1150	1200	1400	1050	<b>1200</b>
NuHills	1225	1025	1100	1125	1000	<b>1095</b>
NuHorizon (W)	1025	875	975	1025	1000	<b>980</b>
UI Darwin (W)	1150	1175	1200	1150	1100	<b>1155</b>
<b>Location Average</b>	<b>1153</b>	<b>1022</b>	<b>1091</b>	<b>1100</b>	<b>1058</b>	<b>1085</b>

(W) = White

**Table 68. Percent flour protein and flour yield for hard spring wheat at Rupert, Aberdeen, Idaho Falls, Ashton, and Soda Springs, 2009.**

Variety	Flour Protein (14% mb)					Flour Yield (%)						
	Rupert	Aberdeen	Idaho Falls	Ashton	Soda Springs Average	Rupert	Aberdeen	Idaho Falls	Ashton	Soda Springs Average		
<b>Hard Red Spring</b>												
Buck Pronto	11.7	13.2	11.7	10.7	10.1	11.5	67.4	67.7	69.7	70.4	67.2	68.5
Bullseye	10.7	12.6	11.1	8.9	8.8	10.4	69.1	69.5	68.9	69.2	66.1	68.6
WB-Fuzion	12.0	13.1	11.7	9.9	9.5	11.2	68.1	67.4	67.3	65.3	63.8	66.4
Cabernet	11.7	12.6	11.3	10.1	9.1	11.0	68.5	68.0	69.3	69.4	67.1	68.5
Choteau	12.4	13.2	12.5	11.0	10.4	11.9	63.1	66.4	67.4	67.0	64.0	65.6
IDO 665	---	---	---	---	9.1	9.1	---	---	---	---	65.2	65.2
IDO 667	11.6	12.8	11.3	9.4	8.7	10.8	68.5	68.2	67.4	67.6	65.1	67.4
Iona	11.8	13.7	11.8	10.3	9.3	11.4	71.1	69.4	70.1	69.6	67.2	69.5
Jefferson	11.3	12.2	11.0	10.0	9.6	10.8	70.7	71.1	71.1	69.5	67.7	70.0
Jerome	10.9	11.9	11.0	9.7	8.4	10.4	69.9	68.3	70.0	69.5	67.8	69.1
Kelse	12.2	13.5	12.3	10.9	9.5	11.7	65.5	63.8	67.4	67.2	65.7	65.9
NPB HR 70	11.6	12.6	11.9	10.0	9.5	11.1	68.4	67.4	67.9	66.7	64.6	67.0
OR 4990114	11.2	12.2	11.0	9.5	8.4	10.5	70.4	68.1	69.7	69.4	67.6	69.0
RSI 40292R	11.8	12.5	11.5	9.3	9.2	10.9	67.1	67.5	69.1	66.8	66.7	67.4
Malbec	12.1	12.8	11.8	11.0	9.3	11.4	66.8	66.8	67.3	66.7	63.9	66.3
Summit	11.4	12.2	11.5	10.3	9.2	10.9	65.9	65.5	67.4	65.3	63.1	65.4
Tara 2002	11.0	12.5	11.1	9.7	9.3	10.7	67.6	66.9	67.7	66.1	65.9	66.8
UI Winchester	11.9	12.6	11.7	10.2	8.9	11.1	69.3	69.4	68.4	69.1	66.4	68.5
WestBred 936	12.0	13.1	11.9	10.1	9.1	11.2	68.8	67.9	69.7	66.8	65.9	67.8
<b>Location Average</b>	<b>11.6</b>	<b>12.7</b>	<b>11.6</b>	<b>10.1</b>	<b>9.2</b>	<b>10.9</b>	<b>68.1</b>	<b>67.7</b>	<b>68.7</b>	<b>67.9</b>	<b>65.8</b>	<b>67.5</b>
<b>Hard White Spring</b>												
Blanca Grande (W)	12.3	12.6	11.4	10.6	9.6	11.3	64.9	65.6	66.7	65.5	62.4	65.0
WB-Paloma (W)	11.8	12.7	10.8	9.1	8.4	10.6	68.6	66.9	68.3	67.4	65.2	67.3
WB-Idamax (W)	11.4	12.6	11.1	9.1	8.5	10.5	69.5	65.9	69.1	67.9	65.6	67.6
Idaho 377s (W)	10.7	12.3	10.5	8.6	8.5	10.1	63.1	64.2	64.8	64.4	64.3	64.2
Klasic (W)	11.8	11.8	10.5	9.4	9.6	10.6	68.7	67.8	68.8	67.5	66.0	67.8
Lochsa (W)	11.5	12.4	10.5	10.1	8.6	10.6	69.4	68.7	69.3	70.0	67.6	69.0
Lolo (W)	10.7	11.8	10.6	8.9	8.6	10.1	64.8	65.0	65.5	66.4	63.4	65.0
Otis (W)	10.8	12.4	10.9	9.3	8.9	10.5	68.3	68.5	66.8	68.1	67.1	67.8
Pristine (W)	11.4	12.8	11.5	9.4	9.3	10.9	67.8	67.8	68.3	69.2	67.4	68.1
RSI03W10348 (W)	11.8	12.5	11.0	9.5	8.9	10.7	67.2	66.7	67.6	69.4	68.0	67.8
Snow Crest (W)	12.1	13.1	11.5	9.8	9.5	11.2	65.2	64.3	65.5	65.9	63.2	64.8
<b>Location Average</b>	<b>11.5</b>	<b>12.5</b>	<b>10.9</b>	<b>9.4</b>	<b>8.9</b>	<b>10.7</b>	<b>67.0</b>	<b>66.5</b>	<b>67.3</b>	<b>67.4</b>	<b>65.5</b>	<b>66.8</b>

(W) = White

**Table 69. Bake volume for hard spring wheat, 2009.**

Variety	Bake Volume (cc)					Average
	Aberdeen	Ashton	Idaho Falls	Rupert	Soda Springs	
<b>Hard Red Spring Wheat</b>						
Buck Pronto	1225	950	1175	1125	925	<b>1080</b>
Bullseye	1400	750	1075	1150	725	<b>1020</b>
WB-Fuzion	1400	850	1200	1225	850	<b>1105</b>
Cabernet	1400	975	1150	1300	925	<b>1150</b>
Choteau	1400	950	1150	1225	975	<b>1140</b>
IDO 665	---	---	---	---	875	<b>875</b>
IDO 667	1250	775	1050	1100	775	<b>990</b>
Iona	1400	925	1175	1125	1000	<b>1125</b>
Jefferson	1275	950	1150	1175	975	<b>1105</b>
Jerome	1275	925	1175	1125	825	<b>1065</b>
Kelse	1400	975	1200	1200	950	<b>1145</b>
NPB HR 70	1400	975	1175	1225	925	<b>1140</b>
OR 4990114	1250	950	1125	1200	875	<b>1080</b>
RSI 40292R	1250	850	1150	1200	850	<b>1060</b>
Malbec	1400	1050	1225	1250	875	<b>1160</b>
Summit	1275	975	1400	1250	900	<b>1160</b>
Tara 2002	1400	875	1200	1200	950	<b>1125</b>
UI Winchester	1400	925	1200	1175	925	<b>1125</b>
WestBred 936	1400	900	1175	1175	900	<b>1110</b>
<b>Location Average</b>	<b>1344</b>	<b>918</b>	<b>1175</b>	<b>1190</b>	<b>895</b>	<b>1093</b>
<b>Hard White Spring Wheat</b>						
Blanca Grande (W)	1400	975	1175	1275	975	<b>1160</b>
WB-Paloma (W)	1400	850	1175	1275	850	<b>1110</b>
WB-Idamax (W)	1400	875	1200	1200	850	<b>1105</b>
Idaho 377s (W)	1100	725	1050	1025	800	<b>940</b>
Klasic (W)	1400	875	1150	1250	1025	<b>1140</b>
Lochsa (W)	1400	900	1150	1075	875	<b>1080</b>
Lolo (W)	1100	750	1000	1050	850	<b>950</b>
Otis (W)	1225	825	1025	1050	900	<b>1005</b>
Pristine (W)	1150	875	1075	1100	850	<b>1010</b>
RSI 03W10348 (W)	1400	975	1200	1250	950	<b>1155</b>
Snow Crest (W)	1400	975	1225	1400	975	<b>1195</b>
<b>Location Average</b>	<b>1307</b>	<b>873</b>	<b>1130</b>	<b>1177</b>	<b>900</b>	<b>1077</b>

(W) = White

# Web Resources for Southcentral and Southeast Idaho Grain Production

