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2008 Small Grain and Grain Legume Report

Northern Idaho Small Grain and Grain Legume Research and Extension Program

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College of Agricultural and Life Sciences

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Introduction

This report summarizes the performance of winter wheat, spring wheat, spring barley, spring pea, lentil and chickpea cultivars tested in extension variety trials conducted in northern Idaho during the 2007-2008 crop season. The variety trials were located in cooperators' fields at 11 test sites in Idaho, Lewis, Nez Perce, Latah and Boundary counties.

Increases in field crop yield are the result of a combination of improved agronomic practices and advances in variety development. Trials reported in this publication help producers compare new varieties with widely grown cultivars using field production practices common for their area.

Plant breeding and extension testing programs strive to increase yield potential through enhanced disease and insect resistance, winter hardiness, straw strength and other agronomic factors. In addition, varieties are developed for improved end-use quality and new markets. A more detailed description of variety development, cooperative extension testing and evaluation, and seed production programs is given in the University of Idaho publication CIS 976 titled, "Small Grain Variety Development and Adaptation in Idaho". Additional information about the varieties can be found in the 2005 Idaho Certified Seed Selection Guide for Some Varieties of Winter Wheat (PR 311), 2006 Spring Wheat (PR 327), 2006 Spring Barley (PR 328), and 2004 Peas, Lentils and Chickpeas (PR 318). Additional variety performance data for northern Idaho and the rest of the state can be viewed at the website http://www.ag.uidaho.edu/cereals/. In Idaho, public varieties are evaluated for general adaptation in regional testing programs. The northern Idaho Extension variety testing program evaluates the relative performance of cereal and legume varieties grown in various northern Idaho environments under a range of commercial production conditions. Advanced lines that have shown promise through regional, public and private testing programs were evaluated along with leading commercially released varieties.

The information provided represents crop performance results from specific locations, production practices, and environmental conditions. Relative performance of varieties can change when tested under other environments and production practices. Evaluation of any variety included in these trials should not be construed as recommending any variety over varieties not included in the trials.

Cereal Test Procedures

Six winter cereal trials were established in northern Idaho during the fall of 2007 and nine spring cereal trials were seeded in the spring of 2008. For each crop, the seeding rate for all entries was a common number of seeds planted per square foot. These rates were determined by weighing 200 seeds of each cereal cultivar. Winter wheat and spring barley were planted at 24 seeds per square foot; spring wheat at 28 seeds. Winter and spring wheat seed was treated with Dividend Extreme at 1 oz/100 lbs; spring barley seed was treated with Raxil-Thiram at 4 oz/100 lbs. Plots were planted 20 feet long on 5 foot centers with 7 rows, 7 inches apart, except for trials with direct seeding. Direct seeded trials and the winter wheat tillage trial had five paired rows with 3 in. spacing and 10 in. from center to center of pairs. Typical cereal seeding depth varied from 1 to 1.5 inches depending on soil texture and moisture conditions. All trials were replicated four times in either a lattice or randomized complete block design. After plants were well established, plots were cut back to approximately 16.5 feet in length by application of glyphosate using a tractor-

mounted, shielded sprayer. All trials were established and maintained primarily under "grower management" conditions. Fertilizers and pesticides used in the trials are listed in Table 1 for the sites where the information was reported. Planting and harvesting operations by University of Idaho personnel were timed to approximately coincide with the cooperator's operations.

Each small grain entry at each location was evaluated for grain yield, test weight, plant height, and lodging. Lengths were measured on all plots after trimming to determine individual plot area. Cereal seed yields were reported in bushels per acre, using the standard 60 pounds per bushel conversion for wheat and 48 pounds per bushel for barley. Winter and spring wheat protein and kernel hardness were determined on samples that were composited from the four replications at each site. Wheat whole grain protein at 12% moisture was measured at the University of Idaho Wheat Quality Laboratory at Aberdeen using Near Infrared Spectrometry (NIRS) technology. Kernel hardness was also determined by NIRS. Values under 50 indicate soft wheat and values above 50 indicate hard wheat. Cereal test weight is reported in pounds per standard bushel. Cereal plant height is inches from the soil surface to the tip of the heads, awns excluded.

Lodging was determined for all cereals. Area affected was scored from 1 to 100, with 1 equal to no lodging and 100 being completely lodged. Severity of lodging was scored from 1 to 5, with 1 equal to upright and 5 being bent flat. The product of the two scores was adjusted to a scale of 0 to 100 to reflect percent lodging. Percentage grain plumps and thins were measured for barley only. Plumpness is the percent of the sample that stayed on top of a 6/64 inch slotted screen after shaking. Thin percentage is the portion of the sample that went through a 5.5/64 inch slotted screen.

Legume Test Procedures

In the spring of 2008, spring pea and lentil trials were seeded near Craigmont, Genesee and Moscow. A chickpea trial was conducted at the Moscow site. For each legume cultivar, 100 seeds were weighed and seeding rates calculated to give a planting density of pea at 8 seeds, lentil at 9 seeds, and chickpea at 6 seeds per square foot. Spring pea and lentil were treated with an Apron, Cruiser, and Maxim mix at 2 oz/100 lbs; and chickpea was treated with Garb mix (Apron, Cruiser, Maxim and LSP) at 2.5 oz/100 lbs. Legume plots were established in dimensions and manner similar to the cereal trials. Planting depths were 1 to 2 inches for lentil; 2 to 2.5 inches for pea and chickpea. Sites were hand weeded to supplement chemical control. Legumes were evaluated for seed yield, plant height, and 100 seed weight. Seed yields were expressed as pounds per acre. Lentil or chickpea plant heights or pea vine lengths were measured from soil surface to end of growing point on the main tiller. Pea canopy heights were measured from the soil surface to the average tall point in the canopy approximately three weeks prior to harvest.

Statistical Interpretation

Crop class averages are shown within the body of the data tables and overall trial average at the bottom of the table. The least significant difference (LSD) and the coefficient of variation (CV) are listed. The LSD is given at the 10 percent error level and is an aid in comparing varieties. If the measured values of any two varieties within a column differ by the LSD value or greater, they may be considered different with a confidence level of 90%. If the measured values are less than

the LSD value, the differences may be due to random error rather than real differences. If no significant statistical differences were found among cultivars, NS is shown for the LSD. Where data represent cultivar means across locations or years, an approximation of a combined LSD was calculated. Coefficient of variation (CV) is also included in the tables. This is given as a general measurement of the precision of each experiment. Lower CV percentage values indicate less experimental variation and greater precision. CV values were not averaged across trials or years. There is no LSD or CV for wheat protein or hardness data from composited samples.

When making cultivar choices try to evaluate as much performance data as possible. Make comparisons across years and locations. In addition to yield, also consider other characteristics, such as end use quality, disease and insect resistance, lodging tendency, maturity, plant height, winter hardiness, test weight, and any others you deem important. Grain quality of wheat varieties is listed on the Idaho Wheat Commission website: www.idahograin.org under "Preferred Varieties".

Growing Conditions and Factors Affecting Trials

Fall cereal trials were seeded during October 2007. Winter wheat trials established well at all locations but greater snowfall and cooler spring conditions than usual resulted in thinner stands. Conditions became hot and dry by spring's end and continued through the summer, though broken up by heavy rain events in June and August. Weather stations in Moscow recorded above and below average precipitation months from November 2006 to November 2007, with the largest percentage deficits during July. The Genesee site was most severely affected, with an average winter wheat yield of 53 bu/A and an average test weight of 59 lb/bu. The average winter wheat yield over all locations in 2007-2008 was 9 bu/A lower than the average yield over the previous three crop years.

Spring trials were seeded between April 22 and May 12. Planting was delayed due to lingering snowdrifts and moist soil conditions. Late spring and early summer were drier than normal which impacted both yield and test weight though the impact of the drought conditions varied based on location and crop. The spring wheat and spring barley yields were generally below average. Spring wheat yields in 2008 were 20 bu/A lower than the previous 3-year average, and spring barley was 18 bu/A lower than the previous 3-year average. Early growth of spring legumes was very good, but then the lack of rain affected seed development, and yields and seed size were reduced. Specific management practices for individual trials are listed in Table 1.

Trial Locations, Management and Varieties Tested

Table 1. 2007-2008 Northern Idaho Extension variety trial site management information.

County	Nursery Location	Crops*	Planting Date	Harvest Date	Previous Crop	Fertilizer N-P-K-S(lb/A)	----Chemical---- Name(s)	Rates(s)
Lewis	Craigmont	WW	10/2008	9/11/2008	W.Wheat	95-27-0-17	Osprey	lable rate
Lewis	Craigmont	SW + SB	5/1/2008	9/11/2008	W. Wheat	65-10-0-15	Orion Ally 60 XP	17 oz/A 0.1oz/A
Lewis	Craigmont	SL	5/6/2008	9/18/2008	W. Wheat	None	Roundup Pursuit Assure II	16 oz/A 2.5 oz/A 8 oz/A
Nez Perce	Tammany	WW	10/1/2007	7/25/2008	S. Fallow	115-22-11-18	Olympus Brox-M Metribuzen	0.9 oz/A 1 pt/A 0.3 oz./A
Nez Perce	Genesee	SW + SB	4/22/2008	8/28/2008	W. Wheat	171-38-0-17	Orion Axial	17 oz./A 16.4 oz./A
Nez Perce	Genesee	SL-NT	4/16/2007	9/3/2008	W. Wheat	None	Prowl Roundup	16 oz/A 16 oz/A Pre
Latah	Moscow	SL + CP	5/7/2008	9/17/2008	S. Wheat	None	Roundup Pursuit Headline Poast Dimethoate	14 oz/A 2.5 oz/A 10 oz/A 12 oz/A 1 pt/A
Latah	Moscow Parker Farm	WW-NT	10/2007	8/27/2008	S. Pea	139-28-0-29	Roundup RT 2-4-D Puma Bronate Adv. Starane	20 oz/A Pre 32 oz/A Pre 11 oz/A 16 oz/A 10 oz/A
Latah	Moscow Parker Farm	SL-NT	5/7/2008	8/27/2008	S. Wheat	None	Roundup 2-4-D Sencor DF	20 oz/A Pre 32 oz/A Pre 6 oz/A
Latah	Moscow Parker Farm	SB-NT	5/9/2008	8/27/2008	W. Wheat	139-28-0-29	Roundup 2-4-D Brox-M Harmony Extra XP Starane	20 oz/A Pre 32 oz/A Pre 16 oz/A 0.3 oz/A 7 oz/A

Table 1 (continued). 2007-2008 Northern Idaho Extension variety trial site management informatio

County	Nursery Location	Crops*	Planting Date	Harvest Date	Previous Crop	Fertilizer N-P-K-S(lb/A)	----Chemical---- Name(s)	Rates(s)
Latah	Genesee	SL	5/9/2008	8/28/2008	S. Wheat	None	Roundup Pursuit	20 oz/A Pre 2.5 oz/A
Boundary	B. Ferry	WW	10/2007	9/5/2008	Sum. Fallow	106-31-43-20	Achieve 40 DG Curail	0.6 lbs/A 2.5 pt/A
Boundary	B. Ferry	SW + SB	5/9/2008	9/5/2008	Sum. Fallow	106-31-43-20	Achieve 40 DG Curail	0.6 lbs/A 2.5 pt/A

* CP - Chickpea, SL - Spring Legume (pea + lentil), SW - Spring Wheat, SB - Spring Barley, WW - Winter Wheat, NT - No-Till.

Table 2. Released varieties tested in Northern Idaho Extension variety trials in 2007-2008

Variety	Experimental No.	Released	Developer(s) of variety
Soft white winter wheat			
Bitterroot	ID 92-22407A	2007	University of Idaho, USDA/ARS
Brundage 96	ID-B-96	2001	University of Idaho, USDA/ARS
Concept	89S88D	2004	Grant Torrey & Connell Grain Growers
Goetze	ORH010920	2007	Oregon State University, USDA/ARS
IDO 587	IDO 587	2002	University of Idaho, USDA/ARS
Lambert	ID 85-153	1993	University of Idaho, USDA/ARS
Madsen	WA 7163	1988	Washington State University, USDA/ARS
Mohler	BU6W93-477	2001	WestBred, LLC, Bozeman, MT
ORCF-101	OR2010051	2002	Oregon State University, USDA/ARS
ORCF-102	OR2010007	2004	Oregon State University, USDA/ARS
Simon	ID 91-34302A	2002	University of Idaho, USDA/ARS
Stephens	OR 65-116	1977	Oregon State University, USDA/ARS
Tubbs 06	OR 939526 - re-select	2006	Oregon State University, USDA/ARS
WestBred 528	BZ6W98-528	2004	WestBred, LLC, Bozeman, MT
Xerpha	WA7973	2008	Washington State University, USDA/ARS
Winter club wheat			
Cara	ARS97135-9	2007	Washington State University, USDA/ARS
Chukar	WA 7855	2001	Washington State University, USDA/ARS
Coda	WA 7752	1998	Washington State University, USDA/ARS
Rohde	OR 855	1992	Oregon State University, USDA/ARS
Hard winter wheat			
Boundary (HR)	IDO 467	1997	University of Idaho, USDA/ARS
Bauermeister (HR)	WA 7939	2005	Washington State University, USDA/ARS
MDM (HW)	WA 7936	2005	Washington State University, USDA/ARS
Paladin (HR)	W96-355		AgriPro
Soft white spring wheat			
Alturas	IDO 526	2002	University of Idaho, USDA/ARS
Cataldo	IDO 642	2007	University of Idaho, USDA/ARS
Eden	WA 7902	2002	Washington State University, USDA/ARS
Louise	WA 7921	2004	Washington State University, USDA/ARS
Nick	BZ 698-31	2000	WestBred, LLC, Bozeman, MT
Penawawa		1985	Washington State University, USDA/ARS
Hard white spring wheat			
IDO 377s	IDO 377s	1996	University of Idaho, USDA/ARS
Lochsa	IDO 597	2004	University of Idaho, USDA/ARS
Lolo	IDO 533	1999	University of Idaho, USDA/ARS
Otis	WA 7931	2004	Washington State University, USDA/ARS

Table 2 (cont.) Released varieties tested in Northern Idaho Extension variety trials in 2007-2008.

Variety	Experimental No.	Released	Developer(s) of variety
Hard red spring wheat			
Cabernet			
Hank	BZ 992-322	1999	WestBred, LLC, Bozeman, MT
Hollis	WA 7859	2002	Washington State University, USDA/ARS
Jefferson	IDO 462	1998	University of Idaho, USDA/ARS
Jerome	IDO 566	2004	University of Idaho, USDA/ARS
Tara 2002	WA 7824	2001	Washington State University, USDA/ARS
WestBred 926	RC 80-8	1987	WestBred, LLC, Bozeman, MT
Two-row spring barley			
Baronesse	NS 078054	1992	WestBred, LLC, Bozeman, MT
Camas	ND 9147	1998	University of Idaho, USDA/ARS
Champion	YU-501-385D		WestBred, LLC, Bozeman, MT
Conrad	B5057	2005	Busch Ag. Resources, Inc.
Harrington	TR-441	1981	University of Saskatchewan, Canada
Lenetah	01Ab11107	2007	University of Idaho, USDA/ARS
Merit		2000	Busch Ag. Resources, Inc.
AC Metcalfe	TR-232	1994	Ag. Canada
Radiant	98NZ223		Washington State University, USDA/ARS
Spaulding	PB1-95-2R-522	2005*	Plant Breeders 1, Moscow, ID
* certified			
Two-row hulless spring barley			
Bear	WA 11045-87	1996	Washington State University, USDA/ARS
Six-row spring barley			
Steptoe		1973	Washington State University, USDA/ARS
Tradition	6B95-2482	2003	Busch Ag. Resources, Inc.
Lentil			
Brewer		1984	Washington State University, USDA/ARS
Crimson		1990	Washington State University, USDA/ARS
Eston		1980	University of Saskatchewan, Canada
Merrit	LC 460266B	2001	Washington State University, USDA/ARS
Pardina			Spain
Richlea			Ag. Canada
Riveland			Washington State University, USDA/ARS

Table 2 (cont.) Released varieties tested in Northern Idaho Extension variety trials in 2007-2008.

Variety	Experimental No.	Released	Developer(s) of variety
Yellow pea			
Carousel	SW 995848	2004	ProGene
Delta			Cebeco, Netherlands
Rex		1993	Crop and Food Research, New Zealand
Shawnee	PS 010603	1997	Washington State University, USDA/ARS
Swing	Ceb 1437		Cebeco, Netherlands
Topeka	Ceb 1489	2003	Cebeco, Netherlands
Universal		2000	Svalof Weibull
Green pea			
Aragorn			ProGene
Ariel	NZ 4L25	2001	Crop and Food Research, New Zealand
Banner	Pro 031-7053	2007	ProGene
Columbian			Campbell Soup Co.
Cruiser	NZ 4L28	2001	Crop and Food Research, New Zealand
Joel	PS 110028	1997	Washington State University, USDA/ARS
Karita		1995	Svalof Weibull
Medora	PS 99102238	2006	Washington State University, USDA/ARS
Monarch	Pro 98106	2003	ProGene
Pacifica	Pro 011-7107	2003	ProGene
Stirling	PS 610152	2002	Washington State University, USDA/ARS
Kabuli chickpea			
Dwelley		1994	Washington State University, USDA/ARS
Dylan	CA 9990I604C	2005	Washington State University, USDA/ARS
Sierra	CA 9783152C	2001	Washington State University, USDA/ARS
Spanish White			Spain
Troy	CA 99901875W	2007	Washington State University, USDA/ARS
Desi chickpea			
Myles		1994	Washington State University, USDA/ARS

Winter Wheat

Table 3. Winter wheat variety performance results at Craigmont, 2007-2008.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Bitterroot	82	10.5	25	59.1	33	0
Brundage 96	72	11.5	24	57.8	29	0
Concept	71	11.3	23	59.6	29	0
Goetze	68	11.2	24	57.5	28	0
IDO 587	79	11.3	22	56.7	32	0
Lambert	82	10.9	29	57.6	35	0
Madsen	72	11.0	30	58.2	30	0
Mohler	81	10.9	27	58.3	33	0
ORCF-101	79	11.4	30	58.4	31	0
ORCF-102	84	10.9	29	58.6	32	0
Simon	81	10.9	26	58.5	33	0
Stephens	77	10.9	23	57.7	31	0
Tubbs 06	80	10.6	25	57.0	34	0
WestBred 528	72	11.0	26	59.1	30	0
Xerpha	91	10.5	28	58.1	33	0
IDO 655	71	11.2	24	59.8	35	0
ID 99-435	88	10.8	30	57.9	35	0
ID 93-64901A	77	11.0	21	59.2	30	0
ID 02-859	80	10.8	19	57.1	30	0
ID 00-475-20H	70	11.9	21	59.3	30	0
Average	78	11.0	25	58.2	32	0
Hard Wheat						
MDM (HW)	68	11.0	50	59.9	31	0
Boundary (HR)	77	10.6	52	59.4	30	0
Bauermeister (HR)	76	10.7	54	59.5	34	0
Paladin (HR)	80	11.6	57	62.1	31	0
IDO 621 (HR)	74	11.3	46	60.3	29	0
Average	75	11.0	52	60.2	31	0
Club						
ORN-553	76	11.3	47	60.1	27	0
Cara	74	11.6	30	56.9	29	0
Chukar	75	11.6	32	56.9	30	0
Coda	76	12.3	30	59.7	31	0
Rohde	77	12.1	29	59.9	29	0
Average	76	11.8	34	58.7	30	0
Overall Average	77	11.1	31	58.7	31	0
LSD (0.10)	12	--	--	1.2	2	0
CV (%)	11	--	--	1.4	5	0

Table 4. Winter wheat variety performance results at Lewiston, 2007-2008.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Bitterroot	81	13.2	18	57.2	43	0
Brundage 96	85	14.3	23	55.7	40	0
Concept	68	14.3	18	54.1	39	1
Goetze	93	13.9	22	54.2	38	0
IDO 587	83	15.1	27	54.3	40	0
Lambert	95	13.7	27	56.2	45	1
Madsen	79	15.0	29	54.2	41	0
Mohler	90	13.8	26	55.5	42	1
ORCF-101	88	13.9	26	55.4	40	0
ORCF-102	92	13.7	27	57.2	44	0
Simon	94	13.6	26	56.4	42	0
Stephens	86	14.5	27	54.1	39	0
Tubbs 06	93	14.0	26	54.5	44	0
WestBred 528	97	12.8	25	59.0	40	0
Xerpha	102	13.9	29	55.8	44	1
IDO 655	85	13.6	8	57.6	46	4
ID 99-435	95	13.6	28	55.7	46	1
ID 93-64901A	92	13.0	18	56.8	44	1
ID 02-859	90	13.6	19	54.6	39	0
ID 00-475-20H	75	14.2	21	55.9	43	1
Average	89	13.9	24	55.6	42	1
Hard Wheat						
MDM (HW)	67	14.1	49	54.1	42	5
Boundary (HR)	90	13.5	58	57.9	40	0
Bauermeister (HR)	71	13.6	54	54.2	45	5
Paladin (HR)	86	13.5	58	59.9	40	0
IDO 621 (HR)	99	12.8	56	58.8	40	0
Average	83	13.5	55	57.0	41	2
Club						
ORN-553	97	13.4	57	60.1	36	0
Cara	91	14.2	29	53.4	40	1
Chukar	91	14.0	29	54.2	41	1
Coda	77	14.9	30	54.7	41	4
Rohde	90	14.0	28	58.7	42	1
Average	89	14.1	35	56.2	40	1
Overall Average	87	13.9	31	56.0	41	1
LSD (0.10)	9	--	--	1.4	2	1
CV (%)	7	--	--	1.8	3	87

Table 5. Winter wheat variety performance results at Genesee direct seeded, 2007-2008.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Bitterroot	59	12.2	24	59.2	32	0
Brundage 96	53	13.5	24	54.0	30	0
Concept	49	13.2	21	57.6	27	0
Goetze	56	12.9	21	58.1	29	0
IDO 587	56	13.2	22	58.0	31	0
Lambert	46	13.4	26	57.5	33	0
Madsen	41	14.0	25	56.7	29	0
Mohler	48	13.1	18	56.9	32	0
ORCF-101	52	14.1	23	57.6	32	0
ORCF-102	55	13.8	25	58.7	31	0
Simon	54	13.6	25	57.9	31	0
Stephens	46	13.6	25	57.3	31	0
Tubbs 06	53	13.6	25	56.4	33	0
WestBred 528	57	13.3	27	61.1	32	0
Xerpha	60	13.9	26	58.4	32	0
IDO 655	55	13.2	28	60.3	34	0
ID 99-435	50	13.1	26	58.5	34	0
ID 93-64901A	59	12.1	22	58.6	31	0
ID 02-859	52	14.0	21	56.7	29	0
ID 00-475-20H	53	13.6	22	58.7	31	0
Average	53	13.4	24	57.9	31	0
Hard Wheat						
MDM (HW)	60	12.8	48	59.3	31	0
Boundary (HR)	52	13.3	56	59.7	30	0
Bauermeister (HR)	58	12.8	56	58.3	31	0
Paladin (HR)	49	13.8	61	62.3	30	0
IDO 621 (HR)	55	13.0	54	60.4	29	0
Average	55	13.1	55	60.0	30	0
Club						
ORN-553	63	13.2	68	62.5	30	0
Cara	50	13.9	31	57.1	27	0
Chukar	47	13.6	32	57.3	27	0
Coda	48	14.2	29	59.6	31	0
Rohde	45	13.9	28	59.5	28	0
Average	51	13.8	38	59.2	28	0
Overall Average	53	13.4	31	58.5	31	0
LSD (0.10)	8	--	--	1.4	3	0
CV (%)	11	--	--	3.3	3	0

Table 6. Winter wheat variety performance results at Moscow direct seeded, 2007-2008.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Bitterroot	96	9.6	22	59.9	37	0
Brundage 96	94	9.6	25	60.7	33	0
Concept	90	9.7	21	61.7	31	0
Goetze	91	10.3	25	61.2	31	0
IDO 587	92	10.1	27	61.7	34	0
Lambert	94	9.7	32	61.9	38	0
Madsen	94	9.8	29	61.0	34	0
Mohler	96	9.8	31	61.6	36	0
ORCF-101	92	10.5	31	62.1	34	0
ORCF-102	95	9.7	28	60.4	35	0
Simon	96	10.3	31	60.7	35	0
Stephens	91	10.2	28	58.1	36	0
Tubbs 06	101	9.4	32	60.8	36	0
WestBred 528	93	9.2	30	62.7	34	0
Xerpha	104	9.2	28	59.8	35	0
IDO 655	95	9.9	31	62.7	38	0
ID 99-435	91	9.6	30	61.0	38	0
ID 93-64901A	100	9.5	23	61.0	35	0
ID 02-859	98	9.6	22	60.6	32	0
ID 00-475-20H	94	9.7	23	61.5	34	0
Average	95	9.8	27	61.1	35	0
Hard Wheat						
MDM (HW)	110	9.6	45	53.7	37	0
Boundary (HR)	88	10.2	60	62.0	34	0
Bauermeister (HR)	105	9.3	51	54.0	38	0
Paladin (HR)	77	11.5	60	63.6	33	0
IDO 621 (HR)	87	10.2	56	62.9	32	0
Average	94	10.2	54	59	35	0
Club						
ORN-553	81	11.1	58	62.9	31	0
Cara	89	9.9	29	60.4	34	0
Chukar	90	9.8	30	60.8	35	0
Coda	84	10.4	34	63.4	37	0
Rohde	82	10.4	27	62.8	33	0
Average	85	10.3	36	62.1	34	0
Overall Average	93	9.9	34	60.9	35	0
LSD (0.10)	6	--	--	2.3	1	0
CV (%)	4	--	--	2.6	2	0

Table 7. Winter wheat variety performance results at Bonners Ferry, 2007-2008.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Bitterroot	74	8.4	10	56.0	27	0
Brundage 96	64	9.1	17	55.8	24	0
Concept	58	9.4	13	56.9	24	0
Goetze	68	10.1	15	56.3	24	0
IDO 587	47	10.6	18	57.1	25	0
Lambert	51	10.0	22	57.2	28	0
Madsen	62	9.1	19	55.7	24	0
Mohler	60	9.4	16	56.5	26	0
ORCF-101	60	9.8	12	57.4	26	0
ORCF-102	69	9.3	16	56.6	26	0
Simon	62	9.6	18	57.2	25	0
Stephens	58	10.8	23	57.4	25	0
Tubbs 06	62	9.3	19	56.3	27	0
WestBred 528	64	10.5	16	57.8	26	0
Xerpha	63	8.9	21	57.6	25	0
IDO 655	53	9.2	20	58.5	25	0
ID 99-435	53	9.7	21	57.0	26	0
ID 93-64901A	71	8.8	12	56.3	26	0
ID 02-859	73	8.9	9	55.6	23	0
ID 00-475-20H	58	9.9	16	58.3	25	0
Average	61	9.5	17	56.9	25	0
Hard Wheat						
MDM (HW)	67	9.5	43	59.0	27	0
Boundary (HR)	65	9.8	48	59.4	25	0
Bauermeister (HR)	63	9.3	44	58.5	28	0
Paladin (HR)	60	11.2	55	61.4	25	0
IDO 621 (HR)	60	10.3	46	60.7	23	0
Average	63	10.0	47	59.8	26	0
Club						
ORN-553	60	11.1	59	61.1	23	0
Cara	67	9.1	22	56.5	24	0
Chukar	69	8.9	23	57.0	25	0
Coda	62	9.9	24	58.5	25	0
Rohde	63	10.0	22	58.8	24	0
Average	64	9.8	30	58.4	24	0
Overall Average	62	9.7	24	57.6	25	0
LSD (0.10)	15	--	--	0.9	3	0
CV (%)	5	--	--	0.8	5	0

Table 8. Combined winter wheat performance data for Craigmont, Lewiston, Genesee, Moscow, and Bonners Ferry, 2007-2008.

Variety or Selection	Seed Yield					
	Lewiston	Genesee	Craigmont	Moscow	B. Ferry	Average
			bu/acre			
Soft White						
Bitterroot	81	59	82	96	74	78
Brundage 96	85	53	72	94	64	74
Concept	68	49	71	90	58	67
Goetze	93	56	68	91	68	75
IDO 587	83	56	79	92	47	71
Lambert	95	46	82	94	51	74
Madsen	79	41	72	94	62	70
Mohler	90	48	81	96	60	75
ORCF-101	88	52	79	92	60	74
ORCF-102	92	55	84	95	69	79
Simon	94	54	81	96	62	77
Stephens	86	46	77	91	58	72
Tubbs 06	93	53	80	101	62	78
WestBred 528	97	57	72	93	64	77
Xerpha	102	60	91	104	63	84
IDO 655	85	55	71	95	53	72
ID 99-435	95	50	88	91	53	75
ID 93-64901A	92	59	77	100	71	80
ID 02-859	90	52	80	98	73	79
ID 00-475-20H	75	53	70	94	58	70
Average	89	53	78	95	61	75
Hard Wheat						
MDM (HW)	67	60	68	110	67	75
Boundary (HR)	90	52	77	88	65	74
Bauermeister (HR	71	58	76	105	63	75
Paladin (HR)	86	49	80	77	60	70
IDO 621 (HR)	99	55	74	87	60	75
Average	83	55	75	94	63	74
Club						
ORN-553	97	63	76	81	60	76
Cara	91	50	74	89	67	74
Chukar	91	47	75	90	69	74
Coda	77	48	76	84	62	69
Rohde	90	45	77	82	63	72
Average	89	51	76	85	64	73
Overall Average	87	53	77	93	62	75
LSD (0.10)	9	8	12	6	15	4
CV (%)	7	11	11	4	5	--

Table 9. Grain yield averages for winter wheat varieties tested for three years in northern Idaho.

Variety or Selection	2005-2006	2006-2007	2007-2008	Average
Number of Sites	5	5	5	5
	----------bu/acre----------			
Soft White				
Bitterroot	85	68	78	77
Brundage 96	82	73	74	76
Concept	83	68	67	73
IDO 587	80	64	71	72
Lambert	82	68	74	75
Madsen	82	69	70	74
Mohler	89	74	75	79
ORCF-101	83	68	74	75
ORCF-102	91	68	79	79
Simon	84	69	77	77
Stephens	82	67	72	74
Tubbs06	88	69	78	78
WestBred 528	86	73	77	79
Average	84	69	74	76
Hard Wheat				
Boundary (HR)	81	70	74	75
Bourmeister (HR)	80	70	75	75
MDM (HW)	80	64	75	73
IDO 621 (HR)	82	72	75	76
Average	81	69	75	75
Club				
Chukar	84	65	74	74
Coda	80	65	69	
Rohde	80	72	72	
Average	81	67	72	73
Overall Average	84	69	74	75
LSD (0.10)	3	4	4	--

Spring Wheat

Table 10. Spring wheat variety performance results at Craigmont, 2008.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Alturas	15	15.4	10	51.4	20	0
Cataldo	15	15.5	9	48.1	23	0
Eden	19	16.3	18	52.8	22	0
Louise	16	16.7	13	51.0	22	0
Nick	21	15.9	11	50.6	20	0
Penawawa	16	16.5	14	52.3	18	0
WA8008	16	17.1	21	49.0	21	0
WA8039	22	17.2	20	54.2	21	0
ML 37-A	12	19.1	33	51.5	17	0
Average	17	16.6	17	51.2	20	0
Hard White						
IDO 377s	16	17.7	52	51.7	21	0
Lolo	18	17.2	54	52.3	21	0
Otis	17	17.9	65	54.1	21	0
Lochsa	17	17.1	57	48.7	22	0
OR 4201261	14	17.9	70	51.6	17	0
Average	16	17.6	60	51.7	20	0
Hard Red						
Cabernet	16	17.7	50	49.6	18	0
Hank	20	17.5	50	50.4	21	0
Jefferson	20	18.0	63	52.5	21	0
Jerome	17	16.3	50	50.0	22	0
Kelse	16	18.9	61	50.6	21	0
Tara 2002	19	17.0	49	52.2	22	0
WestBred 926	19	17.7	51	51.0	23	0
IDO 578	19	17.8	51	50.2	21	0
20035	17	17.1	45	49.7	21	0
NPBHR 70	20	17.6	48	50.8	22	0
10348	20	16.6	37	50.6	21	0
Average	18	17.5	50	50.7	21	0
Overall Average	17	17.2	40	51.1	21	0
LSD (0.10)	2	--	--	0.7	1	--
C.V. (%)	9	--	--	1.2	1	--

Table 11. Spring wheat variety performance results at Genesee, direct seed, 2008.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Alturas	43	11.8	13	54.7	25	0
Cataldo	36	12.5	14	52.7	24	0
Eden	47	11.8	22	57.0	25	0
Louise	41	12.9	20	55.1	28	0
Nick	42	13.1	18	53.3	25	0
Penawawa	41	13.4	13	54.0	23	0
WA8008	48	13.5	17	53.8	25	0
WA8039	42	12.5	14	55.1	25	0
ML 37-A	38	14.3	21	52.6	23	0
Average	42	12.9	17	54.3	25	0
Hard White						
IDO 377s	44	14.2	49	54.3	27	0
Lolo	42	13.8	53	58.0	26	0
Otis	44	13.4	51	57.3	30	0
Lochsa	39	14.0	57	54.8	25	0
OR 4201261	44	13.2	55	54.8	24	0
Average	43	13.7	53	55.8	26	0
Hard Red						
Cabernet	39	14.0	37	54.0	22	0
Hank	46	13.9	47	55.2	26	0
Jefferson	49	14.2	5	57.4	26	0
Jerome	43	13.7	47	54.6	25	0
Kelse	43	15.4	50	55.6	28	0
Tara 2002	38	14.3	48	56.6	26	0
WestBred 926	42	14.5	51	55.0	26	0
IDO 578	43	13.6	39	54.8	26	0
20035	41	14.2	46	55.1	22	0
NPBHR 70	41	14.1	48	54.9	25	0
10348	44	13.3	33	52.9	23	0
Average	43	14.1	41	55.1	25	0
Overall Average	42	13.6	35	54.9	25	0
LSD (0.10)	5	--	--	1.4	2	--
C.V. (%)	10	--	--	2.2	5	--

Table 12. Spring wheat variety performance results at Bonners Ferry, 2008.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Alturas	43	10.6	15	59.4	22	0
Cataldo	36	11.3	13	58.8	18	0
Eden	33	10.9	26	60.2	19	0
Louise	44	10.3	23	59.2	21	0
Nick	40	11.7	20	59.6	20	0
Penawawa	40	10.9	18	60.3	21	0
WA8008	43	11.0	22	60.2	20	0
WA8039	40	10.9	17	60.0	20	0
ML 37-A	41	10.4	25	59.2	22	0
Average	40	10.9	20	59.6	20	0
Hard White						
IDO 377s	36	11.6	61	61.5	20	0
Lolo	37	11.5	63	61.6	21	0
Otis	38	11.2	59	61.6	20	0
Lochsa	34	13.0	63	61.2	20	0
OR 4201261	38	11.1	59	59.4	21	0
Average	37	11.7	61	61.1	20	0
Hard Red						
Cabernet	33	12.6	49	60.0	18	0
Hank	33	12.3	57	61.4	19	0
Jefferson	34	12.9	63	61.8	20	0
Jerome	31	12.3	55	61.8	20	0
Kelse	40	13.1	59	60.9	24	0
Tara 2002	37	12.9	55	61.2	21	0
WestBred 926	33	12.5	61	60.9	19	0
IDO 578	34	13.2	52	60.8	19	0
20035	34	12.6	59	61.0	18	0
NPBHR 70	39	12.8	56	60.7	19	0
10348	37	12.0	39	59.6	19	0
Average	35	12.7	55	60.9	20	0
Overall Average	37	11.8	44	60.5	20	0
LSD (0.10)	6	--	--	0.4	2	--
C.V. (%)	13	--	--	0.6	9	--

Table 13. Combined spring wheat performance data for Craigmont, Genesee, and Bonners Ferry, 2008.

Variety or Selection	Seed Yield				Average of 3 sites			
	Craigmont	Genesee	B. Ferry	Average	Seed Protein	Hardness Score	Test Weight	Plant Height
	----------bu/acre----------				%	0-100	lb/bu	inches
Soft White								
Alturas	15	43	43	34	12.6	10	55.2	22
Cataldo	15	36	36	29	13.1	9	53.2	22
Eden	19	47	33	33	13.0	18	56.7	22
Louise	16	41	44	33	13.3	13	55.1	24
Nick	21	42	40	34	13.6	11	54.5	22
Penawawa	16	41	40	32	13.6	14	55.6	21
WA8008	16	48	43	36	13.9	21	54.3	22
WA8039	22	42	40	35	13.5	20	56.4	22
ML 37-A	12	38	41	30	14.6	33	54.4	20
Average	17	42	40	33	13.5	17	55.0	22
Hard White								
IDO 377s	16	44	36	32	14.5	52	55.8	23
Lolo	18	42	37	32	14.2	54	57.3	23
Otis	17	44	38	33	14.2	65	57.7	24
Lochsa	17	39	34	30	14.7	57	54.9	22
OR 4201261	14	44	38	32	14.1	70	55.3	21
Average	16	43	37	32	14.3	60	56.2	22
Hard Red								
Cabernet	16	39	33	30	14.8	50	54.5	19
Hank	20	46	33	33	14.6	50	55.7	22
Jefferson	20	49	34	34	15.0	63	57.2	22
Jerome	17	43	31	30	14.1	50	55.5	23
Kelse	16	43	40	33	15.8	61	55.7	24
Tara 2002	19	38	37	31	14.7	49	56.7	23
WestBred 926	19	42	33	31	14.9	51	55.6	23
IDO 578	19	43	34	32	14.9	51	55.3	22
20035	17	41	34	31	14.6	45	55.3	20
NPBHR 70	20	41	39	33	14.8	48	55.5	22
10348	20	44	37	33	14.0	37	54.4	21
Average	18	43	35	32	14.7	50	55.6	22
Overall Average	17	42	37	32	14.2	40	55.5	22
LSD (0.10)	2	5	6	2	--	--	0.5	1
C.V. (%)	9	10	13	--	--	--	--	--

Table 14. Grain yield averages for spring wheat varieties tested for three years in northern Idaho.

Variety or Selection	2006	2007	2008	Average
	----------bu/acre----------			
Soft White				
Alturas	64	42	34	47
Cataldo	68	40	29	46
Eden	61	48	33	47
Louise	64	47	33	48
Nick	71	43	34	49
Penawawa	51	42	32	42
Average	63	44	33	46
Hard White				
IDO 377s	62	41	32	45
Lolo	61	44	32	46
Otis	64	46	33	48
Lochsa	63	39	30	44
Average	63	43	32	46
Hard Red				
Hank	61	43	33	46
Jefferson	61	46	34	47
Jerome	58	41	30	43
Tara 2002	62	38	31	44
WestBred 926	62	43	31	45
Average	61	42	32	45
Overall Average	62	43	32	46
LSD (0.10)	3	3	2	--

Spring Barley

Table 15. Spring barley variety performance results at Craigmont, 2008.

Variety or Selection	Seed Yield	Test Weight	Plant Height	Plumps >6/64	Thins <5.5/64
	bu/acre	lb/bu	inches	%	%
2 Row Barley					
Baronesse	39	47.1	27	53	17
Bear (hulless)	29	52.0	28	10	70
Camas	37	46.5	28	23	45
Champion	50	46.7	31	32	37
Conrad	39	47.3	26	30	36
Harrington	26	48.6	26	30	37
Lenetah	53	47.6	28	47	23
Merit	26	48.9	24	47	20
AC Metcalfe	34	47.8	27	45	22
Salute	33	45.6	27	45	19
Spaulding	35	48.1	28	24	46
Tetonia	28	48.6	26	42	22
01AH2812	34	51.1	27	28	39
Radiant	29	47.2	25	36	23
2 Row Average	35	48.1	27	35	33
6 Row Barley					
Steptoe	34	42.6	29	30	31
Tradition	31	43.6	28	30	40
6 Row Average	32	43.1	28	30	36
Overall Average	35	47.5	27	35	33
LSD (0.10)	7	2.4	1	12	11
CV (%)	18	4.2	4	29	27

Table 16. Spring barley variety performance results at Genesee, direct seeded, 2008.

Variety or Selection	Seed Yield	Test Weight	Plant Height	Plumps >6/64	Thins <5.5/64
	bu/acre	lb/bu	inches	%	%
2 Row Barley					
Baronesse	76	51.4	25	95	1
Bear (hulless)	67	55.5	27	41	11
Camas	64	51.3	26	93	1
Champion	85	52.0	27	96	1
Conrad	69	50.0	27	93	2
Harrington	60	50.5	26	88	3
Lenetah	72	50.9	26	97	1
Merit	66	49.4	25	92	2
AC Metcalfe	64	50.8	28	95	1
Salute	62	50.5	26	97	1
Spaulding	68	52.3	26	94	1
Tetonia	72	50.7	25	92	2
01AH2812	64	57.1	26	84	3
Radiant	70	50.5	26	89	3
2 Row Average	68	51.6	26	89	2
6 Row Barley					
Steptoe	51	47.7	26	96	1
Tradition	59	49.5	30	94	1
6 Row Average	55	48.6	28	95	1
Overall Average	67	51.2	26	90	2
LSD (0.10)	11	0.5	2	2	1
CV (%)	14	0.8	5	2	43

Table 17. Spring barley variety performance results at Moscow, direct seed, 2008.

Variety or Selection	Seed Yield	Test Weight	Plant Height	Plumps >6/64	Thins <5.5/64
	bu/acre	lb/bu	inches	%	%
2 Row Barley					
Baronesse	93	47.4	27	95	1
Bear (hulless)	88	48.9	29	47	15
Camas	85	47.5	27	96	1
Champion	94	47.9	28	95	1
Conrad	85	45.7	26	94	1
Harrington	72	46.0	27	87	3
Lenetah	91	47.4	28	97	0
AC Metcalfe	87	44.7	29	92	2
Salute	83	46.1	27	97	1
Spaulding	90	49.9	28	96	1
Tetonia	94	47.7	26	92	2
Radiant	91	46.6	27	88	3
M69	87	44.8	24	97	1
C83	86	45.3	23	99	0
2 Row Average	88	46.8	27	91	2
6 Row Barley					
Steptoe	82	43.8	30	97	1
Tradition	83	44.9	33	96	1
6 Row Average	83	44.4	32	97	1
Overall Average	87	46.5	27	91	2
LSD (0.10)	5	0.6	2	2	1
CV (%)	5	1.1	5	2	40

Table 18. Spring barley variety performance results at Bonners Ferry, 2008.

Variety or Selection	Seed Yield	Test Weight	Plant Height	Plumps >6/64	Thins <5.5/64
	bu/acre	lb/bu	inches	%	%
2 Row Barley					
Baronesse	58	48.5	18	100	0
Bear (hulless)	55	52.7	20	53	6
Camas	47	48.9	18	85	1
Champion	69	50.1	21	99	0
Conrad	51	48.2	17	99	0
Harrington	53	48.5	19	96	1
Lenetah	70	49.5	19	97	0
Merit	65	47.7	19	97	1
AC Metcalfe	58	48.3	19	99	0
Salute	55	48.1	19	99	0
Spaulding	53	50.7	19	96	1
Tetonia	71	49.4	18	98	0
01AH2812	36	55.9	18	86	2
Radiant	60	48.5	17	97	1
2 Row Average	57	49.6	19	93	1
6 Row Barley					
Steptoe	54	46.2	21	98	0
Tradition	47	47.5	20	98	0
6 Row Average	51	46.9	20	98	0
Overall Average	56	49.3	19	94	1
LSD (0.10)	7	0.6	2	8	1
CV (%)	11	1.1	7	7	61

Table 19. Combined spring barley performance data for Craigmont, Genesee, Moscow and Bonners Ferry, 2008.

Variety or Selection	Seed Yield					Average of 4 sites			
	Craigmont	Genesee	Moscow	B. Ferry	Average	Test Weight	Plant Height	Plumps >6/64	Thins <5.5/64
	----------bu/acre----------					lb/bu	inches	%	%
2 Row Barley									
Baronesse	39	76	93	58	66	48.6	24	86	5
Bear (hulless)	29	67	88	55	60	52.2	26	38	26
Camas	37	64	85	47	58	48.5	25	74	12
Champion	50	85	94	69	75	49.2	27	80	10
Conrad	39	69	85	51	61	47.8	24	79	10
Harrington	26	60	72	53	53	48.4	24	75	11
Lenetah	53	72	91	70	72	48.8	25	84	6
Merit	26	66		65	52	48.7 *	23 *	79 *	8 *
AC Metcalfe	34	64	87	58	61	47.9	26	83	6
Salute	33	62	83	55	58	47.6	25	85	5
Spaulding	35	68	90	53	61	50.2	25	78	12
Tetonia	28	72	94	71	66	49.1	24	81	6
01AH2812	34	64		36	45	52.2 *	24 *	66 *	15 *
Radiant	29	70	91	60	62	48.2	24	77	7
2 Row Average	35	68	88	57	62	49.0	25	77	10
6 Row Barley									
Steptoe	34	51	82	54	55	45.1	26	80	8
Tradition	31	59	83	47	55	46.4	28	79	11
6 Row Average	32	55	83	51	55	45.7	27	80	9
Overall Average	35	67	87	56	61	48.7	25	77	10
LSD (0.10)	7	11	5	7	4	0.5	1	3	2
CV (%)	18	14	5	11	--	--	--	--	--

* Merit and 01AH2812 varieties planted in three of four locations

Table 20. Grain yield averages for spring barley varieties tested for three years in northern Idaho.

Variety or Selection	2006	2007	2008	Average
	----------bu/acre----------			
2 Row Barley				
Baronesse	100	74	66	80
Bear (hulless)	83	64	60	69
Camas	102	75	58	78
Conrad	97	69	61	76
Harrington	92	71	53	72
Merit	97	70	52 *	73
AC Metcalfe	96	70	60	75
Spaulding	110	76	62	83
Radiant	99	83	61	81
Average	97	72	59	76
6 Row Barley				
Steptoe	99	74	55	76
Tradition	97	69	55	74
Average	98	72	55	75
Overall Average	97	72	59	76
LSD (0.10)	4	3	4	--

* Merit grown in three locations in 2008, four in previous years

Winter Barley

Table 21. Winter barley variety performance results at Genesee, 2008.

Variety or Selection	Seed Yield	Test Weight	Plant Height	Lodging	Plumps >6/64	Thins <5.5/64
	bu/acre	lb/bu	inches	%	%	%
Boyer	72	46.9	28	0	43	22
Charles	66	47.2	23	0	79	8
Eight-Twelve	78	49.0	27	0	63	10
Kold	63	47.3	26	0	23	32
Sprinter	71	47.5	30	0	22	34
Strider	76	47.9	30	0	67	8
Sunstar Pride	71	48.3	25	0	42	24
91Ab36	81	46.9	27	0	51	19
93Ab631	66	46.6	25	0	49	18
Average	72	47.5	27	0	49	20
LSD (0.10)	12	1.5	1	0	12	10
CV (%)	12	2.2	4	0	17	34

Table 22. Green dry pea variety performance results at Nez Perce, 2008.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Aragorn	113	15.2	10	9	1.0
Arid	85	12.4	10	10	1.0
Banner	98	13.6	11	11	1.0
Banner NST+	84	11.8	10	10	1.0
Columbian	134	14.4	12	12	1.0
Cruiser	106	14.0	10	10	1.0
Joel	77	13.5	11	11	1.0
Karita	42	13.2	11	11	1.0
Medora	68	12.1	10	10	1.0
Monarch	95	13.3	9	9	1.0
Pacifica	64	15.6	11	11	1.0
Pacifica NST+	56	15.1	11	11	1.0
Stirling	95	16.4	8	8	1.0
Stirling NST+	123	16.4	8	8	1.0
PS03101445	97	14.9	10	10	1.0
Pro 041-7109	85	15.0	10	10	1.0
Average	89	14.2	10	10	1.0
LSD (0.10)	37	5.0	2	1	0.5
CV (%)	35	30.9	13	12	4.2

* means canopy height/vine length; 1.0=upright
\+ no seed treatment

Table 23. Yellow dry pea variety performance results at Nez Perce, 2008.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Carousel	65	13.8	10	9	1.0
Delta	110	17.5	11	10	1.0
Rex	59	11.7	10	10	1.0
Rex NST+	36	10.3	9	9	1.0
Shawnee	126	13.9	13	12	0.9
Universal	136	14.4	11	11	1.0
Pro 053-7072	103	10.9	10	10	1.0
Pro 043-7169	67	11.9	9	9	1.0
Pro 033-5049	78	12.7	11	10	1.0
Average	87	13.0	10	10	1.0
LSD (0.10)	37	5.0	2	1	0.5
CV (%)	35	30.9	13	12	4.2

* means canopy height/vine length; 1.0=upright
+ no seed treatment

Table 24. Green dry pea variety performance results at Moscow, 2008.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Aragorn	2889	22.6	26	26	1.0
Arid	2771	19.3	24	24	1.0
Banner	2681	20.8	28	27	1.0
Banner NST+	2651	19.9	28	28	1.0
Columbian	2065	19.4	33	15	0.5
Cruiser	2768	21.9	25	26	1.0
Joel	2553	24.1	34	13	0.4
Karita	2669	26.3	25	25	1.0
Medora	2754	23.6	29	29	1.0
Monarch	2943	20.7	22	20	0.9
Pacifica	3389	24.7	28	28	1.0
Pacifica NST+	3332	25.4	27	25	0.9
Stirling	2888	22.2	21	21	1.0
Stirling NST+	2622	22.3	20	19	1.0
PS03101445	3105	21.7	24	24	1.0
Pro 041-7109	2474	19.5	23	23	1.0
Average	2785	22.2	26	23	0.9
LSD (0.10)	430	0.9	3	2	0.6
CV (%)	13	3.4	10	7	5.9

* means canopy height/vine length; 1.0=upright
+ no seed treatment

Table 25. Yellow dry pea variety performance results at Moscow, 2008.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Carousel	2912	26.1	26	26	1.0
Delta	2800	23.4	23	23	1.0
Rex	3205	26.0	24	21	0.9
Rex NST+	3225	26.4	25	21	0.8
Shawnee	2235	23.7	35	9	0.2
Universal	3032	23.4	26	26	1.0
Pro 053-7072	3014	26.8	28	29	1.0
Pro 043-7169	3081	25.8	25	25	1.0
Pro 033-5049	3192	24.1	29	29	1.0
Average	2966	25.1	27	23	0.9
LSD (0.10)	430	0.9	3	2	0.6
CV (%)	13	3.4	10	7	5.9

* means canopy height/vine length; 1.0=upright
+ no seed treatment

Table 26. Combined green dry pea variety performance data for Nez Perce and Moscow, 2008.

Variety or Selection	Seed Yield			Seed Weight			Average of 2 sites	
	Nez Perce	Moscow	Average	Nez Perce	Moscow	Average	Vine Length	Canopy Height
	----------lb/acre----------			----------g/100----------			inches	inches
Aragorn	113	2889	1501	15.2	22.6	18.9	18	17
Arid	85	2771	1428	12.4	19.3	15.9	17	17
Banner	98	2681	1390	13.6	20.8	17.2	19	19
Banner NST+	84	2651	1367	11.8	19.9	15.8	19	19
Columbian	134	2065	1100	14.4	19.4	16.9	23	14
Cruiser	106	2768	1437	14.0	21.9	18.0	18	18
Joel	77	2553	1315	13.5	24.1	18.8	22	12
Karita	42	2669	1356	13.2	26.3	19.8	18	18
Medora	68	2754	1411	12.1	23.6	17.9	20	20
Monarch	95	2943	1519	13.3	20.7	17.0	15	15
Pacifica	64	3389	1726	15.6	24.7	20.2	19	19
Pacifica NST	56	3332	1694	15.1	25.4	20.3	19	18
Stirling	95	2888	1492	16.4	22.2	19.3	14	14
Stirling NST+	123	2622	1373	16.4	22.3	19.4	14	14
PS03101445	97	3105	1601	14.9	21.7	18.3	17	17
Pro 041-7109	85	2474	1280	15.0	19.5	17.3	16	16
Average	89	2785	1437	14.2	22.2	18.2	18	17
LSD (0.10)	37	430	165	5.0	0.9	2.1	2	1
CV (%)	35	13	--	30.9	3.4	--	--	--

+ no seed treatment

Table 27. Combined yellow dry pea variety performance data for Nez Perce and Moscow, 2008.

Variety or Selection	Seed Yield			Seed Weight			Average of 2 sites	
	Nez Perce	Moscow	Average	Nez Perce	Moscow	Average	Vine Length	Canopy Height
	----------lb/acre----------			----------g/100----------			inches	inches
Carousel	65	2912	1489	13.8	26.1	19.9	18	18
Delta	110	2800	1455	17.5	23.4	20.5	17	17
Rex	59	3205	1632	11.7	26.0	18.8	17	15
Rex NST[+]	36	3225	1631	10.3	26.4	18.3	17	15
Shawnee	126	2235	1180	13.9	23.7	18.8	24	10
Universal	136	3032	1584	14.4	23.4	18.9	18	18
Pro 053-7072	103	3014	1558	10.9	26.8	18.8	19	19
Pro 043-7169	67	3081	1574	11.9	25.8	18.8	17	17
Pro 033-5049	78	3192	1635	12.7	24.1	18.4	20	20
Average	87	2966	1526	13.0	25.1	19.0	18	17
LSD (0.10)	37	430	165	5.0	0.9	2.1	2	1
CV (%)	35	13	--	30.9	3.4	--	--	--

+ no seed treatment

Table 28. Seed yield averages for green and yellow dry pea varieties tested for three years in northern Idaho.

Variety or Selection	2006	2007	2008	Average
		----------lb/acre----------		
Green pea				
Aragorn	2130	1710	1501	1780
Banner	2100	1900	1390	1797
Columbian	1710	1710	1100	1507
Cruiser	2020	1580	1437	1679
Joel	1930	1740	1315	1662
Karita	2210	1610	1356	1725
Medora	1520	1540	1411	1490
Monarch	1970	1930	1519	1806
Pacifica	2230	1650	1726	1869
Stirling	2180	1650	1492	1774
Average	2000	1702	1425	1709
Yellow pea				
Carousel	2120	1600	1489	1736
Delta	2240	1620	1455	1772
Rex	2280	1830	1632	1914
Shawnee	2130	1660	1180	1657
Universal	2410	1930	1584	1975
Average	2236	1728	1468	1811
Overall Average	2079	1711	1439	1743
LSD (0.10)	135	101	165	--

Table 29. Lentil variety performance results at Nez Perce and Moscow, 2008.

Variety or Selection	Seed Yield			Seed Weight			Plant Height		
	Nezperce	Moscow	Average	Nezperce	Moscow	Average	Nezperce	Moscow	Average
	----------lb/acre----------			----------g/100----------			----------inches----------		
Brewer	103	1859	981	6.1	6.2	6.2	9	14	12
Eston	105	2122	1114	3.8	3.7	3.7	7	14	11
LC01202307E	130	2226	1178	4.2	4.8	4.5	7	13	10
LC03601590E	137	2078	1107	3.9	4.2	4.0	7	16	12
Pardina	124	2064	1094	4.1	4.3	4.2	7	12	9
LC02601144P	156	2211	1183	4.0	4.3	4.1	8	14	11
LC03600204P	125	2210	1167	4.3	4.4	4.4	8	12	10
LC04600350P	119	1739	929	3.9	4.8	4.4	7	12	10
Crimson	137	1612	875	4.8	3.8	4.3	8	11	10
LC01601724T	126	1397	762	4.6	4.6	4.6	8	12	10
LCO1602062T	118	2433	1276	4.7	5.1	4.9	8	13	10
Merrit	159	2103	1131	6.4	7.1	6.8	9	14	12
Riveland	121	2573	1347	7.1	8.2	7.7	10	15	12
Richlea	139	2475	1307	5.6	5.7	5.6	8	12	10
LC01602300R	134	2361	1248	5.2	5.6	5.4	8	14	11
LC03600854L	143	2425	1284	7.6	8.1	7.8	9	13	11
Average	130	2118	1124	5.0	5.3	5.2	8	13	11
LSD (0.10)	55	214	95	0.8	0.1	0.3	1	1	1
CV (%)	35	8	--	12.8	2.2	--	8	5	--

Table 30. Chickpea variety performance results at Moscow, 2008.

Variety or Selection	Seed Yield	Seed Weight	Plant Height
	lb/acre	g/100	inches
Dwelley	1946	56.8	17
Dylan	2622	62.8	16
Myles	2712	21.6	16
Sierra	2878	58.6	19
Spanish White	2201	66.8	16
Troy	1932	65.4	15
CA0090B347C	2909	51.3	17
CA0469C020C	2987	46.3	16
025C	2986	46.5	16
007C	2796	57.7	17
Average	2597	53.4	16
LSD (0.10)	365	2.2	1
CV (%)	12	3.4	5

Table 31. Seed yield averages for lentil and chickpea varieties tested for three years in northern Idaho.

Variety or Selection	2006	2007	2008	Average
	----------lb/acre----------			
Lentil				
Brewer	1230	1140	981	1117
Crimson	1210	1225	875	1103
Eston	1170	1280	1114	1188
Merrit	1300	1235	1131	1222
Pardina	1230	1330	1094	1218
Richlea	1310	1325	1307	1314
LC1602307E	1380	1295	1178	1284
LC1602062T	1280	1445	1276	1334
LC01602300R	1280	1465	1248	1331
LC02601144P	1090	1310	1183	1194
Average	1248	1305	1139	1231
LSD (0.10)	119	70	95	--
Chickpea				
Dwelley	1410	1000	1946	1452
Dylan	1620	1650	2622	1964
Myles	1700	1690	2712	2034
Sierra	1530	1460	2878	1956
Spanish White	970	1530	2201	1567
CA0090B347C	1830	1725	2909	2155
Average	1510	1509	2545	1855
LSD (0.10)	191	140	365	--

Table 32. No-till dry pea variety performance results at Genesee, 2008.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Aragorn	2344	21.2	31	29	0.9
Ariel	2281	18.2	31	31	1.0
Banner	2499	21.1	35	32	0.9
BannerNST+	2449	21.1	37	30	0.8
Columbian	1942	17.4	47	15	0.3
Crusier	2077	19.5	33	32	1.0
Joel	2122	21.8	42	17	0.4
Karita	2305	24.8	30	29	1.0
Monarch	2487	19.5	28	26	0.9
Pacifica	2330	23.8	35	32	0.9
Pacifica NST+	2492	23.5	35	31	0.9
Stirling	2409	22.0	28	25	0.9
Stirling NST+	2365	21.6	26	24	0.9
Pro 041-7109	2311	18.5	31	30	1.0
Carousel	2132	25.4	34	33	1.0
Delta	1969	22.7	28	27	1.0
Rex	2498	24.0	33	21	0.6
RexNST+	2403	24.6	35	23	0.7
Shawnee	2209	21.8	48	14	0.3
Universal	2541	20.9	34	33	1.0
Average	2308	21.7	34	27	0.8
LSD (0.10)	255	1.3	4	3	0.1
CV (%)	9	4.9	10	10	11.1

* means canopy height/vine length; 1.0=upright
+ no seed treatment

Table 33. No-till dry pea variety performance results at Moscow, 2008.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Aragorn	441	19.0	25	25	1.0
Ariel	711	18.4	24	24	1.0
Banner	1344	18.4	27	25	1.0
BannerNST+	1149	18.8	24	24	1.0
Columbian	868	17.6	33	14	0.4
Crusier	576	18.8	24	24	1.0
Joel	1387	18.1	34	17	0.5
Karita	360	23.1	23	23	1.0
Monarch	550	16.9	18	18	1.0
Pacifica	1499	21.1	25	25	1.0
Pacifica NST+	1332	21.9	27	24	0.9
Stirling	1136	17.8	17	17	1.0
Stirling NST+	819	16.9	19	16	0.9
Pro 041-7109	488	17.0	20	20	1.0
Carousel	558	22.5	26	26	1.0
Delta	591	20.1	21	21	1.0
Rex	793	21.1	24	20	0.9
RexNST+	504	21.9	22	20	0.9
Shawnee	635	20.0	33	15	0.4
Universal	669	20.2	25	25	1.0
Average	820	19.5	24	21	0.9
LSD (0.10)	346	1.7	4	3	0.1
CV (%)	36	7.4	15	12	10

* means canopy height/vine length; 1.0=upright
+ no seed treatment

Table 34. Combined no-till dry pea variety performance data for Genesee and Moscow, 2008.

Variety or Selection	Seed Yield			Seed Weight			Average of 2 Sites		
	Genesee	Moscow	Average	Genesee	Moscow	Average	Vine Length	Canopy Height	Erect Index*
	----------lb/acre----------			----------g/100---------			inches	inches	0.0-1.0
Aragorn	2344	441	1393	21.2	19.0	20.1	28	27	1.0
Ariel	2281	711	1496	18.2	18.4	18.3	27	27	1.0
Banner	2499	1344	1921	21.1	18.4	19.7	31	28	0.9
BannerNST+	2449	1149	1799	21.1	18.8	20.0	31	27	0.9
Columbian	1942	868	1405	17.4	17.6	17.5	40	14	0.4
Crusier	2077	576	1326	19.5	18.8	19.1	28	28	1.0
Joel	2122	1387	1755	21.8	18.1	19.9	38	17	0.5
Karita	2305	360	1332	24.8	23.1	23.9	27	26	1.0
Monarch	2487	550	1519	19.5	16.9	18.2	23	22	1.0
Pacifica	2330	1499	1914	23.8	21.1	22.4	30	28	1.0
Pacifica NST+	2492	1332	1912	23.5	21.9	22.7	31	27	0.9
Stirling	2409	1136	1773	22.0	17.8	19.9	23	21	1.0
Stirling NST+	2365	819	1592	21.6	16.9	19.3	23	20	0.9
Pro 041-7109	2311	488	1400	18.5	17.0	17.8	26	25	1.0
Carousel	2132	558	1345	25.4	22.5	23.9	30	30	1.0
Delta	1969	591	1280	22.7	20.1	21.4	25	24	1.0
Rex	2498	793	1646	24.0	21.1	22.5	29	21	0.7
RexNST+	2403	504	1454	24.6	21.9	23.2	28	22	0.8
Shawnee	2209	635	1422	21.8	20.0	20.9	40	14	0.4
Universal	2541	669	1605	20.9	20.2	20.6	29	29	1.0
Average	2308	820	1564	21.7	19.5	20.6	29	24	0.9
LSD (0.10)	255	346	212	1.3	1.7	1.1	3	2	0.1
CV (%)	9	36	--	4.9	7.4	--	--	--	--

* means canopy height/vine length; 1.0=upright

\+ no seed treatment

Table 35. Seed yield and seed weight for no-till dry pea varieties tested for three years in northern Idaho.

Variety or Selection	Seed Yield				Seed Weight			
	2006	2007	2008	Average	2006	2007	2008	Average
	----------lb/acre----------				----------g/100----------			
Aragorn	1720	2080	1393	1731	21.5	21.9	20.1	21.2
Columbian	1660	1880	1405	1648	18.0	17.2	17.5	17.6
Cruiser	1470	2030	1326	1830	18.5	18.2	19.1	18.6
Joel	1690	1960	1755	1802	20.1	19.0	19.9	19.7
Karita	1470	2130	1332	1920	23.7	23.3	23.9	23.6
Monarch	1790	2200	1519	2070	19.8	18.7	18.2	18.9
Pacifica	1560	2140	1914	1871	18.0	18.1	22.4	19.5
Stirling	1530	2030	1773	1860	22.4	22.4	19.9	21.6
Carousel	1490	2210	1345	1930	22.4	22.4	23.9	22.9
Rex	1590	2160	1646	1880	21.7	22.4	22.5	22.2
Shawnee	1600	2010	1422	1780	19.6	19.8	20.9	20.1
Universal	1780	2420	1605	1935	20.4	20.6	20.6	20.5
Average	1560	2060	1536	1890	19.9	20.3	20.8	20.5
LSD (0.10)	117	156	212	--	0.8	0.6	1.1	--

Table 36. No-till lentil variety performance results at Genesee and Moscow, 2008.

Variety or Selection	Seed Yield			Seed Weight			Plant Height		
	Genesee	Moscow	Average	Genesee	Moscow	Average	Genesee	Moscow	Average
	----------lb/acre----------			----------g/100----------			----------inches----------		
Brewer	1160	704	932	6.9	6.3	6.6	15	13	14
Eston	1535	479	1007	3.7	3.4	3.5	14	13	13
Pardina	1383	593	988	4.2	3.9	4.0	13	13	13
Merrit	1633	756	1195	7.1	6.9	7.0	15	13	14
Riveland	1406	888	1147	8.6	7.7	8.1	15	14	15
Richlea	1525	737	1131	5.6	5.3	5.4	16	15	15
Average	1440	693	1067	6.0	5.6	5.8	15	14	14
LSD (0.10)	327	178	179	0.2	0.3	0.1	1	2	1
CV (%)	18	21	--	2.1	3.6	--	5	14	--

Table 37. Seed yield and seed weight for no-till lentil varieties tested for three years in northern Idaho.

Variety or Selection	Seed Yield				Seed Weight			
	2006	2007	2008	Average	2006	2007	2008	Average
	----------lb/acre----------				----------g/100----------			
Brewer	680	1280	932	964	5.0	5.5	6.6	5.7
Eston	790	1210	1007	1002	3.0	3.2	3.5	3.2
Merrit	790	1330	988	1036	5.5	6.0	4.0	5.2
Pardina	920	1285	1195	1133	3.3	3.7	7.0	4.7
Richlea	850	1410	1131	1130	4.7	5.0	5.4	5.0
Average	730	1315	1050	1100	4.3	4.7	5.3	4.8
LSD (0.10)	117	NS	179	--	0.2	0.2	0.1	--

NS - No Significant Differences