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2009 Small Grain and Grain Legume Report

Northern Idaho Small Grain and Grain Legume Research and Extension Program

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University of Idaho
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Cover: Soft white winter wheat near Lewiston, Idaho.

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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 2008-2009 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 cultivars 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

Five winter cereal trials were established in northern Idaho during the fall of 2008 and seven spring cereal trials were seeded in the spring of 2009. Due to equipment failure during planting, winter wheat and spring barley in Lewis County were ultimately unsuitable for analysis. 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 15 feet long on 5 foot centers with 7 rows, 7 inches apart, except for trials with direct seeding. Direct seeded trials 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 except Lewiston winter wheat were replicated four times in either a lattice or randomized complete block design. The

Lewiston site had three replications. After plants were well established, plots were cut back to approximately 11.5 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 2009, spring pea and lentil trials were seeded near Nez Perce, Genesee and Moscow. A chickpea trial was conducted at the University of Idaho's Parker farm in Moscow. 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 2008. Winter wheat trials established well at all locations but greater snowfall and cooler spring conditions than usual resulted in thinner stands. Conditions remained wetter and cooler through spring, a trend that held through the summer months. The average winter wheat yield over all locations in 2008-2009 was 8 bu/A lower than the average yield over the previous three crop years.

Spring trials were seeded between April 20 and May 26. Planting was delayed due to lingering snowdrifts and moist soil conditions. The spring wheat and spring barley yields were generally below average. Spring wheat yields in 2009 were 1 bu/A lower than the previous 3-year average, and spring barley was 9 bu/A lower than the previous 3-year average. Late planting of spring legumes due to moist field conditions affected plant development, and rain delayed harvest increased the chance of yield loss through pod "shattering." Specific management practices for individual trials are listed in Table 1.

Trial Locations, Management and Varieties Tested

Table 1. 2008-2009 Northern Idaho Extension variety trial site management information.

County	Nursery Location	Crops[1]	Planting Date	Harvest Date	Previous Crop	Fertilizer N-P-K-S(lb/A)	----Chemical---- Name(s)	Rates(s)
Lewis	Craigmont	SW	5/15/2009	9/9/2009	W. Wheat	-----BMP[2] rates---		
Lewis	Craigmont	SL	5/26/2009	9/10/2009	W. Wheat	None	None	
Nez Perce	Tammany	WW	10/11/2008	8/3/2009	S. Fallow	90-30-0-20	Powerflex Affinity Broad Sp. Brox M AMS	3.5 oz./A 0.8 oz./A 1 pt./A 1.8 lb./A
Nez Perce	Genesee	SW + SB	4/20/2009	9/1/2009	W. Wheat	139-28-0-29	Huskie Bumper	13 oz./A 2 oz./A
Nez Perce	Genesee	WW	10/10/2008	8/4/2009	W.Wheat			
Latah	Moscow	SL	5/18/2009	9/8/2009	S. Wheat	None	Pursuit Dimethoate Warrior	2.5 oz/A 1 pt/A
Latah	Moscow Parker Farm	WW-NT	10/13/09	8/18/2009	S. Pea	139-28-0-29	Roundup RT Huskey Starane	20 oz/A Pre 12 oz/A 10 oz/A
Latah	Moscow Parker Farm	SL+CP-NT	5/4/2009	9/8/2009	S. Barley	None	Roundup	20 oz/A Pre
Latah	Moscow Parker Farm	SB-NT	4/24/2009	9/3/2009	W. Wheat	139-28-0-29	Roundup	20 oz/A Pre

1- BMP - Recommended best management practice rates of chemical application

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-NT	5/17/2009	9/11/2009	S. Wheat	None	Roundup Sencor Lorox Dimethoate	16 oz/A Pre 1/4 lb./A 1 1/4 lb./A 1pt/A
Boundary	B. Ferry	WW	10/16/2008	8/28/2009	Sum. Fallow	69-0-0-0	Achieve 40 DG Curail	0.6 lbs/A 2.5 pt/A
Boundary	B. Ferry	SW + SB	4/22/2009	8/28/2009	Sum. Fallow	69-0-0-0	Achieve 40 DG Curail	0.6 lbs/A 2.5 pt/A

2- 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 2008-2009

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
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
ORCF-103	ORI2042037	2008	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
Xerpha	WA7973	2008	Washington State University, USDA/ARS
Skiles	ORH010085	2007	Oregon State University, USDA/ARS
UICF-Lambert	ID 99-435	2008	University of Idaho, 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
Esparia (HR)			
Mol (HW)			
Mieti (HW)			
MDM (HW)	WA 7936	2005	Washington State University, USDA/ARS
Paladin (HR)	W96-355		AgriPro
Norwest 553	ORN00B553	2007	OSU, USDA/ARS with Nickerson, UK
Soft white spring wheat			
Alturas	IDO 526	2002	University of Idaho, USDA/ARS
Babe	WA 8039	2009	Washington State University, USDA/ARS
Cataldo	IDO 642	2007	University of Idaho, USDA/ARS
Eden	WA 7902	2002	Washington State University, USDA/ARS
JD	WA 8047	2009	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
Whit	WA 8008	2008	Washington State University, USDA/ARS
Hard white spring wheat			
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 2008-2009.

Variety	Experimental No.	Released	Developer(s) of variety
Hard red spring wheat			
Bullseye	B02-0081	2008	AgriPro
Cabernet			Resource Seeds
Hank	BZ 992-322	1999	WestBred, LLC, Bozeman, MT
Jedd		2002	WestBred, LLC, Bozeman, MT
Jefferson	IDO 462	1998	University of Idaho, USDA/ARS
Jerome	IDO 566	2004	University of Idaho, USDA/ARS
Kelse	WA 7954	2009	Washington State University, 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 2008-2009.

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
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 preliminary results at Lewiston, 2008-2009.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Bitterroot	71	12.7	20	58.3	35	
Brundage 96	94	11.8	20	59.5	34	
IDO 587	62	14.5	20	54.4	32	
Lambert	90	11.8	27	58.6	40	
Madsen	69	14.8	26	56.2	31	
ORCF-101	87	13.8	25	56.7	35	
ORCF-102	49	15.4	25	55.3	33	
ORCF-103	65	13.8	21	56.3	32	
Simon	74	13.2	25	57.6	36	
Stephens	74	14.2	26	55.5	34	
Tubbs 06	54	15.6	29	53.1	34	
Xerpha	76	11.1	24	58.1	34	
Skiles	69	12.3	19	57.0	30	
IDO 655	55	14.9	21	52.3	35	
UICF-Lambert	69	12.0	25	56.9	39	
ID 93-64901A	72	11.5	17	57.5	34	
ID 02-859	72	13.3	20	57.2	31	
ID00-475-2DH	62	13.9	22	58.0	32	
Average	70	13.4	23	56.6	34	
Hard Wheat						
MDM	53	12.6	53	58.5	31	
Boundary	59	12.8	62	57.1	33	
Bauermeister	56	12.1	57	57.8	32	
IDO 621	78	12.5	57	57.9	34	
Norwest 553	77	11.2	59	60.4	32	
Mol	64	14.9	64	60.3	29	
Mieti	69	12.8	58	58.8	28	
Esparia	54	14.1	55	56.1	29	
Average	64	12.9	58	58.4	31	
Club						
Cara	77	12.1	26	52.7	32	
Chukar	90	11.3	25	54.8	34	
Coda	74	12.9	26	57.7	35	
Rhode	73	12.9	29	58.5	33	
Average	78	12.3	27	55.9	34	
Overall Average	70	13.1	33	57.0	33	No Lodging
LSD (0.10)	19	--	--	3.2	3	Recorded
CV (%)	20	--	--	4.2	7	

Table 4. Winter wheat variety performance preliminary results at Genesee, 2008-2009.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Bitterroot	55	11.7	26	60.5	31	
Brundage 96	63	11.1	27	60.3	27	
IDO 587	61	11.4	27	59.2	29	
Lambert	66	10.5	32	60.6	31	
Madsen	64	11.2	31	60.7	30	
ORCF-101	71	11.9	30	60.5	30	
ORCF-102	74	11.9	31	60.5	32	
ORCF-103	64	11.1	29	60.7	31	
Simon	63	11.1	29	60.1	30	
Stephens	63	10.6	28	60.3	30	
Tubbs 06	66	11.0	33	60.6	32	
Xerpha	73	10.9	36	61.2	30	
Skiles	70	11.9	36	61.5	30	
IDO 655	67	11.9	32	61.7	34	
UICF-Lambert	64	11.0	31	59.7	32	
ID 93-64901A	65	10.7	27	61.0	29	
ID 02-859	69	11.4	23	59.7	29	
ID00-475-2DH	72	11.4	27	62.2	30	
Average	66	11.3	30	60.6	30	
Hard Wheat						
MDM	52	10.7	59	61.6	31	
Boundary	56	11.2	64	60.7	28	
Bauermeister	59	11.5	64	61.4	31	
IDO 621	59	10.7	60	62.0	26	
Norwest 553	58	11.8	66	62.6	26	
Mol	44	12.5	61	62.6	25	
Mieti	48	11.7	60	61.4	22	
Esparia	59	11.5	52	61.6	27	
Average	54	11.5	61	61.7	27	
Club						
Cara	50	12.2	35	58.0	26	
Chukar	57	11.1	34	58.7	27	
Coda	61	11.4	34	61.2	29	
Rhode	44	11.8	30	61.0	26	
Average	53	11.6	33	59.7	27	
Overall Average	61	11.4	38	60.8	29	No Lodging
LSD (0.10)	6	--	--	1.0	2	Recorded
CV (%)	8	--	--	1.3	5	

Table 5. Winter wheat variety performance preliminary results at Moscow, 2008-2009.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Bitterroot	70	11.2	21	59.4	34	
Brundage 96	80	10.0	24	58.3	32	
IDO 587	85	10.3	23	59.1	34	
Lambert	74	10.3	28	59.2	34	
Madsen	82	10.2	28	59.4	34	
ORCF-101	87	10.4	23	58.8	34	
ORCF-102	83	9.9	25	59.5	34	
ORCF-103	81	9.9	19	58.7	34	
Simon	73	11.0	28	59.1	33	
Stephens	91	10.1	23	59.0	33	
Tubbs 06	70	10.2	29	59.1	34	
Xerpha	86	10.3	32	59.9	33	
Skiles	77	10.5	23	59.3	32	
IDO 655	76	10.4	30	60.9	37	
UICF-Lambert	68	10.3	30	59.4	35	
ID 93-64901A	85	10.2	18	59.4	33	
ID 02-859	94	9.6	16	57.9	33	
ID00-475-2DH	90	10.2	19	61.0	33	
Average	81	10.3	24	59.3	33	
Hard Wheat						
MDM	79	9.9	54	60.9	35	
Boundary	76	10.4	60	59.3	29	
Bauermeister	73	9.6	59	60.8	36	
IDO 621	85	10.2	56	60.7	31	
Norwest 553	69	11.5	64	61.7	28	
Mol	49	13.3	62	59.7	26	
Mieti	45	11.7	56	59.2	25	
Esparia	56	11.3	55	59.8	27	
Average	67	11.0	58	60.2	30	
Club						
Cara	70	10.3	24	57.3	29	
Chukar	77	10.6	25	57.7	32	
Coda	73	11.0	30	61.1	32	
Rhode	77	10.9	27	61.5	30	
Average	74	10.7	27	59.4	31	
Overall Average	76	10.5	34	59.6	32	No Lodging
LSD (0.10)	13	--	--	0.4	2	Recorded
CV (%)	15	--	--	0.5	5	

Table 6. Winter wheat variety performance preliminary results at Bonner's Ferry, 2008-2009.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Bitterroot	51	12.8	38	56.8	30	
Brundage 96	79	11.4	14	55.1	29	
IDO 587	82	11.9	22	55.9	31	
Lambert	68	11.6	22	56.1	35	
Madsen	79	12.4	22	56.0	31	
ORCF-101	72	12.6	20	55.6	29	
ORCF-102	66	13.0	20	56.2	30	
ORCF-103	69	12.5	24	56.2	31	
Simon	63	12.2	20	56.4	31	
Stephens	83	11.8	20	55.9	33	
Tubbs 06	72	12.2	21	55.1	33	
Xerpha	69	12.1	21	55.6	32	
Skiles	61	13.2	16	55.5	29	
IDO 655	70	11.7	19	57.5	34	
UICF-Lambert	62	12.3	23	56.1	36	
ID 93-64901A	55	11.5	11	55.3	29	
ID 02-859	59	11.5	9	54.8	28	
ID00-475-2DH	64	12.4	24	57.0	28	
Average	68	12.2	20	55.9	31	
Hard Wheat						
MDM	45	12.1	53	56.8	31	
Boundary	44	12.3	46	57.2	27	
Bauermeister	42	11.7	42	56.6	29	
IDO 621	51	12.2	44	57.7	27	
Norwest 553	72	12.3	52	57.9	27	
Mol	33	15.1	53	57.7	22	
Mieti	42	14.4	54	56.3	20	
Esparia	49	13.0	49	57.0	25	
Average	47	12.9	49	57.1	26	
Club						
Cara	50	13.3	23	54.2	24	
Chukar	58	12.4	19	54.6	28	
Coda	63	12.4	17	56.6	30	
Rhode	58	12.4	18	56.1	26	
Average	57	12.6	19	55.4	27	
Overall Average	61	12.4	27.9	56.2	29	No Lodging
LSD (0.10)	14	--	--	1.0	3	Recorded
CV (%)	19	--	--	1.5	7	

Table 7. Combined winter wheat performance data for Lewiston, Genesee, Moscow, and Bonners Ferry. 2008-2009.

Variety or Selection	Seed Yield				
	Lewiston	Genesee	Moscow	B. Ferry	Average
			bu/acre		
Soft White					
Bitterroot	71	55	70	51	62
Brundage 96	94	63	80	79	79
IDO 587	62	61	85	82	72
Lambert	90	66	74	68	74
Madsen	69	64	82	79	73
ORCF-101	87	71	87	72	79
ORCF-102	49	74	83	66	68
ORCF-103	65	64	81	69	70
Simon	74	63	73	63	68
Stephens	74	63	91	83	78
Tubbs 06	54	66	70	72	65
Xerpha	76	73	86	69	76
Skiles	69	70	77	61	69
IDO 655	55	67	76	70	67
UICF-Lambert	69	64	68	62	66
ID 93-64901A	72	65	85	55	69
ID 02-859	72	69	94	59	74
ID00-475-2DH	62	72	90	64	72
Average	70	66	81	68	71
Hard Wheat					
MDM	53	52	79	45	57
Boundary	59	56	76	44	59
Bauermeister	56	59	73	42	58
IDO 621	78	59	85	51	68
Norwest 553	77	58	69	72	69
Mol	64	44	49	33	47
Mieti	69	48	45	42	51
Esparia	54	59	56	49	55
Average	64	54	67	47	58
Club					
Cara	77	50	70	50	62
Chukar	90	57	77	58	70
Coda	74	61	73	63	68
Rhode	73	44	77	58	63
Average	78	53	74	57	66
Overall Average	70	61	76	61	67
LSD (0.10)	19	6	13	14	7
CV (%)	20	8	15	19	--

Table 8. Grain yield averages for winter wheat varieties tested for three years in northern Idaho.

Variety or Selection	2006-2007	2007-2008	2008-2009	Average
Number of sites	5	5	4	5
Soft White		----------bu/acre----------		
Bitterroot	68	78	62	69
Brundage 96	73	74	79	75
IDO 587	64	71	72	69
Lambert	68	74	74	72
Madsen	69	70	73	71
ORCF-101	68	74	79	74
ORCF-102	68	79	68	72
Simon	69	77	68	72
Stephens	67	72	78	72
Tubbs 06	69	78	65	71
IDO 655	62	72	67	67
UICF-Lambert	71	75	66	71
ID 93-64901A	75	80	69	75
ID 02-859	70	79	74	74
Average	69	75	68	71
Hard Wheat				
MDM	64	75	57	65
Boundary	70	74	59	68
Bauermeister	70	75	58	68
IDO 621	72	75	68	72
Average	69	75	62	69
Club				
Cara	63	74	62	66
Chukar	65	74	70	70
Coda	65	69	68	67
Rhode	72	72	63	69
Average	66	72	66	68
Overall Average	68	75	67	70
LSD (0.10)	4	4	7	--

Spring Wheat

Table 9. Spring wheat variety performance results at Craigmont, 2009.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Alturas	56	13.2	34	57.7	27	0
Cataldo	57	12.2	12	57.4	26	0
Eden	58	13.3	22	60.3	25	0
Louise	67	11.9	18	58.3	30	0
Nick	66	12.3	17	58.8	27	0
Penawawa	60	12.9	14	57.8	28	0
Whit	70	12.8	16	58.4	29	0
Babe[1]	65	14.4	14	58.5	29	0
WA8090	75	11.9	19	59.5	31	0
BZ604-002	67	12.9	20	59.3	28	0
JD[2]	62	11.5	24	59.7	30	0
Average	64	12.7	19	58.7	28	0
Hard White						
Lolo	64	12.3	60	60.2	31	0
Otis	62	14.2	62	58.9	32	0
Lochsa	51	13.7	62	56.7	27	0
OR 4201261	59	12.7	65	57.2	27	0
Average	59	13.2	62	58.2	29	0
Hard Red						
Cabernet	52	12.8	45	59.0	25	0
Hank	58	12.6	57	57.7	26	0
Jedd	57	14.7	89	58.8	24	0
Jefferson	59	13.7	64	58.4	27	0
Jerome	58	13.1	55	58.9	26	0
Kelse	60	14.6	58	58.8	29	0
Tara 2002	52	14.5	52	58.4	28	0
UI Winchester[3]	59	14.3	51	58.3	25	0
Bullseye	50	15.0	72	59.4	23	0
BZ901-717	59	14.4	69	58.0	28	0
Average	56	14.0	61	58.6	26	0
Overall Average	60			58.6	28	0
LSD (0.10)	8	--	--	1.1	<1	--
C.V. (%)	11	--	--	1.6	6	--

[1] previously listed as WA 8039

[2] previously listed as WA 8047

[3] previously listed as IDO 578

Table 10. Spring wheat variety performance results at Genesee, direct seed, 2009.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Alturas	54	11.0	16	58.3	29	0
Cataldo	57	11.2	13	57.6	31	0
Eden	51	10.8	19	60.4	29	0
Louise	59	10.9	17	58.9	34	0
Nick	55	12.7	19	60.1	30	0
Penawawa	55	11.7	15	59.3	30	0
Whit	65	11.0	17	59.5	31	0
Babe[1]	66	11.3	14	60.2	32	0
WA8090	61	10.8	19	59.5	33	
BZ604-002	60	11.0	17	61.0	31	0
JD[2]	59	11.6	20	60.8	33	0
Average	58	11.3	17	59.6	31	0
Hard White						
Lolo	57	12.8	57	60.8	33	0
Otis	55	12.1	52	60.4	36	0
Lochsa	55	13.1	61	58.6	31	
OR 4201261	57	11.7	60	59.5	29	0
Average	56	12.4	58	59.8	32	0
Hard Red						
Cabernet	45	13.0	45	58.9	26	0
Hank	59	15.1	54	58.2	31	0
Jedd	49	13.6	81	60.1	28	0
Jefferson	57	13.1	58	60.6	30	0
Jerome	50	13.3	53	60.1	30	0
Kelse	51	14.0	55	60.3	33	0
Tara 2002	51	14.3	50	60.2	33	0
UI Winchester[3]	54	14.3	48	60.0	31	0
Bullseye	57	13.5	66	61.6	29	0
BZ901-717	57	14.2	64	60.5	32	0
Average	53	13.8	57	60.1	30	0
Overall Average	56			59.8	31	0
LSD (0.10)	6	--	--	0.9	1	--
C.V. (%)	9	--	--	1.3	4	--

[1] previously listed as WA 8039

[2] previously listed as WA 8047

[3] previously listed as IDO 578

Table 11. Spring wheat variety performance results at Bonners Ferry, direct seed, 2009.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Alturas	25	12.7	4	na	22	0
Cataldo	19	14.5	17	na	20	0
Eden	20	13.3	23	na	19	0
Louise	21	13.2	23	na	22	0
Nick	12	14.5	18	na	20	0
Penawawa	15	14.8	18	na	19	0
Whit	34	14.1	19	na	24	0
Babe[1]	17	14.5	18	na	21	0
WA8090	20	12.8	17	na	22	0
BZ604-002	23	13.7	15	na	22	0
JD[2]	27	13.0	13	na	22	0
Average	21	13.7	17	na	21	0
Hard White						
Lolo	19	14.8	63	na	21	0
Otis	24	14.1	61	na	24	0
Lochsa	16	15.5	67	na	20	0
OR 4201261	17	13.9	62	na	19	0
Average	19	14.6	63	na	21	0
Hard Red						
Cabernet	10	15.5	55	na	17	0
Hank	21	14.9	62	na	21	0
Jedd	16	15.6	89	na	19	0
Jefferson	16	15.4	67	na	21	0
Jerome	18	14.5	58	na	21	0
Kelse	13	16.2	64	na	22	0
Tara 2002	12	16.2	64	na	21	0
UI Winchester[3]	9	15.5	61	na	17	0
Bullseye	17	15.1	71	na	18	0
BZ901-717	17	16.1	76	na	22	0
Average	15	15.5	67		20	0
Overall Average	18	14.6	44	na	21	0
LSD (0.10)	4	--	--	--	2	--
C.V. (%)	21	--	--	--	7	--

[1] previously listed as WA 8039

[2] previously listed as WA 8047

[3] previously listed as IDO 578

na - Test weights were not calculated for this trial due to insufficient yields

Table 12. Combined spring wheat performance data for Craigmont, Genesee, and Bonners Ferry, 2009.

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	56	54	25	46	12.3	18	58.0	26
Cataldo	57	57	19	45	12.6	14	57.5	25
Eden	58	51	20	44	12.5	21	60.4	25
Louise	67	59	21	50	12.0	19	58.6	28
Nick	66	55	12	39	13.2	18	59.4	26
Penawawa	60	55	15	43	13.1	16	58.5	26
Whit	70	65	34	56	12.6	17	58.9	28
Babe[1]	65	66	17	49	13.4	15	59.3	28
WA8090	75	61	20	51	11.8	18	59.5	29
BZ604-002	67	60	23	49	12.5	17	60.2	27
JD[2]	62	59	27	49	12.0	19	58.0	28
Average	64	58	21	47	12.6	18	58.9	27
Hard White								
Lolo	64	57	19	47	13.3	60	57.5	28
Otis	62	55	24	47	13.5	58	60.4	30
Lochsa	51	55	16	41	14.1	63	58.8	26
OR 4201261	59	57	17	44	12.8	62	59.4	25
Average	59	56	19	45	13.4	61	59.0	27
Hard Red								
Cabernet	52	45	10	36	13.8	48	59.0	24
Hank	58	59	21	46	14.2	58	58.0	28
Jedd	57	49	16	40	14.6	86	59.5	26
Jefferson	59	57	16	44	14.1	63	59.5	26
Jerome	58	50	18	41	13.6	55	59.5	26
Kelse	60	51	13	41	14.9	59	59.6	28
Tara 2002	52	51	12	38	15.0	55	59.3	27
UI Winchester[3]	59	54	9	40	14.7	53	59.2	24
Bullseye	50	57	17	41	14.5	70	60.5	24
BZ901-717	59	57	17	43	14.9	70	59.3	27
Average	56	53	15	41	14.4	62	59.3	26
Overall Average	60	56	18	44	13.4	42	59.1	27
LSD (0.10)	8	6	4	4	--	--	0.7	1
C.V. (%)	11	9	21	--	--	--	--	--

* Test wights from Genesee and Craigmont only.

[1] previously listed as WA 8039

[2] previously listed as WA 8047

[3] previously listed as IDO 578

Table 13. Grain yield averages for spring wheat varieties tested for three years in northern Idaho.

Variety or Selection	2007	2008	2009	Average
	----------bu/acre----------			
Soft White				
Alturas	42	34	45	40
Cataldo	40	29	44	38
Eden	48	33	43	41
Louise	47	33	49	43
Nick	43	34	44	40
Penawawa	42	32	43	39
Whit [1]	50	36	56	47
Babe [2]	42	35	49	42
Average	44	33	47	41
Hard White				
Lolo	44	32	47	41
Otis	46	33	47	42
Lochsa	39	30	41	37
OR 4201261	40	32	44	39
Average	42	32	45	41
Hard Red				
Cabernet	42	30	36	36
Hank	43	33	46	41
Jefferson	46	34	44	41
Jerome	41	30	42	38
Kelse	40	33	41	38
Tara 2002	38	31	38	36
UI Winchester[3]	39	32	40	37
Average	41	32	41	38
Overall Average	43	32	42	40
LSD (0.10)	3	2	2	--

[1] previously listed as WA8008

[2] previously listed as WA8039

[3] previously listed as IDO 578

Spring Barley

Table 14. Spring barley variety performance results at Bonners Ferry, 2009.

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	40	48.0	27	97	1
Bear (hulless)	39	52.0	28	58	8
Camas	44	48.1	27	95	1
Champion	46	47.8	26	95	1
Conrad	42	48.0	23	97	1
Harrington	34	48.8	24	88	2
Lenetah	62	49.5	26	98	1
Merit	50	47.7	29	96	1
AC Metcalfe	43	47.9	28	97	1
Salute	48	48.2	25	99	0
Spaulding	49	49.4	26	96	1
Tetonia	56	49.4	25	97	1
01AH2812	52	47.6	25	97	0
Radiant	46	48.0	26	96	1
2 Row Average	47	48.6	26	93	1
6 Row Barley					
Steptoe	40	46.2	26	97	0
Tradition	35	47.8	26	94	1
6 Row Average	38	47.0	26	96	1
Overall Average	45	48.4	26	94	1
LSD (0.10)	12	1.0	3	<1	<1
CV (%)	22	1.7	9	2	47

Table 15. Spring barley variety performance results at Moscow, direct seed, 2009.

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	78	50.5	31	97	1
Bear (hulless)	69	53.1	32	71	3
Camas	75	50.5	31	97	0
Champion	83	51.4	31	97	0
Conrad	82	49.8	31	99	0
Harrington	79	50.2	34	95	1
Lenetah	79	50.7	31	97	0
AC Metcalfe	82	48.7	32	96	1
Salute	86	50.2	35	99	0
Spaulding	78	49.4	32	99	0
Tetonia	74	51.9	31	97	0
Radiant	78	51.3	30	97	0
M69	80	49.0	27	98	0
C83	84	50.2	29	96	0
2 Row Average	79	50.5	31	95	1
6 Row Barley					
Steptoe	78	46.0	31	98	0
Tradition	88	48.3	38	97	0
6 Row Average	83	47.2	34	98	0
Overall Average	80	50.1	32	96	1
LSD (0.10)	14	0.4	2	>1	>1
CV (%)	14	0.7	7	2	64

Table 16. Spring barley variety performance results at Genesee, direct seeded, 2009.

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	82	47.1	28	93	1
Bear (hulless)	66	55.4	29	55	9
Camas	75	51.0	28	91	1
Champion	86	51.3	29	92	2
Conrad	83	49.4	29	93	2
Harrington	76	50.2	28	83	3
Lenetah	77	49.9	28	91	1
Merit	68	44.9	28	90	2
AC Metcalfe	67	50.3	30	94	1
Salute	75	50.5	29	96	1
Spaulding	74	51.6	29	90	2
Tetonia	84	50.6	28	89	2
01AH2812	82	49.3	27	91	2
Radiant	88	50.9	29	91	2
2 Row Average	77	50.2	28	88	2
6 Row Barley					
Steptoe	70	47.6	28	95	1
Tradition	72	50.4	32	94	1
6 Row Average	71	49.0	30	94	1
Overall Average	77	50.0	29	89	2
LSD (0.10)	8	2.9	2	<1	<1
CV (%)	9	4.9	6	3	34

Table 17. Combined spring barley performance data for Craigmont, Genesee, Moscow and Bonners Ferry, 2009.

Variety or Selection	Seed Yield				Average of 3 sites			
	B.Ferry	Genesee	Moscow	Average	Test Weight	Plant Height	Plumps >6/64	Thins <5.5/64
	----------bu/acre----------				lb/bu	inches	%	%
2 Row Barley								
Baronesse	40	82	78	67	48.5	28	96	1
Bear (hulless)	39	66	69	58	53.5	30	61	7
Camas	44	75	75	65	49.9	29	94	1
Champion	46	86	83	72	50.2	29	95	1
Conrad	42	83	82	69	49.1	28	96	1
Harrington	34	76	79	63	49.7	29	89	2
Lenetah	62	77	79	73	50.0	28	95	1
Merit	50	68	82	67	47.1	30	94	1
AC Metcalfe	43	67	86	66	49.5	31	97	1
Salute	48	75	78	67	49.4	29	98	0
Spaulding	49	74	74	66	51.0	29	94	1
Tetonia	56	84	78	73	50.4	27	94	1
01AH2812	52	82	80	71	48.6	26	95	1
Radiant	46	88	84	73	49.7	28	94	1
2 Row Average	47	77	79	68	49.8	29	92	1
6 Row Barley								
Steptoe	40	70	78	63	46.6	28	97	1
Tradition	35	72	88	65	48.8	32	95	1
6 Row Average	38	71	83	64	47.7	30	96	1
Overall Average	45	77	80	67	49.5	29	93	1
LSD (0.10)	12	8	14	6	0.8	1	>1	>1
CV (%)	22	9	14	--	--	--	--	--

Table 18. Grain yield averages for spring barley varieties tested for three years in northern Idaho.

Variety or Selection	2007	2008	2009	Average
	----------bu/acre----------			
2 Row Barley				
Baronesse	74	66	67	69
Bear (hulless)	64	60	58	61
Camas	75	58	65	66
Conrad	69	61	69	66
Harrington	71	53	63	62
Merit	70	52	67	63
AC Metcalfe	70	60	66	65
Spaulding	76	62	66	68
Radiant	83	61	73	72
Average	72	59	66	66
6 Row Barley				
Steptoe	74	55	63	64
Tradition	69	55	65	63
Average	72	55	64	64
Overall Average	72	58	66	65
LSD (0.10)	3	4	6	--

Table 19. Green dry pea variety performance results at Nez Perce, 2009.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Aragorn	1066	18.0	19	18	0.9
Ariel	1114	16.3	19	19	1.0
Banner	1299	17.6	24	23	0.9
Banner NST+	840	17.2	21	19	0.9
Columbian	870	17.7	22	18	0.8
Cruiser	1143	17.2	23	22	0.9
Joel	1228	18.5	26	20	0.8
Karita	1164	20.4	20	20	1.0
Medora	1135	19.7	22	21	1.0
Monarch	1278	16.9	18	15	0.8
Pacifica	1285	20.6	22	20	0.9
Pacifica NST+	1139	20.1	24	23	0.9
Stirling	959	17.8	20	16	0.8
Stirling NST+	741	17.6	18	16	0.9
PS03101445	1200	17.7	21	18	0.9
Pro 081-6118	1027	18.6	21	20	1.0
Average	1093	18.3	21	19	
LSD (0.10)	292	1.1	2	2	0.1
CV (%)	23	4.8	9	10	7.8

+ NST = no seed treatment

* means canopy height/vine length; 1.0 = upright

Table 20. Yellow dry pea variety performance results at Nez Perce, 2009.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	
Carousel	1003	20.9	23	22	1.0
Delta	823	17.5	19	19	1.0
Rex	1025	20.0	20	19	0.9
PRL 415	1061	18.5	23	21	0.9
Shawnee	1181	18.6	26	16	0.7
Universal	1101	19.2	21	20	1.0
Pro 083-8709	1103	20.2	23	23	1.0
Pro 083-8718	1071	21.0	23	22	1.0
Pro 083-8739	1312	19.7	23	21	0.9
Average	1075	19.5	22	20	0.9
LSD (0.10)	292	1.1	2	2	0.1
CV (%)	23	4.8	9	10	7.8

* means canopy height/vine length; 1.0 = upright

Table 21. Green dry pea variety performance results at Moscow, 2009.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	
Aragorn	2092	20.1	30	30	1.0
Ariel	2422	17.3	28	28	1.0
Banner	2818	19.4	32	28	0.9
Banner NST+	2266	19.0	29	28	1.0
Columbian	1410	18.2	32	15	0.5
Cruiser	2385	19.3	30	28	1.0
Joel	2347	20.2	37	14	0.4
Karita	1953	23.5	27	27	1.0
Medora	2307	19.3	34	34	1.0
Monarch	2161	18.6	23	20	0.9
Pacifica	2265	21.6	28	26	0.9
Pacifica NST+	2465	21.4	28	25	0.9
Stirling	1833	20.1	21	20	1.0
Stirling NST+	2021	19.6	21	21	1.0
PS03101445	2387	18.8	25	25	1.0
Pro 081-6118	2266	19.0	29	29	1.0
Average	2212	19.7	28	25	0.9
LSD (0.10)	350	1.1	4	4	0.1
CV (%)	14	4.7	11	12	8.1

+ no seed treatment

* means canopy height/vine length; 1.0 = upright

Table 22. Yellow dry pea variety performance results at Moscow, 2009.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	
Carousel	2162	22	29	29	1.0
Delta	2142	21	25	25	1.0
Rex	2158	24	27	24	0.9
PRL 415	2426	20	30	28	0.9
Shawnee	1403	20	32	10	0.3
Universal	2633	22	29	30	1.0
Pro 083-8709	2196	22	27	27	1.0
Pro 083-8718	1869	23	29	29	1.0
Pro 083-8739	2468	22	27	27	1.0
Average	2162	21.8	28	25	0.9
LSD (0.10)	350	1.1	4	4	0.1
CV (%)	14	4.7	11	12	8.1

* means canopy height/vine length; 1.0 = upright

Table 23. Combined green dry pea variety performance data for Nez Perce and Moscow, 2009.

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	1066	2092	1579	18.0	20.1	19.1	25	24
Ariel	1114	2422	1768	16.3	17.3	16.8	24	24
Banner	1299	2818	2059	17.6	19.4	18.5	28	26
Banner NST+	840	2266	1553	17.2	19.0	18.1	25	24
Columbian	870	1410	1140	17.7	18.2	18.0	27	16
Cruiser	1143	2385	1764	17.2	19.3	18.3	27	25
Joel	1228	2347	1788	18.5	20.2	19.3	31	17
Karita	1164	1953	1558	20.4	23.5	21.9	23	23
Medora	1135	2307	1721	19.7	19.3	19.5	28	28
Monarch	1278	2161	1720	16.9	18.6	17.7	20	17
Pacifica	1285	2265	1775	20.6	21.6	21.1	25	23
Pacifica NST+	1139	2465	1802	20.1	21.4	20.7	26	24
Stirling	959	1833	1396	17.8	20.1	18.9	20	18
Stirling NST+	741	2021	1381	17.6	19.6	18.6	19	19
PS03101445	1200	2387	1794	17.7	18.8	18.2	23	21
Pro 081-6118	1027	2266	1646	18.6	19.0	18.8	25	24
Average	1093	2212	1653	18.3	19.7	19.0	25	22
LSD (0.10)	292	350	227	1.1	1.1	0.8	2	2
CV (%)	23	14	--	4.8	4.7	--	--	--

+ NST = no seed treatment

Table 24. Combined yellow dry pea variety performance data for Nez Perce and Moscow, 2009.

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	1003	2162	1583	20.9	22.4	21.7	26	25
Delta	823	2142	1483	17.5	20.8	19.2	22	22
Rex	1025	2158	1592	20.0	24.1	22.1	24	22
PRL 415	1061	2426	1743	18.5	20.3	19.4	26	24
Shawnee	1181	1403	1292	18.6	20.0	19.3	29	13
Universal	1101	2633	1867	19.2	22.4	20.8	25	25
Pro 083-8709	1103	2196	1649	20.2	22.2	21.2	25	25
Pro 083-8718	1071	1869	1470	21.0	22.6	21.8	26	26
Pro 083-8739	1312	2468	1890	19.7	21.6	20.7	25	24
Average	1075	2162	1619	19.5	21.8	20.7	25	23
LSD (0.10)	292	350	227	1.1	1.1	0.8	2	1
CV (%)	23	14	--	4.8	4.7	--	--	--

Table 25. Seed yield averages for green and yellow dry pea varieties tested for three years in northern Idaho.

Variety or Selection	2007	2008	2009	Average
	----------lb/acre----------			
Green pea				
Aragorn	1710	1501	1579	1597
Banner	1900	1390	2059	1783
Columbian	1710	1100	1140	1317
Cruiser	1580	1437	1764	1594
Joel	1740	1315	1788	1614
Karita	1610	1356	1558	1508
Medora	1540	1411	1721	1557
Monarch	1930	1519	1720	1723
Pacifica	1650	1726	1775	1717
Stirling	1650	1492	1396	1513
Stirling NST+	1670	1373	1380	1474
PS03101445	1900	1601	1794	1765
Average	1716	1435	1640	1597
Yellow pea				
Carousel	1600	1489	1583	1557
Delta	1620	1455	1483	1519
Rex	1830	1632	1592	1685
Shawnee	1660	1180	1292	1377
Universal	1930	1584	1867	1794
Average	1728	1468	1563	1586
Overall Average	1719	1445	1617	1590
LSD (0.10)	101	165	227	--

+ NST = no seed treatment

Table 26. Lentil variety performance results at Nez Perce (no-till) and Moscow (conventional-till), 2009.

Variety or Selection	Seed Yield			Seed Weight			Plant Height		
	Nezperce	Moscow	Average	Nezperce	Moscow	Average	Nezperce	Moscow	Average
	----------lb/acre----------			----------g/100----------			----------inches----------		
Brewer	312	1748	1030	4.8	5.8	5.3	12	17	15
Eston	457	2300	1379	3.1	3.2	3.1	13	18	16
LC01202307E	776	1572	1174	4.7	3.8	4.3	13	19	16
LC06601231T	521	2065	1293	4.5	4.5	4.5	12	18	15
Pardina	439	2343	1391	3.8	3.7	3.7	11	16	14
LC06601228T	482	2666	1574	4.2	4.6	4.4	11	18	14
LC06601934T	549	2186	1367	4.0	4.4	4.2	13	17	16
LC05600043T	461	2117	1289	4.3	4.3	4.3	13	18	15
Crimson	468	2733	1600	3.6	3.1	3.4	13	16	15
LC05600840T	419	2238	1328	3.8	4.2	4.0	13	17	14
LC01602062T	355	2401	1378	4.0	4.4	4.2	13	15	16
Merritt	449	2159	1304	5.6	6.0	5.8	14	17	17
Riveland	691	2268	1480	6.4	6.8	6.6	14	18	17
Richlea	690	1850	1270	5.3	4.6	5.0	13	21	16
LC01602300R	768	2575	1672	5.0	4.4	4.7	14	19	17
LC06601550T	596	2607	1601	3.7	3.8	3.7	12	18	16
Average	527	2239	1383	4.4	4.5	4.4	13	18	15
LSD (0.10)	206	580	278	0.3	0.3	0.2	1	1	1
CV (%)	28	19	--	4.5	4.7	--	7	7	--

Table 27. Chickpea variety performance results at Moscow, 2009.

Variety or Selection	Seed Yield	Seed Weight	Plant Height
	lb/acre	g/100	inches
Dwelley	503	45.8	16
Dylan	278	46.4	14
Myles	619	14.6	14
Sierra	784	41.3	16
Spanish White	243	43.7	14
Troy	278	46.2	13
CA0090B347C	732	34.5	16
CA0469C020C	621	34.7	16
025C	547	34.1	14
007C	342	44.6	14
Average	495	38.6	14
LSD (0.10)	218	2.2	1
CV (%)	37	4.7	4

Table 28. Seed yield averages for lentil and chickpea varieties tested for three years in northern Idaho.

Variety or Selection	2007	2008	2009	Average
	----------lb/acre----------			
Lentil				
Brewer	1140	981	1030	1050
Eston	1280	1114	1376	1257
Pardina	1330	1094	1391	1272
Crimson	1225	875	1600	1233
Merrit	1235	1131	1304	1223
Riveland	1760	1347	1480	1529
Richlea	1325	1307	1270	1301
LC01202307E	1295	1178	1174	1216
LC01602062T	1445	1276	1378	1366
LC01602300R	1465	1248	1672	1462
Average	1350	1155	1368	1291
LSD (0.10)	70	95	278	--
Chickpea				
Dwelley	1000	1946	503	1150
Dylan	1650	2622	278	1517
Myles	1690	2712	619	1674
Sierra	1460	2878	784	1707
Spanish White	1530	2201	243	1325
Troy	1315	1932	278	1175
CA0090B347C	1725	2909	732	1789
CA0469C020C	1810	2987	621	1806
Average	1523	2523	507	1518
LSD (0.10)	140	365	218	--

Table 29. No-till dry pea variety performance results at Genesee, 2009.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Aragorn	1857	19.7	23	23	1.0
Columbian	1472	20.2	28	16	0.6
Cruiser	1601	18.6	24	23	1.0
Joel	1694	20.8	37	17	0.5
Karita	1833	23.9	25	25	1.0
Monarch	1527	19.7	22	19	0.9
Pacifica	2200	20.5	32	22	0.7
Stirling	1765	19.3	27	19	0.8
Carousel	2060	21.8	9	26	1.0
Rex	1374	23.8	23	19	0.8
Shawnee	1492	22.1	33	12	0.3
Universal	2149	21.8	25	24	1.0
Average	1752	21.0	25	20	0.8
LSD (0.10)	294	1.2	6	3	0.2
CV (%)	14	4.7	20	12	16.2

Table 30. No-till dry pea variety performance results at Moscow, 2009.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Aragorn	820	14.1	24	23	1.0
Columbian	249	15.3	31	19	0.6
Cruiser	714	12.6	24	24	1.0
Joel	703	15.7	35	20	0.6
Karita	1182	20.1	26	25	1.0
Monarch	476	12.9	19	18	1.0
Pacifica	731	15.0	27	24	0.9
Stirling	733	14.2	19	18	1.0
Carousel	1017	16.2	28	27	1.0
Rex	697	17.5	24	22	0.9
Shawnee	550	15.1	31	14	0.5
Universal	864	15.1	26	26	1.0
Average	728	15.3	26	22	0.9
LSD (0.10)	244	1.0	4	2	0.1
CV (%)	28	5.6	12	9	7

Table 31. Combined no-till dry pea variety performance data for Genesee and Moscow, 2009.

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	1857	820	1339	19.7	14.1	16.9	24	23	1.0
Columbian	1472	249	861	20.2	15.3	17.7	29	17	0.6
Cruiser	1601	714	1157	18.6	12.6	15.6	24	23	1.0
Joel	1694	703	1199	20.8	15.7	18.2	36	19	0.5
Karita	1833	1182	1508	23.9	20.1	22.0	26	25	1.0
Monarch	1527	476	1002	19.7	12.9	16.3	20	18	0.9
Pacifica	2200	731	1466	20.5	15.0	17.7	29	23	0.8
Stirling	1765	733	1249	19.3	14.2	16.7	23	19	0.9
Carousel	2060	1017	1538	21.8	16.2	19.0	18	26	1.0
Rex	1374	697	1035	23.8	17.5	20.6	23	20	0.9
Shawnee	1492	550	1021	22.1	15.1	18.6	32	13	0.4
Universal	2149	864	1507	21.8	15.1	18.4	25	25	1.0
Average	1752	728	1240	21.0	15.3	18.1	26	21	0.8
LSD (0.10)	294	244	212	1.2	1.0	1.1	4	2	0.1
CV (%)	14	28	--	4.7	5.6	--	--	--	--

Table 32. 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			
	2007	2008	2009	Average	2007	2008	2009	Average
	----------lb/acre----------				----------g/100----------			
Aragorn	2080	1393	1339	1604	21.9	20.1	16.9	19.6
Columbian	1880	1405	861	1382	17.2	17.5	17.7	17.5
Cruiser	2030	1326	1157	1830	18.2	19.1	15.6	17.6
Joel	1960	1755	1199	1638	19.0	19.9	18.2	19.1
Karita	2130	1332	1508	1920	23.3	23.9	22.0	23.1
Monarch	2200	1519	1002	2070	18.7	18.2	16.3	17.7
Pacifica	2140	1914	1466	1840	18.1	22.4	17.7	19.4
Stirling	2030	1773	1249	1860	22.4	19.9	16.7	19.7
Carousel	2210	1345	1538	1930	22.4	23.9	19.0	22.3
Rex	2160	1646	1035	1880	22.4	22.5	20.6	21.2
Shawnee	2010	1422	1021	1780	19.8	20.9	18.6	19.7
Universal	2420	1605	1507	1844	20.6	20.6	18.4	20.6
Average	2060	1536	1240	1798	20.3	20.8	18.1	19.8
LSD (0.10)	156	212	212	--	0.6	1.1	1.1	--

Table 33. No-till lentil variety performance results at Genesee and Moscow, 2009.

Variety or Selection	Seed Yield			Seed Weight			Plant Height		
	Genesee	Moscow	Average	Genesee	Moscow	Average	Genesee	Moscow	Average
	----------lb/acre----------			----------g/100----------			----------inches----------		
Brewer	739	274	506	5.5	5.0	5.2	14	14	14
Eston	555	379	467	3.1	3.5	3.3	14	14	14
Pardina	920	370	645	3.7	3.6	3.6	12	12	12
Merrit	818	526	672	6.0	5.9	5.9	14	15	14
Riveland	733	466	599	6.6	6.2	6.4	16	15	15
Richlea	787	466	627	4.7	4.7	4.7	15	15	15
Average	759	413	586	4.9	4.8	4.9	14	14	14
LSD (0.10)	187	181	130	0.2	0.3	0.2	1	1	1
CV (%)	20	35	--	3.1	5.7	--	6	6	--

Table 34. Seed yield and seed weight for no-till lentil varieties tested for three years in northern Idaho.

Variety or Selection	Seed Yield				Seed Weight			
	2007	2008	2009	Average	2007	2008	2009	Average
	----------lb/acre----------				----------g/100----------			
Brewer	1280	932	506	906	5.5	6.6	6.0	6.0
Eston	1210	1007	467	895	3.2	3.5	3.4	3.4
Pardina	1285	988	645	973	3.7	4.0	3.9	3.9
Merrit	1330	1195	672	1066	6.0	7.0	6.5	6.5
Riveland	1375	1147	599	1040	7.0	8.1	7.6	7.6
Richlea	1410	1131	627	1056	5.0	5.4	5.2	5.2
Average	1315	1067	586	989	5.1	5.8	5.4	5.4
LSD (0.10)	NS	179	130	--	0.2	0.1	0.2	--

NS - No Significant Differences