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2007 Small Grain and Grain Legume Report

Northern Idaho Small Grain and Grain Legume Research and Extension Program

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University of Idaho
College of Agricultural and Life Sciences

On the cover. Participants at the 2007 winter wheat variety trial field tour at Jim Evans's farm near Genesee.

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Bert Henriksen - Lewiston
Tim Dillon - Bonners Ferry
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Ryan Mia - Bonners Ferry

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SPRING BARLEY

SPRING LEGUMES

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 2006-2007 crop season. The variety trials were located in cooperators' fields at eleven 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 2006 and nine spring cereal trials were seeded in the spring of 2007. 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 2007, spring pea and lentil trials were seeded near Nezperce, 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 between October 2 and October 13, 2006. Winter wheat trials established well at all locations and had good winter survival, except for the Bonners Ferry site where stands were thin and plants appeared weak in the spring. Early spring growth was good at most locations. Conditions became hot and dry earlier in the growing season than usual, starting in May and continuing through June. Weather stations in Moscow recorded below average precipitation all months from November 2006 to November 2007, with the largest percentage deficits during summer. This lack of moisture affected grain yield and test weight in most locations, except Bonners Ferry, where summer rains were favorable. The Craigmont site was most severely affected, with an average winter wheat yield of 67 bu/A and an average test weight of 56 lb/bu. The average winter wheat yield over all locations in 2006-2007 was 29 bu/A lower than the average yield over the previous three crop years.

Spring trials were seeded between April 13 and May 1. After spring seeding, growing conditions were good until late May, when high temperatures and low precipitation predominated for the remainder of the growing season. The exception was Bonners Ferry where temperatures tended to be more moderate and rainfall was greater. The spring wheat and spring barley yields, test weight and barley plumpness were generally below average. Spring wheat yields in 2007 were 22 bu/A lower than the previous 3-year average, and spring barley was 16 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. All the pea trials were sprayed with insecticide to prevent pea weevils and pea aphids from damaging the plants. Chickpeas were not sprayed for Ascochyta blight due to dry conditions. Specific management practices for individual trials are listed in Table 1.

Trial Locations, Management and Varieties Tested

Table 1. 2006-2007 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)
Idaho	Greencreek	SW	4/24/2007	8/15/2007	S. Wheat	95-15-0-15	Axial Dagger Affinity Adigor	8.2 oz/A 10.2 oz/A 0.8 oz/A 9.6 oz/A
Lewis	Craigmont	SB	4/24/2007	8/24/2007	W. Wheat	60-10-0-14	Ally Extra Dagger Sticker	0.1 oz/A 10 oz/A 1 pt/100 gal.
Lewis	Nezperce	SL	5/1/2007	8/14/2007	S.Wheat	None	Sencor	4 oz/A
Nez Perce	Tammany	WW	10/2/2006	7/13/2007	S. Fallow	100-20-10-15	Har. Extra XP Dagger M-90	1/3 oz/A 1/2 pt/A 1 qt/100 gal.
Nez Perce	Genesee	SW + SB	4/13/2007	8/13/2007	WW	96-17-0-20 Trace Cu & Zn	Affinity Solve Ester	0.6/A 0.75 pt/A
Nez Perce	Genesee	SL-NT	4/16/2007	8/6/2007	S. Barley	None	Prowl Sencor	13 oz/A 4.5 oz/A
Latah	Moscow	SL, CP	4/23/2007	8/6/2007 9/14/2007	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	10/6/2006	8/2/2007	S. Pea	139-28-0-29	Roundup RT Formula 40 Puma Rhino Starane	24 oz/A Pre 32 oz/A Pre 11 oz/A 13 oz/A 5.5 oz/A
Latah	Moscow Parker Farm	SL-NT	4/26/2007	8/23/2007	S. Wheat	None	Roundup OM Formula 40 Pursuit Roundup	24 oz/A Pre 32 oz/A Pre 2.5 oz/A 24 oz/A
Latah	Moscow Parker Farm	SB-NT	4/26/2007	8/10/2007	W. Wheat	139-28-0-29	Roundup RT Rhino Puma Starane	24 oz/A Pre 13 oz/A 11 oz/A 6 oz/A

Table 1 (continued). 2006-2007 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	4/23/2007	8/23/2007	S. Wheat	None	Roundup Pursuit	20 oz/A Pre 2.5 oz/A
Latah	Genesee Kambitsch Farm	SL	4/19/2007	8/16/2007	S. Wheat	None	Roundup OM Formula 40 Persuit Roundup	24 oz/A Pre 32 oz/A Pre 2.5 oz/A 24 oz/A
Latah	Genesee Kambitsch Farm	SHB	4/25/2007	8/8/2007	W. Wheat	100-10-0-20	Rhino Puma Starane	13 oz/A 11oz/A 6 oz/A
Latah	Genesee Kambitsch Farm	SW	4/19/2007	8/17/2007	W. Wheat	50+-39-0-9	Rhino Puma Starane	13 oz/A 11oz/A 6 oz/A
Latah	Genesee Kambitsch Farm	WW	10/10/2006	8/9/2007	S. Pea	50+-39-0-9	Roundup Formula 40 Rhino Puma Starane	24 oz/A Pre 32 oz/A Pre 13 oz/A 11 oz/A 5.5 oz/A
Boundary	B. Ferry	WW	10/12/2006	8/21/2007	S. Canola	106-31-43-20	Achieve Curail	9.6 oz/A 2.5 pt/A
Boundary	B. Ferry	SW + SB	4/20/2007	8/21/2007	S. Canola	106-31-43-20	Achieve Curail	9.6 oz/A 2.5 pt/A

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

+ - Fertilizer rate study, not less than 50 lbs./A - N

Table 2. Released varieties tested in Northern Idaho Extension variety trials in 2006-2007

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
Hubbard	ID 86-10420A	2002	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
Masami	WA 7916	2004	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
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 2006-2007.

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
Bob	WA 8682-96	2002	Washington State University, USDA/ARS
Boulder	BZ596-117	2005	WestBred, LLC, Bozeman, MT
Burton	98ID251	2004	University of Idaho, USDA/ARS
Camas	ND 9147	1998	University of Idaho, USDA/ARS
Champion	YU-501-385D		WestBred, LLC, Bozeman, MT
Conrad	B5057	2005	Busch Ag. Resources, Inc.
Criton	91Ab3148	2001	University of Idaho, USDA/ARS
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
Tetonia	98Ab11720	2006	University of Idaho, USDA/ARS
* certified			
Two-row hulless spring barley			
Bear	WA 11045-87	1996	Washington State University, USDA/ARS
CDC Alamo	HB340	1999	University of Saskatchewan, Canada
CDC Fibar	HB373	2003	University of Saskatchewan, Canada
Clearwater	01ID435H	2007	University of Idaho, USDA/ARS
Meresse	BZ594-35	2002	WestBred, LLC, Bozeman, MT
Six-row spring barley			
Colter	79Ab10719-66LC	1991	University of Idaho, USDA/ARS
Excel	MN 00052	1989	University of Minnesota, USDA/ARS
Legacy	6B93-2978	2001	Busch Ag. Resources, Inc.
Morex	M25	1978	University of Minnesota
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
Riverland			Washington State University, USDA/ARS

Table 2 (cont.) Released varieties tested in Northern Idaho Extension variety trials in 2006-2007.

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
Camry	Ceb 1080	2003	Cebeco, Netherlands
Columbian			Campbell Soup Co.
Cooper	Ceb 1081	2003	Cebeco, Netherlands
Cruiser	NZ4L28	2001	Crop and Food Research, New Zealand
Joel	PS 110028	1997	Washington State University, USDA/ARS
Karita		1995	Svalof Weibull
K 2	SW98692	2003	ProGene
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	CA99901875W	2007	Washington State University, USDA/ARS
Desi chickpea			
Myles		1994	Washington State University, USDA/ARS

Table 3. Winter wheat variety performance results at Craigmont, 2006-2007.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height
	bu/acre	%	0-100	lb/bu	inches
Soft White					
Bitterroot	66	13.1	17	57.8	34
Brundage 96	70	12.8	20	56.3	31
Concept	69	12.6	21	57.1	30
Goetze	61	13.8	22	55.7	30
Hubbard	69	13.3	26	57.3	37
IDO 587	67	13.9	19	54.9	33
Lambert	71	13.1	25	55.6	34
Madsen	61	14.1	25	54.9	31
Masami	58	12.8	25	54.6	31
Mohler	71	13.1	23	55.3	34
Simon	69	13.1	24	56.3	32
Stephens	67	13.7	24	54.4	32
Tubbs 06	65	13.8	22	54.5	34
WestBred 528	69	13.8	23	58.0	31
ORCF-101	62	14.7	25	54.7	31
ORCF-102	67	13.6	26	56.4	33
ID 02-859	64	14.4	18	53.8	31
ID 93-64901A	77	13.8	22	57.2	33
ID 99-419	68	12.0	14	56.9	32
ID 99-435	73	13.1	25	55.4	36
IDO 655	57	13.8	26	58.3	34
Average	67	13.4	22	56.0	33
Hard Wheat					
Bauermeister (HR)	68	13.9	56	56.4	34
Boundary (HR)	74	12.9	48	57.7	32
MDM (HW)	60	14.0	47	56.9	32
Paladin (HR)	64	14.4	59	60.0	31
IDO 621 (HR)	69	13.3	47	58.5	31
Average	67	13.7	51	57.9	32
Club					
Cara	62	14.1	30	55.2	31
Chukar	64	14.7	32	54.7	32
Coda	70	14.5	32	57.3	33
Rohde	75	14.3	29	59.3	31
Average	68	14.4	31	56.6	32
Overall Average	67	13.6	28	56.4	32
LSD (0.10)	4	--	--	1.1	2
CV (%)	6	--	--	1.6	4

Table 4. Winter wheat variety performance results at Lewiston, 2006-2007.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Bitterroot	66	13.2	17	60.0	35	0
Brundage 96	75	13.6	24	58.9	37	0
Concept	68	14.2	20	56.8	32	3
Goetze	69	12.4	20	57.8	35	0
Hubbard	71	14.2	17	59.1	38	10
IDO 587	68	14.2	21	56.3	34	0
Lambert	70	12.9	27	59.3	40	10
Madsen	68	14.7	26	57.8	35	1
Masami	72	14.3	28	57.0	33	0
Mohler	79	13.7	20	58.1	38	2
Simon	72	12.6	21	59.3	37	0
Stephens	72	13.5	22	56.4	36	1
Tubbs 06	77	13.2	22	57.4	40	0
ORCF-101	73	13.5	20	58.5	35	1
ORCF-102	64	14.3	26	58.6	36	1
WestBred 528	73	12.5	21	60.1	35	5
ID 02-859	69	14.0	12	57.4	33	0
ID 93-64901A	76	13.2	18	59.1	38	0
ID 99-419	61	13.3	13	57.9	35	0
ID 99-435	77	13.0	25	59.5	40	6
IDO 655	61	14.1	25	59.6	37	19
Average	71	13.5	21	58.3	36	3
Hard Wheat						
Bauermeister (HR)	71	13.2	57	58.9	38	11
Boundary (HR)	70	13.4	56	59.4	38	0
MDM (HW)	65	15.0	57	57.7	35	6
Paladin (HR)	73	13.8	57	60.0	36	0
IDO 621 (HR)	71	12.9	54	59.8	37	0
Average	70	13.6	56	59.2	37	3
Club						
Cara	71	13.7	25	57.0	33	0
Chukar	65	13.9	26	57.7	35	3
Coda	64	14.1	20	58.6	38	3
Rohde	71	13.1	25	60.2	37	4
Average	68	13.7	24	58.4	36	3
Overall Average	70	13.6	27	58.5	36	3
LSD (0.10)	11	--	--	1.0	2	4
CV (%)	13	--	--	1.5	5	109

Table 5. Winter wheat variety performance results at Genesee direct seeded, 2006-2007.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height
	bu/acre	%	0-100	lb/bu	inches
Soft White					
Bitterroot	67	12.3	20	60.7	32
Brundage 96	73	12.2	26	59.6	27
Concept	69	11.9	25	60.1	28
Goetze	78	12.3	25	59.1	28
Hubbard	75	12.2	28	60.9	36
IDO 587	71	12.3	30	59.1	28
Lambert	69	11.9	31	59.7	31
Madsen	74	12.5	36	59.7	30
Masami	70	11.9	29	58.5	30
Mohler	71	12.2	28	59.8	29
ORCF-101	69	13.3	31	59.1	28
ORCF-102	71	13.1	31	59.3	30
Simon	82	12.5	29	58.8	31
Stephens	74	12.1	32	59.6	29
Tubbs 06	70	12.6	30	58.2	32
WestBred 528	77	11.6	26	61.9	30
ID 02-859	73	12.0	21	58.3	28
ID 93-64901A	82	12.1	25	60.3	30
ID 99-419	69	12.0	3	58.5	29
ID 99-435	73	12.5	29	58.7	33
IDO 655	74	12.6	31	60.5	35
Average	73	12.3	27	59.5	30
Hard Wheat					
Bauermeister (HR)	75	11.9	30	60.6	34
Boundary (HR)	72	12.5	37	59.9	29
MDM (HW)	72	12.9	55	60.5	33
Paladin (HR)	67	13.3	73	62.5	29
IDO 621 (HR)	76	12.2	34	60.8	29
Average	72	12.6	46	60.9	31
Club					
Cara	67	12.5	32	58.5	26
Chukar	67	12.8	35	60.1	29
Coda	63	13.3	34	61.4	28
Rohde	74	12.2	36	61.9	29
Average	68	12.7	34	60.5	28
Overall Average	72	12.4	31	59.9	30
LSD (0.10)	8	--	--	0.8	2
CV (%)	9	--	--	1.1	5

Table 6. Winter wheat variety performance results at Moscow direct seeded, 2006-2007.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height
	bu/acre	%	0-100	lb/bu	inches
Soft White					
Bitterroot	97	8.8	22	60.9	39
Brundage 96	99	9.1	27	59.9	33
Concept	97	8.9	15	59.9	33
Goetze	97	9.2	23	59.2	32
Hubbard	97	8.9	26	60.7	41
IDO 587	89	9.4	25	60.5	33
Lambert	96	8.3	25	60.0	37
Madsen	95	9.6	1	60.3	35
Masami	99	8.6	30	58.9	37
Mohler	104	9.1	27	60.4	38
ORCF-101	91	9.7	29	60.3	35
ORCF-102	98	9.1	28	60.4	38
Simon	101	9.1	27	60.2	38
Stephens	92	9.5	25	60.5	34
Tubbs 06	99	8.5	30	59.9	38
WestBred 528	97	9.0	26	61.9	34
ID 02-859	97	9.1	18	58.5	33
ID 93-64901A	108	8.2	20	59.8	35
ID 99-419	97	8.8	21	59.9	35
ID 99-435	95	8.6	28	59.2	38
IDO 655	92	9.4	32	61.8	41
Average	97	9.0	24	60.1	36
Hard Wheat					
Bauermeister (HR)	102	8.9	59	61.3	42
Boundary (HR)	101	9.4	58	60.9	35
MDM (HW)	100	8.9	56	61.3	39
Paladin (HR)	82	10.5	61	63.7	33
IDO 621 (HR)	99	9.3	60	62.2	34
Average	97	9.4	59	61.9	37
Club					
Cara	94	8.8	26	58.6	33
Chukar	100	7.8	21	59.1	35
Coda	96	9.1	32	62.0	37
Rohde	95	9.0	34	62.4	34
Average	96	8.7	28	60.5	35
Overall Average	97	9.0	30	60.5	36
LSD (0.10)	5	--	--	0.5	1
CV (%)	5	--	--	0.6	3

Table 7. Winter wheat variety performance results at Bonners Ferry, 2006-2007.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Bitterroot	43	12.5	24	57.9	27	14
Brundage 96	50	12.0	25	57.6	24	3
Concept	39	12.4	24	58.7	24	18
Goetze	27	12.6	34	55.6	19	1
Hubbard	37	12.5	28	58.6	32	18
IDO 587	26	13.0	30	56.4	24	6
Lambert	36	12.8	32	56.8	24	39
Madsen	45	12.5	29	56.0	26	2
Masami	41	11.7	26	55.6	26	15
Mohler	43	13.1	30	56.9	26	9
ORCF-101	43	13.0	29	57.1	25	0
ORCF-102	39	12.5	31	57.3	24	10
Simon	23	13.0	26	55.4	23	2
Stephens	30	12.9	29	55.7	24	12
Tubbs 06	35	12.6	35	55.9	24	14
WestBred 528	48	12.8	28	58.8	23	6
ID 02-859	49	11.9	16	56.2	23	1
ID 93-64901A	32	12.4	23	56.9	23	9
ID 99-419	38	12.0	24	57.6	24	17
ID 99-435	35	12.6	34	57.4	27	28
IDO 655	26	12.4	31	58.6	25	47
Average	37	12.5	28	57.0	25	13
Hard Wheat						
Bauermeister (HR)	33	12.3	68	59.0	24	56
Boundary (HR)	35	12.2	63	58.9	24	14
MDM (HW)	25	13.6	61	59.3	24	48
Paladin (HR)	36	13.5	68	61.4	24	5
IDO 621 (HR)	44	12.1	61	59.8	23	21
Average	35	12.7	64	59.7	24	29
Club						
Cara	21	13.0	31	54.4	22	1
Chukar	30	12.2	29	55.4	23	1
Coda	31	13.2	33	58.7	23	3
Rohde	43	12.4	33	59.6	25	15
Average	31	12.7	32	57.0	23	5
Overall Average	36	12.6	34.5	57.5	24	15
LSD (0.10)	11	--	--	1.0	2	12
CV (%)	25	--	--	1.4	8	68

Table 8. Combined winter wheat performance data for Craigmont, Lewiston, Genesee, Moscow and Bonners Ferry, 2006-2007.

Variety or Selection	Seed Yield						Average of 5 sites				
	Craigmont	Lewstn.	Genesee	Moscow	B. Ferry	Average	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging*
	bu/acre						%	0-100	lb/bu	inches	%
Soft White											
Bitterroot	66	66	67	97	43	68	12.0	20	59.5	33	7
Brundage 96	70	75	73	99	50	73	11.9	24	58.5	30	2
Concept	69	68	69	97	39	68	12.0	21	58.5	29	11
Goetze	61	69	78	97	27	66	12.1	25	57.5	29	1
Hubbard	69	71	75	97	37	70	12.2	25	59.3	37	14
IDO 587	67	68	71	89	26	64	12.6	25	57.4	30	3
Lambert	71	70	69	96	36	68	11.8	28	58.3	33	25
Madsen	61	68	74	95	45	69	12.7	23	57.7	31	2
Masami	58	72	70	99	41	68	11.9	28	56.9	31	8
Mohler	71	79	71	104	43	74	12.2	26	58.1	33	6
ORCF-101	62	73	69	91	43	68	12.8	27	57.9	31	1
ORCF-102	67	64	71	98	39	68	12.5	28	58.4	32	6
Simon	69	72	82	101	23	69	12.1	25	58.0	32	1
Stephens	67	72	74	92	30	67	12.3	26	57.3	31	7
Tubbs 06	65	77	70	99	35	69	12.1	28	57.2	34	7
WestBred 528	69	73	77	97	48	73	11.9	25	60.1	31	6
ID 02-859	64	69	73	97	49	70	12.3	17	56.8	30	1
ID 93-64901A	77	76	82	108	32	75	11.9	22	58.7	32	5
ID 99-419	68	61	69	97	38	67	11.6	15	58.2	31	9
ID 99-435	73	77	73	95	35	71	12.0	28	58.0	35	17
IDO 655	57	61	74	92	26	62	12.5	29	59.8	34	33
Average	67	71	73	97	37	69	12.2	25	58.2	32	8
Hard Wheat											
Bauermeister (HR)	68	71	75	102	33	70	12.0	54	59.2	34	34
Boundary (HR)	74	70	72	101	35	70	12.1	52	59.4	32	7
MDM (HW)	60	65	72	100	25	64	12.9	55	59.1	33	27
Paladin (HR)	64	73	67	82	36	64	13.1	64	61.5	31	3
IDO 621 (HR)	69	71	76	99	44	72	12.0	51	60.2	31	11
Average	67	70	72	97	35	68	12.4	55	59.9	32	16
Club											
Cara	62	71	67	94	21	63	12.4	29	56.7	29	1
Chukar	64	65	67	100	30	65	12.3	29	57.4	31	2
Coda	70	64	63	96	31	65	12.8	30	59.6	32	3
Rohde	75	71	74	95	43	72	12.2	31	60.7	31	10
Average	68	68	68	96	31	66	12.4	30	58.6	31	4
Overall Average	67	70	72	97	36	68	12.2	30	58.5	32	9
LSD (0.10)	4	11	8	5	11	3	--	--	0.4	1	5
CV (%)	6	13	9	5	25	--	--	--	--	--	--

*Lodging data are from Bonners Ferry and Lewiston

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

Variety or Selection	2004-2005	2005-2006	2006-2007	Average
Number of Sites	5	5	5	15
	----------bu/acre----------			
Soft White				
Brundage 96	104	82	73	86
Concept	100	83	68	84
Hubbard	92	86	70	83
IDO 587	99	80	64	81
Lambert	106	82	68	85
Madsen	98	82	69	83
Masami	93	85	68	82
Mohler	107	89	74	90
ORCF-101	100	83	68	84
ORCF-102	103	91	68	87
Simon	101	84	69	85
Stephens	104	82	67	84
WestBred 528	109	86	73	89
Average	101	84	69	85
Hard Red				
Boundary	85	81	70	79
Average	85	81	70	79
Club				
Chukar	99	84	65	83
Coda	92	80	65	79
Rohde	99	80	72	84
Average	97	81	67	82
Overall Average	99	84	69	84
LSD (0.10)	4	3	4	--

Table 10. Hard red winter wheat performance with nitrogen rate and application timing under replicated conventional-till and no-till management near Genesee, 2006-2007.

Nitrogen Treatment	Seed Yield		Test Weight		Seed Protien		Seed Hardness		Plant Height	
	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till
	---bu/acre---		-----lb/bu-----		-----%-----		---0-100---		-----inches-----	
N Fertilizer Timing										
100% Fall	65	68	61.0	61.5	11.2	10.1 *	51	50	29	29
70% Fall + 30 % spring	67	73	61.0	61.7	11.2	10.2 *	51	51	28	29
60% Fall + 25% spring dry + 15% foliar at anthesis	66	69	61.1	61.7	11.0	10.1 *	52	50	28	28
LSD (*P* =0.05) (among timing within tillage)	NS	NS	NS	NS	0.6	0.6	NS	NS	NS	NS
N Fertilizer Rate(lb/acre)										
50	62	62	61.4	61.5	10.3	9.3 *	51	48	28	28
75	67	64	61.1	61.6	10.7	9.5 *	51	49	29	28
100	65	72	61.1	61.9	11.1	10.1 *	51	52	28	29
125	69	73	60.9	61.6	11.4	10.5 *	52	51	28	29
150	68	75	60.8	61.8	11.7	10.5 *	51	52	29	30
175	65	72	60.7	61.3	11.9	11.0 *	52	51	28	29
Average	66	70	61.0	61.6	11.2	10.2 *	51	50	28	29
LSD (*P* =0.05)*	NS	NS	NS	NS	0.6	0.6	NS	NS	NS	NS
C.V.(%)	9	9	1	1	3	3	6	6	4	4

* NT values different than CT at *P=0.05*.
NS - no significant differences

Table 10. (cont). Hard red winter wheat performance with nitrogen rate and application timing under replicated conventional-till and no-till management near Genesee, 2006-2007.

Nitrogen Treatment	Seed Weight		Heads		Biomass		Harvest Index	
	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till
	----g/200----		---no./sq.ft.---		--1000 lb/acre--		--0.01--0.00--	
N Fertilizer Timing								
100% Fall	7.8	8.0	42	50	10264	11216	0.48	0.49
70% Fall + 30 % spring	7.9	8.0	44	54	10696	11947	0.49	0.49
60% Fall + 25% spring dry + 15% foliar at anthesis	8.0	8.1	40	51	9865	11168	0.50	0.49
LSD (*P* =0.05) (among timing within tillage)	1.4	1.4	12	12	NS	NS	0.05	0.05
N Fertilizer Rate(lb/acre)								
50	8.2	8.3	39	46	9866	10310	0.50	0.49
75	7.9	8.2	41	44	10397	10088	0.50	0.49
100	7.9	8.2	41	51	10137	11705	0.50	0.49
125	7.9	8.0	44	58 *	10779	12843	0.47	0.48
150	7.7	8.1	44	58 *	10429	12618	0.49	0.49
175	7.7	7.7	43	53	10041	11098	0.49	0.48
Average	7.9	8.1	42	52	10275	11443	0.49	0.49
LSD (*P* =0.05)*	1.4	1.4	12	12	NS	NS	0.05	0.05
C.V.(%)	3	3	15	15	14	14	5	5

* NT values different than CT at *P=0.05*.
NS - no significant differences

Spring Wheat

Table 11. Spring wheat variety performance results at Greencreek, 2007.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height
	bu/acre	%	0-100	lb/bu	inches
Soft White					
Alturas	38	13.8	26	54.0	30
Cataldo	34	14.4	22	51.4	30
Eden	43	14.3	31	57.6	31
Louise	36	14.6	21	51.8	32
Nick	45	14.8	25	53.2	30
Penawawa	35	15.6	26	53.3	29
WA8008	44	13.6	25	52.7	31
WA8039	44	15.1	24	53.6	31
ML 37-A	31	16.3	33	51.0	27
Average	39	14.7	26	53.2	30
Hard White					
IDO 377s	34	16.3	65	52.6	30
Lolo	34	15.9	70	53.9	30
Otis	36	16.1	69	55.6	33
Lochsa	34	15.7	69	49.8	30
OR 4201104	31	16.6	77	54.6	27
OR 4201261	33	15.8	73	51.7	27
Average	34	16.1	71	53.0	30
Hard Red					
Cabernet	38	16.0	58	52.8	26
Hank	40	15.6	61	52.1	30
Hollis	37	17.3	67	53.4	40
Jefferson	40	15.8	70	53.8	31
Jerome	36	15.7	60	51.8	31
Tara 2002	37	16.3	59	54.1	33
WestBred 926	37	17.0	65	51.5	30
IDO 578	35	15.8	55	51.6	30
02W50076R	35	16.0	61	51.8	27
WA 7954	35	17.3	61	52.3	32
Average	37	16.3	62	52.5	31
Overall Average	37	15.7	51	52.9	30
LSD (0.10)	4	--	--	1.5	1
C.V. (%)	10	--	--	2.4	4

Table 12. Spring wheat variety performance results at Genesee direct seeded, 2007.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height
	bu/acre	%	0-100	lb/bu	inches
Soft White					
Alturas	47	12.8	25	56.4	28
Cataldo	43	12.8	21	56.5	27
Eden	53	11.6	26	60.0	30
Louise	50	12.2	23	57.2	34
Nick	53	12.9	21	57.2	29
Penawawa	45	13.4	21	56.1	28
WA8008	56	12.1	21	58.0	29
WA8039	53	11.7	19	58.3	30
ML 37-A	42	14.1	27	54.6	28
Average	49	12.6	23	57.1	29
Hard White					
IDO 377s	45	13.8	54	57.3	31
Lolo	46	13.8	56	57.7	31
Otis	47	13.6	57	58.6	35
Lochsa	48	14.3	61	55.7	30
OR 4201104	43	14.5	67	57.1	29
OR 4201261	47	13.2	62	56.8	27
Average	46	13.9	60	57.2	31
Hard Red					
Cabernet	46	13.8	44	57.8	25
Hank	48	14.3	50	56.0	29
Hollis	45	14.4	51	56.5	37
Jefferson	53	13.4	56	59.1	30
Jerome	43	13.3	46	57.0	29
Tara 2002	49	13.8	44	58.8	31
WestBred 926	53	13.4	50	57.8	29
IDO 578	48	13.3	43	58.6	28
02W50076R	43	14.4	45	55.0	24
WA 7954	49	14.2	47	57.9	32
Average	48	13.8	48	57.5	29
Overall Average	48	13.4	41	57.3	30
LSD (0.10)	4	--	--	1.4	1
C.V. (%)	7	--	--	2.0	4

Table 13. Spring wheat variety performance results at Bonners Ferry, 2007.

Variety or Selection	Seed Yield	Seed Protein	Hardness Score	Test Weight	Plant Height	Lodging
	bu/acre	%	0-100	lb/bu	inches	%
Soft White						
Alturas	41	12.2	24	59.3	26	6
Cataldo	43	13.2	21	58.7	25	6
Eden	49	12.2	35	60.7	25	7
Louise	54	11.8	31	59.3	28	32
Nick	31	14.5	32	60.1	23	2
Penawawa	45	13.3	29	59.8	26	10
WA8008	51	13.0	25	60.0	27	6
WA8039	29	13.1	22	60.7	24	16
ML 37-A	51	12.4	23	58.3	27	8
Average	44	12.9	27	59.7	26	10
Hard White						
IDO 377s	44	13.7	65	60.1	28	20
Lolo	51	13.4	74	60.9	30	12
Otis	54	12.6	71	61.6	30	24
Lochsa	36	14.5	78	59.9	26	6
OR 4201104	33	14.5	77	59.8	28	8
OR 4201261	41	12.6	73	59.3	25	2
Average	43	13.6	73	60.3	28	12
Hard Red						
Cabernet	41	15.0	64	59.6	23	0
Hank	42	14.2	70	60.4	25	6
Hollis	33	15.0	68	60.5	28	10
Jefferson	46	14.2	75	61.1	26	15
Jerome	45	13.5	62	60.6	26	8
Tara 2002	29	15.7	69	59.9	25	12
WestBred 926	40	15.1	68	59.9	24	4
IDO 578	34	15.1	71	60.3	24	14
02W50076R	43	13.8	62	57.5	23	0
WA 7954	37	15.3	68	59.5	27	9
Average	39	14.7	68	59.9	25	8
Overall Average	42	13.8	54	59.9	26	10
LSD (0.10)	6	--	--	0.3	2	5
C.V. (%)	13	--	--	0.4	7	41

Table 14. Combined spring wheat performance data for Greencreek, Genesee, and Bonners Ferry, 2007.

Variety or Selection	Seed Yield				Average of 3 sites			
	Greenck.	Genesee	B. Ferry	Average	Seed Protein	Hardness Score	Test Weight	Plant Height
	----------bu/acre----------				%	0-100	lb/bu	inches
Soft White								
Alturas	38	47	41	42	12.9	25	56.6	28
Cataldo	34	43	43	40	13.5	21	55.5	27
Eden	43	53	49	48	12.7	31	59.4	29
Louise	36	50	54	47	12.9	25	56.1	31
Nick	45	53	31	43	14.1	26	56.8	27
Penawawa	35	45	45	42	14.1	25	56.4	28
WA8008	44	56	51	50	12.9	24	56.9	29
WA8039	44	53	29	42	13.3	22	57.5	28
ML 37-A	31	42	51	41	14.3	28	54.6	27
Average	39	49	44	44	13.4	25	56.7	28
Hard White								
IDO 377s	34	45	44	41	14.6	61	56.7	30
Lolo	34	46	51	44	14.4	67	57.5	30
Otis	36	47	54	46	14.1	66	58.6	33
Lochsa	34	48	36	39	14.8	69	55.1	29
OR 4201104	31	43	33	36	15.2	74	57.2	28
OR 4201261	33	47	41	40	13.9	69	55.9	26
Average	34	46	43	41	14.5	68	56.8	29
Hard Red								
Cabernet	38	46	41	42	14.9	55	56.7	25
Hank	40	48	42	43	14.7	60	56.2	28
Hollis	37	45	33	38	15.6	62	56.8	35
Jefferson	40	53	46	46	14.5	67	58.0	29
Jerome	36	43	45	41	14.2	56	56.5	29
Tara 2002	37	49	29	38	15.3	57	57.6	30
WestBred 926	37	53	40	43	15.2	61	56.4	28
IDO 578	35	48	34	39	14.7	56	56.8	27
02W50076R	35	43	43	40	14.7	56	54.8	25
WA 7954	35	49	37	40	15.6	59	56.6	30
Average	37	48	39	41	14.9	59	56.6	29
Overall Average	37	48	42	42	14.3	49	56.7	29
LSD (0.10)	4	4	6	3	--	--	0.6	1
C.V. (%)	10	7	13	--	--	--	--	--

Table 15. Grain yield averages for spring wheat varieties tested for three years in northern Idaho.

Variety or Selection	2005	2006	2007	Average
	----------bu/acre----------			
Soft White				
Alturas	49	64	42	52
Cataldo	56	68	40	55
Eden	40	61	48	50
Louise	53	64	47	55
Nick	56	71	43	57
Penawawa	33	51	42	42
Average	48	63	44	52
Hard White				
IDO 377s	42	62	41	48
Lolo	49	61	44	51
Otis	52	64	46	54
Lochsa	57	63	39	53
Average	50	63	43	52
Hard Red				
Hank	58	61	43	54
Hollis	48	59	38	48
Jefferson	56	61	46	54
Jerome	61	58	41	53
Tara 2002	53	62	38	51
WestBred 926	54	62	43	53
Average	55	61	42	52
Overall Average	51	62	43	52
LSD (0.10)	2	3	3	--

Table 16. Hard red spring wheat performance with nitrogen rate and application timing under replicated conventional-till and no-till management near Genesee, 2007.

Nitrogen Treatment	Seed Yield		Test Weight		Seed Protien		Seed Hardness		Plant Height	
	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till
	---bu/acre---		-----lb/bu-----		-----%-----		---0-100---		----g/200----	
N Fertilizer Timing										
100% Fall	56	53	60.3	60.6	12.6	11.9	54	53	29	29
70% Fall + 30 % spring	56	49	60.7	61.0	12.0	11.4	55	52	29	28
60% Fall + 25% spring dry + 15% foliar at anthesis	56	51	60.6	60.7	12.5	12.0	56	53	29	28
LSD (*P* =0.05) (among timing within tillage)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
N Fertilizer Rate(lb/acre)										
50	50	45	61.3	61.6	11.5	11.0	55	54	28	28
75	56	46	61.0	61.3	11.7	11.1	55	52	29	28
100	56	49	60.8	60.9	12.3	11.6	55	52	28	28
125	58	55	60.3	60.4	12.6	12.1	54	52	29	29
150	57	54	60.2	60.3	12.7	12.3	55	52	29	29
175	60	57	59.6	60.0	13.3	12.7	56	54	29	29
Average	56	51	60.5	60.8	12.3	11.8	55	53	29	28
LSD (*P* =0.05)*	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
C.V.(%)	9	9	0.8	0.8	3.0	3.0	4	4	4	4

* NT values different than CT at *P=0.05*.
NS - no significant differences

Table 16 (cont). Hard red spring wheat performance with nitrogen rate and application timing under replicated conventional-till and no-till management near Genesee, 2007.

Nitrogen Treatment	Seed Weight		Heads		Biomass		Harvest Index	
	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till
	----g/200----		---no./sq.ft.---		--1000 lb/acre--		--0.01--0.00--	
N Fertilizer Timing								
100% Fall	6.5	6.4	51	50	9386	9132	0.44	0.43
70% Fall + 30 % spring	6.8	6.6	49	47	9399	8095	0.44	0.43
60% Fall + 25% spring dry + 15% foliar at anthesis	6.7	6.5	51	49	9396	8426	0.43	0.43
LSD (*P* =0.05) (among timing within tillage)	1	1	NS	NS	NS	NS	0.04	0.04
N Fertilizer Rate(lb/acre)								
50	7.0	6.9	46	39	7984	6995	0.45	0.44
75	7.0	6.8	49	43	9061	7692	0.44	0.44
100	6.8	6.5	48	48	9332	8518	0.44	0.43
125	6.5	6.4	51	51	9554	9099	0.43	0.43
150	6.4	6.3	53	55	10065	9180	0.44	0.42
175	6.2	6.1	56	54	10368	9822	0.41	0.42
Average	6.7	6.5	50	48	9394	8551	0.43	0.43
LSD (*P* =0.05)*	1	1	NS	NS	NS	NS	0.04	0.04
C.V.(%)	4	4	12	12	11	11	4	4

* NT values different than CT at *P=0.05*.
NS - no significant differences

Table 17. Spring barley variety performance results at Greencreek, 2007.

Variety or Selection	Seed Yield	Test Weight	Plant Height	Lodging	Plumps >6/64	Thins <5.5/64
	bu/acre	lb/bu	inches	%	%	%
2 Row Barley						
Baronesse	39	40.4	24	0	10	68
Bear (hulless)	37	43.4	27	3	8	74
Bob	47	43.6	28	2	17	48
Boulder	42	42.2	26	0	9	59
Burton	42	39.8	27	0	13	53
Camas	47	44.4	28	0	10	70
Champion	55	45.0	29	0	13	61
Conrad	41	41.5	24	0	16	49
Criton	45	41.7	28	3	14	47
Harrington	40	41.7	27	0	9	67
Lenetah	51	43.0	28	3	9	59
Merit	32	41.9	24	0	17	40
Meresse (hulless)	38	42.3	25	0	5	72
AC Metcalfe	38	41.3	27	1	16	49
Spaulding	46	42.7	28	0	9	78
98Ab11720	43	41.4	25	0	6	74
2B99-2316	41	39.7	27	0	14	48
2B99-2657	34	39.3	26	0	25	37
01AH2812	36	43.7	25	4	14	51
Average	42	42.0	26	1	12	58
6 Row Barley						
Colter	40	39.4	30	5	9	68
Excel	40	37.8	30	6	6	75
Legacy	37	37.3	29	3	9	70
Morex	42	40.4	33	9	5	74
Steptoe	46	38.3	30	13	12	51
Tradition	43	41.2	30	7	9	66
Average	41	39.1	30	7	8	68
Overall Average	41	41	27	2	11	60
LSD (0.10)	5	1.7	2	4	6	11
CV (%)	9	3.5	5	156	44	15

Table 18. Spring barley variety performance results at Genesee direct seeded, 2007.

Variety or Selection	Seed Yield	Test Weight	Plant Height	Lodging	Plumps >6/64	Thins <5.5/64
	bu/acre	lb/bu	inches	%	%	%
2 Row Barley						
Baronesse	80	52.3	26	0	58	14
Bear (hulless)	69	56.0	27	0	31	29
Bob	84	53.5	28	0	69	10
Boulder	82	54.9	28	0	79	6
Burton	80	53.1	29	0	64	8
Camas	84	54.7	28	0	67	11
Champion	92	55.3	29	0	69	10
Conrad	77	51.8	28	0	68	9
Criton	85	52.5	28	0	80	6
Harrington	74	51.4	27	0	36	24
Merit	74	48.2	27	0	49	20
Meresse (hulless)	70	59.4	26	0	45	20
AC Metcalfe	79	52.9	28	0	75	7
Spaulding	85	54.6	25	0	62	12
98Ab11720	83	52.6	27	0	49	17
2B99-2316	81	51.5	26	0	62	12
2B99-2657	78	49.2	27	0	60	14
01AH2812	58	60.1	27	0	69	8
Radiant	83	52.7	26	0	49	16
Average	79	53.5	27	0	60	13
6 Row Barley						
Colter	77	50.7	28	0	53	16
Excel	80	51.8	31	0	59	13
Legacy	75	51.1	31	0	56	16
Morex	69	51.5	32	0	64	10
Steptoe	78	50.8	30	0	83	5
Tradition	74	53.6	31	0	72	6
Average	75	51.6	30	0	65	11
Overall Average	78	53.0	28	0	61	13
LSD (0.10)	5	0.8	1	0	7	4
CV (%)	5	1.3	4	0	10	28

Table 19. Spring barley variety performance results at Moscow direct seed, 2007.

Variety or Selection	Seed Yield	Test Weight	Plant Height	Lodging	Plumps >6/64	Thins <5.5/64
	bu/acre	lb/bu	inches	%	%	%
2 Row Barley						
Baronesse	98	51.3	31	0	70	5
Bear (hulless)	88	57.1	34	0	30	31
Bob	100	53.4	32	0	83	2
Boulder	95	54.7	31	0	86	2
Burton	93	52.8	33	0	89	1
Camas	96	54.4	34	0	80	3
Champion	104	54.3	32	0	69	4
Conrad	92	51.1	31	0	89	2
Criton	90	51.3	32	0	92	1
Harrington	92	52.1	33	0	74	5
Lenetah	101	53.7	32	0	88	1
Merit	91	49.6	33	0	81	5
Meresse (hulless)	70	59.0	29	0	32	13
AC Metcalfe	92	52.0	35	0	87	2
Spaulding	100	56.2	31	0	87	2
98Ab11720	100	52.3	31	0	72	6
2B99-2316	91	50.1	30	0	76	5
2B99-2657	93	49.9	31	0	83	4
01AH2812	69	58.7	31	0	57	7
Average	92	53.4	32	0	75	5
6 Row Barley						
Colter	92	50.5	36	0	51	10
Excel	94	50.1	38	3	55	7
Legacy	93	50.5	38	3	56	7
Morex	87	50.8	43	33	56	6
Steptoe	97	48.3	35	3	79	5
Tradition	91	52.1	39	0	72	3
Average	92	50.4	38	7	62	6
Overall Average	92	52.6	33	2	72	6
LSD (0.10)	5	0.6	2	3	5	2
CV (%)	5	1.0	5	175	5	30

Table 20. Spring barley variety performance results at Bonners Ferry, 2007.

Variety or Selection	Seed Yield	Test Weight	Plant Height	Lodging	Plumps >6/64	Thins <5.5/64
	bu/acre	lb/bu	inches	%	%	%
2 Row Barley						
Baronesse	79	48.6	23	0	95	1
Bear	63	49.0	26	1	50	16
Bob	72	48.9	23	0	92	2
Boulder	84	49.8	23	0	93	1
Burton	76	48.3	25	0	91	1
Camas	73	48.2	23	0	80	4
Champion	89	49.6	23	0	88	1
Conrad	68	48.0	21	0	94	2
Criton	76	47.6	25	1	93	2
Harrington	79	47.4	25	0	72	6
Merit	83	47.6	25	0	90	2
Meresse (hulless)	43	50.3	19	0	41	13
AC Metcalfe	71	48.9	24	0	93	2
Spaulding	73	50.4	22	0	90	3
98Ab11720	80	48.6	22	0	92	2
2B99-2316	87	48.2	25	1	85	3
2B99-2657	83	47.0	26	0	88	2
01AH2812	49	51.4	23	0	72	6
Radiant	82	48.1	23	0	89	2
Average	74	48.7	23	0	84	4
6 Row Barley						
Colter	75	46.6	23	0	70	7
Excel	59	46.9	23	1	67	5
Legacy	56	48.0	24	2	71	4
Morex	55	47.4	25	3	67	6
Steptoe	76	47.3	23	1	92	2
Tradition	69	48.3	25	0	79	3
Average	65	47.4	24	1	75	5
Overall Average	72	48.4	24	<1	81	4
LSD (0.10)	8	0.9	2	<1	4	1
CV (%)	10	1.6	7	84	5	30

Table 21. Combined spring barley performance data for Greencreek, Genesee, Moscow and Bonners Ferry, 2007.

Variety or Selection	Seed Yield					Average of 4 sites				
	Greenck.	Genesee	Moscow	B. Ferry	Average	Test Weight	Plant Height	Lodging	Plumps >6/64	Thins <5.5/64
	----------bu/acre----------					lb/bu	inches	%	%	%
2 Row Barley										
Baronesse	39	80	98	79	74	48.2	26	0	58	22
Bear (hulless)	37	69	88	63	64	51.4	28	1	29	37
Bob	47	84	100	72	75	49.8	28	1	65	16
Boulder	42	82	95	84	76	50.4	27	0	67	17
Burton	42	80	93	76	73	48.5	29	0	64	16
Camas	47	84	96	73	75	50.4	28	0	59	22
Champion	55	92	104	89	85	51.0	28	0	60	19
Conrad	41	77	92	68	69	48.1	26	0	66	15
Criton	45	85	90	76	74	48.3	28	1	70	14
Harrington	40	74	92	79	71	48.1	28	0	48	26
Lenetah*	51	-	101	-	76	48.3	30	1	49	30
Merit	32	74	91	83	70	46.8	27	0	59	17
Meresse (hulless)	38	70	70	43	55	52.7	25	0	31	30
AC Metcalfe	38	79	92	71	70	48.8	28	0	68	15
Spaulding	46	85	100	73	76	51.0	27	0	62	24
98Ab11720	43	83	100	80	77	48.7	26	0	55	25
2B99-2316	41	81	91	87	75	47.4	27	0	59	17
2B99-2657	34	78	93	83	72	46.4	28	0	64	14
01AH2812	36	58	69	49	53	53.5	27	1	53	18
Radiant*	--	83	--	82	83	50.4	25	0	69	9
Average	42	79	92	74	72	49.4	27	0	58	20
6 Row Barley										
Colter	40	77	92	75	71	46.8	29	1	46	25
Excel	40	80	94	59	68	46.6	31	2	47	25
Legacy	37	75	93	56	65	46.7	30	2	48	24
Morex	42	69	87	55	63	47.5	33	11	48	24
Steptoe	46	78	97	76	74	46.2	29	4	66	16
Tradition	43	74	91	69	69	48.8	31	2	58	20
Average	41	75	92	65	68	47.1	31	4	52	22
Overall Average	42	78	92	72	71	48.8	28	1	56	21
LSD (0.10)	5	5	5	8	3	0.5	1	1	3	2
CV (%)	9	5	5	10	--	--	--	--	--	--

* Lenetah and Radiant varieties planted in two of four locations

Table 22. Grain yield averages for spring barley varieties tested for three years in northern Idaho.

Variety or Selection	2005	2006	2007	Average
	----------bu/acre----------			
2 Row Barley				
Baronesse	78	100	74	84
Bear (hulless)	59	83	64	69
Bob	69	94	75	79
Boulder	78	100	76	
Burton	70	94	73	79
Camas	69	102	75	82
Conrad	78	97	69	
Criton	71	101	74	82
Harrington	67	92	71	77
Merit	71	97	70	79
AC Metcalfe	70	96	70	79
Average	71	96	72	80
6 Row Barley				
Colter	68	104	71	81
Excel	66	93	68	76
Legacy	66	96	65	76
Morex	59	83	63	68
Steptoe	77	99	74	83
Tradition	72	97	69	79
Average	68	95	68	77
Overall Average	70	96	71	79
LSD (0.10)	4	4	3	--

Table 23. Spring hulless barley variety performance results at Craigmont, 2007.

Variety or Selection	Seed Yield	Test Weight	Plant Height	Lodging
	bu/acre	lb/bu	inches	%
Baronesse	43	41.0	26	1
Camas	53	46.0	29	0
Bear*	38	46.6	28	2
Harrington	44	43.5	28	0
Meresse*	43	44.3	25	0
AC Metcalfe	40	43.3	29	0
CDC Fibar*	34	44.7	29	3
CDC Alamo*	36	48.2	27	0
00AH6155*	33	48.3	25	3
01AH2812*	42	45.6	26	4
Clearwater*+	39	45.8	28	7
99Ab38-5*	31	47.4	27	0
99Ab38-6*	30	45.7	28	0
WestBred Salute	44	41.7	25	0
Yu 501-039*	38	40.8	26	4
03AH3052*	29	51.9	28	0
03AH3058*	32	52.7	29	0
03AH5618	38	47.6	29	6
02AH684*	38	44.7	27	2
00ID1550	46	39.2	32	3
Yu 501-385	45	40.0	29	0
Excel	43	38.9	30	5
Tradition	47	42.3	30	6
Yu 599-006	38	38.1	18	0
96M5288*	28	42.2	28	2
Average	39	44.4	27	2
LSD (0.10)	5	1.6	2	4
CV (%)	11	3.1	5	189

* hulless lines
+ Previously known as 01ID435H

Table 24. Grain yield and test weight averages for spring hulless barley varieties tested for two years on the Camas Prairie, Idaho.

Variety or Selection	Seed Yield			Test Weight		
	2006	2007	Average	2006	2007	Average
	----------bu/acre----------			----------lb/bu----------		
Baronesse	120	43	82	54.1	41.0	47.6
Camas	109	53	81	55.0	46.0	50.5
Bear*	103	38	71	58.9	46.6	52.7
Harrington	105	44	74	53.1	43.5	48.3
Meresse*	90	43	66	61.2	44.3	52.8
AC Metcalfe	108	40	74	54.3	43.3	48.8
CDC Fibar*	77	34	56	60.3	44.7	52.5
CDC Alamo*	76	36	56	58.9	48.2	53.5
Clearwater*	92	39	65	59.4	45.8	52.6
00AH6155*	76	33	54	60.3	48.3	54.3
01AH2812*	85	42	64	60.2	45.6	52.9
99Ab38-5*	74	31	52	58.5	47.4	52.9
99Ab38-6*	78	30	54	58.2	45.7	52.0
WestBred Salute	111	44	77	53.4	41.7	47.5
Yu 501-039*	101	38	70	61.2	40.8	51.0
03AH3052*	64	29	46	60.4	51.9	56.2
03AH3058*	67	32	50	60.4	52.7	56.6
03AH5618	82	38	60	59.1	47.6	53.4
02AH684*	76	38	57	59.4	44.7	52.0
00ID1550	129	46	87	50.5	39.2	44.9
Yu 501-385	104	45	75	54.5	40.0	47.3
Excel	112	43	78	51.8	38.9	45.3
Tradition	113	47	80	52.1	42.3	47.2
Yu 599-006	111	38	75	50.6	38.1	44.3
96M5288*	110	28	69	60.4	42.2	51.3
Overall Average	95	39	67	57.1	44.4	50.8
LSD (0.10)	9	5	5	0.6	1.6	0.8
CV (%)	8	11	9	0.9	3.1	2.0

* hulless lines

\+ Previously known as 01ID435H

Table 25. Grain yield and test weight averages for spring hulless barley varieties tested for two years in Genesee, Idaho.

Variety or Selection	Seed Yield			Test Weight		
	2005	2006	Average	2005	2006	Average
	----------bu/acre----------			----------lb/bu----------		
Baronesse	77	113	95	50.0	53.6	51.8
Camas	78	111	95	53.5	56.3	54.9
Bear*	63	101	82	54.6	59.4	57.0
Harrington	69	105	87	48.1	52.8	50.5
Meresse*	69	90	80	60.6	62.1	61.4
AC Metcalfe	73	110	92	49.7	54.6	52.2
CDC Fibar*	56	78	67	54.7	61.2	58.0
CDC Alamo*	61	65	63	58.1	60.1	59.1
00AH6155*	66	70	68	57.4	60.4	58.9
01AH2812*	61	79	70	60.1	61.3	60.7
Clearwater*+	61	86	74	56.8	61.2	59.0
99Ab38-5*	60	73	67	56.7	60.5	58.6
99Ab38-6*	59	74	67	56.0	60.6	58.3
WestBred Salute	74	104	89	50.7	54.1	52.4
Yu 501-039*	67	88	78	55.0	60.8	57.9
03AH3052*	61	60	61	58.7	60.9	59.8
03AH3058*	62	70	66	58.2	60.9	59.6
03AH5618	65	76	71	56.3	60.3	58.3
02AH684*	61	73	67	57.0	60.4	58.7
00ID1550	68	114	91	45.1	50.9	48.0
Yu 501-385	70	101	86	44.7	54.0	49.4
Excel	75	105	90	46.4	52.8	49.6
Tradition	79	108	94	50.2	54.6	52.4
Yu 599-006	61	87	74	45.3	51.1	48.2
96M5288*	63	95	79	52.1	61.9	57.0
Overall Average	66	89	78	53.4	57.9	55.7
LSD (0.10)	4	7	--	1.6	0.5	--
CV (%)	5	7	--	2.5	0.8	--

* hulless lines

\+ Previously known as 01ID435H

Table 26. Green dry pea variety performance results at Nezperce, 2007.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Aragorn	1010	15.7	22	22	1.0
Ariel	900	13.4	19	20	1.0
Banner**	980	11.8	26	25	1.0
Camry	670	15.6	14	14	1.0
Columbian	980	13.6	27	14	0.5
Cooper	650	20.6	19	19	1.0
Cruiser	870	15.6	23	22	1.0
Joel	1030	14.8	33	15	0.5
Karita	770	16.3	22	21	1.0
K2	750	15.1	23	21	0.9
Medora	760	15.9	25	24	1.0
Monarch	1180	13.8	19	18	1.0
Pacifica	940	15.9	22	21	1.0
Stirling	920	14.0	16	16	1.0
Stirling NST+	960	14.3	16	16	1.0
PS03101340	1040	18.4	25	23	0.9
PS02100107	800	14.9	19	19	1.0
PS03101459	880	15.0	23	22	1.0
PS03101445	950	14.1	22	21	1.0
Pro 031-6229	840	13.1	20	20	1.0
Pro 041-7109	800	12.2	22	20	0.9
Average	890	15.0	22	20	0.9
LSD (0.10)	142	1.4	3	2	0.1
CV (%)	13	7.8	11	20	6.2

* means canopy height/vine length; 1.0=upright

** previously known as Pro 031-7053

\+ no seed treatment

Table 27. Yellow dry pea variety performance results at Nezperce, 2007.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Carousel	740	16.6	24	23	1.0
Delta	940	14.3	19	19	1.0
Rex	950	15.2	21	21	1.0
Rex NST+	1140	16.4	21	21	1.0
Shawnee	1020	15.3	30	13	0.4
Topeka	920	15.6	20	16	1.0
Universal	1160	15.1	22	22	1.0
PS0010836	700	17.1	16	16	1.0
Pro 053-7072	880	15.6	25	25	1.0
Average	940	15.2	22	20	0.9
LSD (0.10)	142	1.4	3	2	0.1
CV (%)	13	7.8	11	7	6.2

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

Table 28. Green dry pea variety performance results at Moscow, 2007.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Aragorn	2410	18.5	29	27	1.0
Ariel	2280	16.2	28	26	0.9
Banner**	2810	17.8	30	28	1.0
Camry	2410	21.5	19	18	1.0
Columbian	2430	17.5	41	17	0.4
Cooper	2250	22.9	25	25	1.0
Cruiser	2300	18.1	28	27	0.9
Joel	2440	18.3	41	16	0.4
Karita	2450	22.4	25	25	0.1
K2	2340	18.1	26	25	1.0
Medora	2310	18.8	31	30	0.9
Monarch	2680	17.0	22	20	0.9
Pacifica	2360	20.4	30	28	1.0
Stirling	2380	18.1	19	18	1.0
Stirling NST+	2370	17.9	22	19	0.9
PS03101340	2750	22.4	30	26	0.9
PS02100107	2050	18.7	23	21	0.9
PS03101459	2210	19.0	28	25	0.9
PS03101445	2680	18.3	26	24	1.0
Pro 031-6229	2280	15.9	26	24	0.9
Pro 041-7109	2200	16.4	25	24	1.0
Average	2400	18.8	27	23	0.9
LSD (0.10)	143	0.6	3	2	0.1
CV (%)	5	2.5	10	8	8.4

* means canopy height/vine length; 1.0=upright

** previously known as Pro 031-7053

\+ no seed treatment

Table 29. Yellow dry pea variety performance results at Moscow, 2007.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Carousel	2450	21.5	27	27	1.0
Delta	2290	19.5	22	21	1.0
Rex	2710	22.7	24	24	1.0
Rex NST+	2680	23.0	26	24	0.9
Shawnee	2300	19.2	34	13	0.4
Topeka	2580	20.4	21	19	0.9
Universal	2700	19.6	27	26	1.0
PS0010836	2510	21.6	20	18	0.9
Pro 053-7072	2590	22.9	28	27	1.0
Average	2530	21.2	25	22	0.9
LSD (0.10)	143	0.6	3	2	0.1
CV (%)	5	2.5	10	8	8.4

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

Table 30. Combined green dry pea variety performance data for Nezperce and Moscow, 2007.

Variety or Selection	Seed Yield			Seed Weight			Average of 2 sites	
	Nezperce	Moscow	Average	Nezperce	Moscow	Average	Vine Length	Canopy Height
	----------lb/acre----------			----------g/100----------			inches	inches
Aragorn	1010	2410	1710	15.7	18.5	17.1	25	24
Ariel	900	2280	1590	13.4	16.2	14.8	24	23
Banner**	980	2810	1900	11.8	17.8	14.8	28	27
Camry	670	2410	1540	15.6	21.5	18.6	16	16
Columbian	980	2430	1710	13.6	17.5	15.5	34	15
Cooper	650	2250	1450	20.6	22.9	21.7	22	22
Cruiser	870	2300	1580	15.6	18.1	16.8	26	24
Joel	1030	2440	1740	14.8	18.3	16.6	37	15
Karita	770	2450	1610	16.3	22.4	19.3	23	23
K2	750	2340	1550	15.1	18.1	16.6	24	23
Medora	760	2310	1540	15.9	18.8	17.3	28	27
Monarch	1180	2680	1930	13.8	17.0	15.4	20	19
Pacifica	940	2360	1650	15.9	20.4	18.2	26	25
Stirling	920	2380	1650	14.0	18.1	16.1	17	17
Stirling NST+	960	2370	1670	14.3	17.9	16.1	19	18
PS03101340	1040	2750	1900	18.4	22.4	20.4	27	24
PS02100107	800	2050	1430	14.9	18.7	16.8	21	20
PS03101459	880	2210	1550	15.0	19.0	17.0	25	24
PS03101445	950	2680	1820	14.1	18.3	16.2	24	23
Pro 031-6229	840	2280	1560	13.1	15.9	14.5	23	22
Pro 041-7109	800	2200	1500	12.2	16.4	14.3	23	22
Average	890	2520	1650	15.0	18.8	16.9	24	22
LSD (0.10)	142	143	101	1.4	0.6	0.7	2	1
CV (%)	13	5	--	7.8	2.5	--	--	--

** previously known as Pro 031-7053
+ no seed treatment

Table 31. Combined yellow dry pea variety performance data for Nezperce and Moscow, 2007.

Variety or Selection	Seed Yield			Seed Weight			Average of 2 sites	
	Nezperce	Moscow	Average	Nezperce	Moscow	Average	Vine Length	Canopy Height
	----------lb/acre----------			----------g/100----------			inches	inches
Carousel	740	2450	1600	16.6	21.5	19.0	26	25
Delta	940	2290	1620	14.3	19.5	16.9	21	20
Rex	950	2710	1830	15.2	22.7	18.9	22	22
Rex NST+	1140	2680	1910	16.4	23.0	19.7	24	22
Shawnee	1020	2300	1660	15.3	19.2	17.3	32	13
Topeka	920	2580	1750	15.6	20.4	18.0	20	18
Universal	1160	2700	1930	15.1	19.6	17.3	24	24
PS0010836	700	2510	1600	17.1	21.6	19.3	18	17
Pro 053-7072	880	2590	1740	15.6	22.9	19.3	26	26
Average	940	2530	1740	15.2	21.2	18.4	24	21
LSD (0.10)	142	143	101	1.4	0.6	0.7	2	0.1
CV (%)	13	5	--	7.8	2.5	--	--	--

+ no seed treatment

Table 32. Seed yield averages for green and yellow dry pea varieties tested for three years in northern Idaho.

Variety or Selection	2005	2006	2007	Average
		----------lb/acre----------		
Green pea				
Aragorn	1990	2130	1710	1940
Ariel	1900	2040	1590	1840
Banner**	2050	2100	1900	2020
Camry	1985	1940	1540	1820
Columbian	1610	1710	1710	1680
Cooper	1875	1550	1450	1630
Cruiser	1790	2020	1580	1800
Joel	1770	1930	1740	1810
Karita	1875	2210	1610	1900
K2	1940	2060	1550	1850
Monarch	2245	1970	1930	2050
Pacifica	1945	2230	1650	1940
Stirling	2050	2180	1650	1960
Average	1930	2010	1660	1870
LSD (0.10)	90	135	101	--
Yellow pea				
Carousel	1900	2120	1600	1870
Delta	2100	2240	1620	1990
Rex	2100	2280	1830	2070
Shawnee	1720	2130	1660	1840
Topeka	2220	2250	1750	2070
Universal	2140	2410	1930	2160
PS0010836	2100	2100	1610	1940
Average	2040	2220	1710	1990
LSD (0.10)	90	135	101	--

** previously known as Pro 031-7053

Table 33. Lentil variety performance results at Nezperce and Moscow, 2007.

Variety or	Seed Yield			Seed Weight			Plant Height		
Selection	Nezperce	Moscow	Average	Nezperce	Moscow	Average	Nezperce	Moscow	Average
	----------lb/acre----------			----------g/100----------			----------inches----------		
Brewer	630	1645	1140	4.4	4.8	4.6	11	12	12
Crimson	740	1710	1225	2.7	2.9	2.8	10	11	11
Eston	770	1785	1280	2.6	2.9	2.8	10	13	12
Merrit	685	1780	1235	5.2	5.4	5.3	11	13	12
Pardina	860	1795	1330	2.9	3.2	3.1	9	11	10
Richlea	745	1900	1325	4.4	4.7	4.6	11	11	11
Riveland	665	1760	1215	5.9	6.5	6.2	12	14	13
LC01602300R	920	2010	1465	4.3	4.4	4.4	12	13	13
LC03601590E	810	1760	1285	3.0	3.1	3.1	10	12	11
LC01602307E	605	1980	1295	3.7	4.2	4.0	11	11	11
LC01602273E	785	1885	1335	2.8	2.8	2.8	11	12	12
LC01602062T	715	2170	1445	3.6	4.0	3.8	10	12	11
LC03600482T	850	1580	1215	2.8	2.8	2.8	10	12	11
LC02601144P	785	1835	1310	3.0	3.2	3.1	11	13	12
LC04600751T	835	1670	1255	2.6	2.7	2.7	9	12	11
LC04600350P	775	1810	1295	3.2	3.7	3.5	9	11	10
Average	760	1815	1290	3.6	3.8	3.7	11	12	12
LSD (0.10)	95	105	70	0.2	0.1	0.1	1	1	1
CV (%)	10	5	--	5.0	3.0	--	8	6	--

Table 34. Chickpea variety performance results at Moscow, 2007.

Variety or Selection	Seed Yield	Seed Weight	Plant Height
	lb/acre	g/100	inches
Dwelley	1000	46.9	16
Dylan	1650	52.1	14
Myles	1690	19.1	15
Sierra	1460	48.8	16
Spanish White	1530	53.1	14
Troy	1315	41.4	13
CA0090B347C	1725	44.5	17
CA0469C020C	1810	39.3	16
Average	1525	43.1	15
LSD (0.10)	140	4.7	1
CV (%)	8	8.9	7

Table 35. Seed yield averages for lentil and chickpea varieties tested for three years in northern Idaho.

Variety or Selection	2005	2006	2007	Average
	----------lb/acre----------			
Lentil				
Brewer	1490	1230	1140	1287
Crimson	1350	1210	1225	1262
Eston	1390	1170	1280	1280
Merrit	1450	1300	1235	1328
Pardina	1530	1230	1330	1363
Richlea	1320	1310	1325	1318
Riveland	1280	1400	1215	1298
LC1602307E	1370	1380	1295	1348
LC1602062T	1510	1280	1445	1412
Average	1410	1280	1280	1323
LSD (0.10)	90	119	70	--
Chickpea				
Dwelley	220	1410	1000	875
Dylan	530	1620	1650	1265
Myles	800	1700	1690	1395
Sierra	480	1530	1460	1155
Spanish White	640	970	1530	1045
Troy	360	1270	1315	980
CA0090B347C	830	1830	1725	1460
Average	551	1415	1440	1135
LSD (0.10)	70	191	140	--

Table 36. No-till dry pea variety performance results at Genesee, 2007.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Aragorn	1990	19.2	23	23	1.0
Camry	1550	22.2	15	16	1.0
Columbian	1840	17.3	29	15	0.5
Cooper	820	23.9	23	23	1.0
Cruiser	1860	18.6	25	24	1.0
Joel	2040	18.5	30	14	0.4
Karita	2010	23.4	23	22	1.0
K2	2030	18.7	25	24	1.0
Monarch	2150	19.0	18	16	0.9
Pacifica	1970	20.8	26	23	0.9
Pacifica NST+	1540	19.9	24	22	0.9
Stirling	1730	18.6	19	17	0.9
Stirling NST+	1640	18.3	20	17	0.9
Banner**	2330	18.5	24	23	1.0
Carousel	2070	22.5	27	24	0.9
Rex	1980	22.9	26	20	0.8
Rex NST+	1760	23.8	23	18	0.8
Shawnee	2150	20.2	28	12	0.5
Topeka	1970	21.7	17	17	1.0
Universal	2340	19.6	25	23	0.9
Average	1890	20.0	23	20	0.9
LSD (0.10)	240	0.9	4	2	0.1
CV (%)	11	3.6	13	9	10.0

* means canopy height/vine length; 1.0=upright
** previously known as Pro 031-7053
+ no seed treatment

Table 37. No-till dry pea variety performance results at Moscow, 2007.

Variety or Selection	Seed Yield	Seed Weight	Vine Length	Canopy Height	Erect Index*
	lb/acre	g/100	inches	inches	0.0-1.0
Aragorn	2160	18.6	29	29	1.0
Camry	2620	21.6	23	24	1.0
Columbian	1910	17.1	44	17	0.4
Cooper	2440	25.9	28	29	1.0
Cruiser	2190	17.8	29	27	1.0
Joel	1870	19.6	38	14	0.4
Karita	2240	23.2	30	28	0.9
K2	2200	18.7	28	28	1.0
Monarch	2240	17.2	24	23	1.0
Pacifica	2310	20.6	32	28	0.9
Pacifica NST+	2170	20.8	31	28	0.9
Stirling	2330	19.1	22	22	1.0
Stirling NST+	2260	18.9	23	21	0.9
Banner**	2210	17.2	31	29	1.0
Carousel	2340	22.3	33	30	0.9
Rex	2330	22.0	29	18	0.7
Rex NST+	2350	22.5	24	23	1.0
Shawnee	1860	19.3	37	11	0.3
Topeka	2680	19.6	24	23	1.0
Universal	2490	19.2	31	30	1.0
Average	2260	20.1	29	24	0.9
LSD (0.10)	201	0.7	4	4	0.1
CV (%)	7	3.1	12	13	11.3

* means canopy height/vine length; 1.0=upright
** previously known as Pro 031-7053
+ no seed treatment

Table 38. Combined no-till dry pea variety performance data for Genesee and Moscow, 2007.

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	1990	2160	2080	19.2	18.6	18.9	26	26	1.0
Camry	1550	2620	2090	22.2	21.6	21.9	19	20	1.0
Columbian	1840	1910	1880	17.3	17.1	17.2	36	16	0.4
Cooper	820	2440	1630	23.9	25.9	24.9	25	26	1.0
Cruiser	1860	2190	2030	18.6	17.8	18.2	27	25	1.0
Joel	2040	1870	1960	18.5	19.6	19.0	34	14	0.4
Karita	2010	2240	2130	23.4	23.2	23.3	26	25	1.0
K2	2030	2200	2120	18.7	18.7	18.7	27	26	1.0
Monarch	2150	2240	2200	19.0	17.2	18.1	21	19	0.9
Pacifica	1970	2310	2140	20.8	20.6	20.7	29	25	0.9
Pacifica NST+	1540	2170	1860	19.9	20.8	20.4	28	25	0.9
Stirling	1730	2330	2030	18.6	19.1	18.8	21	20	0.9
Stirling NST+	1640	2260	1950	18.3	18.9	18.6	21	19	0.9
Banner**	2330	2210	2270	18.5	17.2	17.9	28	26	1.0
Carousel	2070	2340	2210	22.5	22.3	22.4	30	27	0.9
Rex	1980	2330	2160	22.9	22.0	22.4	27	19	0.7
Rex NST+	1760	2350	2060	23.8	22.5	23.1	23	21	0.9
Shawnee	2150	1860	2010	20.2	19.3	19.8	32	12	0.4
Topeka	1970	2680	2330	21.7	19.6	20.6	20	20	1.0
Universal	2340	2490	2420	19.6	19.2	19.4	28	27	0.9
Average	1890	2260	2080	20.4	20.1	20.2	26	22	0.9
LSD (0.10)	240	201	156	0.9	0.7	0.6	3	2	0.1
CV (%)	11	7	--	3.6	3.1	--	--	--	--

* means canopy height/vine length; 1.0=upright

** previously known as Pro 031-7053

\+ no seed treatment

Table 39. 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			
	2005	2006	2007	Average	2005	2006	2007	Average
	----------lb/acre----------				----------g/100----------			
Camry	2480	1390	2090	1990	16.0	21.5	21.9	19.8
Columbian	1560	1660	1880	1700	18.7	18.0	17.2	18.0
Cooper	2290	1390	1630	1770	23.1	24.2	24.9	24.1
Cruiser	2000	1470	2030	1830	17.9	18.5	18.2	18.2
Joel	1780	1690	1960	1810	19.7	20.1	19.0	19.6
Karita	2150	1470	2130	1920	22.8	23.7	23.3	23.3
K2	1990	1500	2110	1870	18.5	19.8	18.7	19.0
Monarch	2230	1790	2200	2070	18.6	18.0	18.1	18.2
Stirling	2030	1530	2030	1860	18.9	18.6	18.8	18.8
Carousel	2075	1490	2210	1930	20.8	22.4	22.4	21.9
Rex	1900	1590	2160	1880	21.6	21.7	22.4	21.9
Shawnee	1720	1600	2010	1780	19.8	19.6	19.8	19.7
Topeka	2310	1740	2330	2130	21.0	20.4	20.6	20.7
Average	2000	1560	2060	1890	19.8	20.5	20.4	20.2
LSD (0.10)	160	117	156	-	0.5	0.8	0.6	-

Table 40. No-till lentil variety performance results at Genesee and Moscow, 2007.

Variety or Selection	Seed Yield			Seed Weight			Plant Height		
	Genesee	Moscow	Average	Genesee	Moscow	Average	Genesee	Moscow	Average
	----------lb/acre----------			----------g/100----------			----------inches----------		
Brewer	1220	1335	1280	5.5	5.5	5.5	12	13	13
Eston	1115	1305	1210	3.2	3.2	3.2	13	13	13
Merrit	1190	1465	1330	6.1	5.9	6.0	14	13	14
Pardina	1270	1300	1285	3.9	3.4	3.7	11	11	11
Richlea	1415	1405	1410	4.8	5.1	5.0	14	13	14
Riveland	1245	1500	1375	6.8	7.2	7.0	15	15	15
Average	1240	1385	1315	5.1	5.1	5.1	13	13	13
LSD (0.10)	136	NS	--	0.2	0.2	0.2	1	1	1
CV (%)	9	10	--	3	3	--	9	7	--

NS - no significant differences

Table 41. Seed yield and seed weight for no-till lentil varieties tested for three years in northern Idaho.

Variety or Selection	Seed Yield				Seed Weight			
	2005	2006	2007	Average	2005	2006	2007	Average
	----------lb/acre----------				----------g/100----------			
Brewer	1170	680	1280	1045	5.4	5.0	5.5	5.3
Eston	1040	790	1210	1015	3.1	3.0	3.2	3.1
Merrit	1220	790	1330	1115	5.9	5.5	6.0	5.8
Pardina	1440	920	1285	1215	3.8	3.3	3.7	3.6
Richlea	1280	850	1410	1170	4.6	4.7	5.0	4.8
Average	1260	730	1315	1100	4.8	4.6	5.1	4.8
LSD (0.10)	220	117	NS	--	0.1	0.2	0.2	--

NS - no significant differences

Table 42. Performance of dry pea varieties under replicated conventional-till (CT) and no-till (NT) Management near Genesee, ID, 2007.

	Seed Yield		Seed Weight		Plant Stand		Vine Length		Canopy Ht.	
	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till
Variety	----lbs/acre----		----g/100----		Plants/sq.ft.		---inches---		---inches---	
Green Pea										
Aaragorn	2265	2080	19.2	18.5	11.2	11.2	24	24	24	24
Camry	2275	2310	21.0	21.0	10.5	10.4	19	19	19	19
Columbian	2070	2020	17.4	18.5	10.1	10.6	29	34	17	17
Joel	2260	2020 *	19.0	18.8	9.4	10.6	36	37	19	19
Karita	2300	1950 *	22.6	22.9	10.6	11.1	23	23	23	23
Monarch	2430	2090 *	17.3	17.6	9.3	10.3	18	18	18	18
Stirling	2130	1885 *	17.5	17.4	12.1	12.2	18	18	18	18
Stratus	2240	2110	21.5	22.0	10.3	9.3	19	20	19	20
Stratus NST+	2145	1855 *	21.5	21.8	8.1	7.3	19	18	19	18
Yellow Pea										
Carousel	2370	2170	21.1	20.8	10.9	10.4	28	24	28	24
Rex	2515	2140 *	22.5	22.8	8.8	8.5	23	24	20	20
Shawnee	2175	1850	18.9	18.7	11.2	10.8	34	32	12	12
Average	2280	2040	19.9	20.0	10.2	10.2	24	24	19	19
LSD (0.05)	230	230	0.7	0.7	1.5	1.5	3	3	2	2
CV	11	11	3.5	3.5	14	14	14	14	12	12

* NT values different from CT at *P=0.05*
+ no seed treatment

Table 43. Seed yield averages for dry pea varieties tested for three years under replicated conventional-till (CT) and no-till (NT) management near Genesee, ID

	2005		2006		2007		2005-2007	
	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till
Variety								
Green Pea	---------- lb/acre ----------							
Columbian	1330	1100	1070	1260	2070	2020	1490	1460
Joel	1470	1690	1490	1410	2260	2020 *	1740	1710
Karita	1180	1460	1420	1370	2300	1950 *	1630	1595
Monarch	1430	1810 *	870	1100 *	2430	2090 *	1575	1665
Stirling	1140	1270	970	1030	2130	1885 *	1415	1395
Stratus	1570	1760	1330	1450	2240	2110	1715	1775
Yellow Pea								
Rex	1430	1490	1270	1510 *	2515	2140 *	1740	1715
Shawnee	1210	1510 *	1440	1470	2175	1850	1610	1610
Average	1345	1510	1235	1325	2265	2010	1615	1615
LSD (0.05)	290	290	230	230	230	230	150	150

* NT values different from CT at *P=0.05*

Table 44. Performance of lentil varieties under replicated conventional-till (CT) and no-till (NT) management near Genesee, 2007.

	Seed Yield		Seed Weight		Plant Stand		Plant Height	
	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till
Variety								
	----lbs/acre----		----g/100----		Plants/sq.ft.		---inches---	
Brewer	1265	1335	5.0	5.3 *	10.9	12.3	13.5	12.5
Eston	1170	1440 *	3.0	3.2	12.8	15.2	13.5	13.3
Merrit	1490	1440	5.5	5.8 *	11.3	13.4	13.3	13.0
Pardina	1460	1375	3.3	3.5	11.1	13.7	11.5	11.5
Pennell	1020	1085	6.4	6.7 *	12.9	15.3	15.5	14.5
Richlea	1365	1570 *	4.7	5.1 *	12.4	13.3	15.3	15.0
Average	1295	1375	4.6	4.9 *	11.9	13.9	13.8	13.3
LSD (0.05)	170	170	0.2	0.2	NS	NS	1.2	1.2
CV	12	12	2.4	2.4	16	16	8.9	8.9

* NT values different from CT at *P=0.05*
NS - no significant difference

Table 45. Seed yield averages for lentil varieties tested for three years under replicated conventional-till (CT) and no-till (NT) management near Genesee, ID.

	2005		2006		2007		2005-2007	
Variety	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till	Conv-Till	No-Till
	lb/acre							
Brewer	1370	1630 *	530	600	1265	1335	1055	1190 *
Eston	1090	1140	520	670 *	1170	1440 *	925	1085 *
Merrit	1440	1330	510	660 *	1490	1440	1145	1145
Pardina	1450	1460	590	650	1460	1375	1165	1160
Pennell	1210	1210	330	570 *	1020	1085	855	955 *
Richlea	1310	1200	580	720 *	1365	1570 *	1085	1165
Average	1310	1330	510	650 *	1295	1375	1040	1115
LSD (0.05)	150	150	120	120	170	170	80	80

* NT values different from CT at *P=0.05*