

2011 Statewide Spring Pulse Variety Evaluations
Experiments #: 80, 81, 85, 86, & 89

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OBJECTIVES: The objectives of these trials were to evaluate spring dry pea, lentil, and chickpea commercial varieties and experimental lines for grain production potential in the diverse Montana environments.

METHODS: Three trials were established to evaluate spring pea, lentil and chickpeas varieties. The trials were conducted at seven Montana State University Agricultural Research Centers across Montana and in cooperating producers' fields near Amsterdam, Broadview, Richland and Joplin, Montana (**Table 1**).

The trials were organized and packaged at CARC in Moccasin, then shipped to each individual testing site. All seed in the trial was pre-treated with fludioxinil and mefenoxam fungicides (Apron MAXX® RTU, Syngenta Crop Protection, Inc) to protect against soil seed and seedling diseases, with the exception of Moccasin, where the seed was additionally treated with thiamethoxam insecticide (CruiserMAXX®, Syngenta Crop Protection, Inc) to control a heavy pea leaf weevil infestation. All seed was properly inoculated prior to seeding. Best management practices were employed using available resources at each site. Important management information, including but not limited to, seeding date, previous crop, season precipitation, etc., are presented in **Table 1**.

Dry pea entries (both commercial and experimental) for the 2011 Statewide Dry Pea Evaluation were tested at 11 locations (Bozeman, Broadview, Conrad, Corvallis, Creston, Havre, Huntley, Joplin, Moccasin, Richland, and Sidney), and advanced breeding lines as part of the 2011 Western Regional Trial from the USDA-ARS Grain Legume Genetics and Physiology Program and the North Dakota State University Pulse Crop Breeding Program were tested at three locations (Havre, Moccasin, and Richland). The 2011 dry pea variety evaluation consisted of 50 entries, of which 11 are commercially available smooth green, 17 are commercially available smooth yellow and remaining are experimental dry pea lines from public and private breeding programs (some of the entries were submitted by private companies on fee basis and tested at selected locations only, **Table 2**). Characteristics of the cultivars evaluated across Montana are listed in **Table 2**.

The 2011 Statewide Lentil Variety Evaluation was tested at 11 locations same as the spring dry pea trials, and the 2011 Western Regional Lentil Trial was tested at three locations (Havre, Moccasin, and Richland). The 2011 lentil variety evaluation contained 39 lentil entries. Among them, we had two commercially available small green, five commercially available medium green, three commercially available large green, five commercially available small red, two commercially available Spanish brown varieties, and two zero-tanin varieties. The rest of the entries are experimental lines from public and private breeding programs (some of the entries were submitted by private companies on fee basis and tested at selected locations only, **Table 3**).

The chickpea variety evaluation consisted of several commercial varieties and breeding lines from the USDA-ARS Grain Legume Genetics and Physiology Program, as well as some selections from Indian pulse breeding programs (**Table 4**). They were primarily tested at Conrad, Havre, Moccasin, and Richland.

RESULTS: Note: The following results and summary are for **informational purposes only**. Inclusion of any commercial variety in this summary does not constitute a recommendation by MSU-MAES or CARC.

Dry Pea Grain Yields varied among the testing sites with the Huntley irrigated site having the best grain production (4357.33 lbs acre⁻¹; **Table 5**). Conrad site had the best production among the dryland sites (2776.50 lbs acre⁻¹). Caution should be made in interpretation of data sets from Havre, Huntley (dryland) and Joplin sites. Huntley site received strong wind and hail during the pod-fill stage resulting in severe lodging and suppressed yields in the dryland. The irrigated site received less effect as the crops were at an earlier growth stage than those in the dryland site. Joplin site was affected by severe grasshopper damage resulting estimated 30 to 60% yield loss.

The smooth yellow peas had higher grain production than the smooth green pea varieties across all locations (statistics not shown). Similar trend was also observed in 2010 Montana Statewide Spring Pulse Variety Evaluations. The grain yields were not statistically different in many locations. Among the smooth yellow varieties, Bridger, Spider, PS03101822 appeared as the top yielding variety in more than

two locations, of which, Bridger appeared to be more consistent (**Table 5**); Bridger was the leading producer at six locations. Among the smooth green varieties, Arcadia and PS06100760 showed great yield potential at four locations, and the yield was similar to a few other leading producers at four locations (**Table 5**). Additionally, at Havre, Moccasin and Richland, the Western Regional Dry Pea Line evaluations were in conjunction with the Statewide Dry Pea Trials (**Tables 10, 11, & 12**). Experimental lines showed better grain production in most of the location compared with the commercial check varieties included in the trial.

Dry Pea Plant Heights varied among the locations, ranging from 34.4 (Moccasin) to 66.2 cm (Conrad; **Table 6**). Canopy heights at grain maturity were affected by severe hail at Huntley which may give insight to relative lodging tolerance. The variety's canopy height at grain maturity was not necessary indicative of yield potential as the variety with good yield potential (e.g. PS03101822) was one of the short varieties in some locations. Bridger, CDC Treasure, and DS Admiral were the tallest smooth yellow pea varieties at more than two locations. CDC Patrick, CDC Striker, and Medora were the tallest smooth green pea varieties at more than two locations (**Table 6**).

Dry Pea Test Weights was very similar among the locations except at the Corvallis site (75.5 lbs bu⁻¹; **Table 7**). Among the smooth yellow pea varieties, Spider, CDC Golden, and CDC Meadow had the highest test weight at multiple locations. Among the smooth green pea varieties, CDC Striker has the highest test weight at six of the nine locations evaluated.

Dry Pea Thousand Kernel Weight (TKW) was similar among the locations with a range of 204.6 to 224.9 g 1000 kernels⁻¹ (**Table 8**). Among the smooth yellow pea varieties, PS03101822 and Montech 4152 had the largest seed size at two to three of the six locations. Majoret was found to have good seed size among the smooth green pea varieties.

Dry Pea Flowering Dates varied by locations due to differences in seeding dates and environments observed at each site (**Table 9**). Of the smooth yellow pea varieties, PS03101822 and Montech 4152 appeared to be consistently the earliest to flower. Yellow wrinkled variety, B10-10, was the earliest to bloom at Moccasin, the only location reporting the variety's flowering date. Stirling green pea was found to flower first among all reporting sites (significant at all locations).

Lentil Grain Yields greatly differed from location to location, ranging from 657.4 (Joplin) to 2204.6 (Conrad) lbs acre⁻¹ (**Table 13**). Huntley and Joplin were adversely affected by severe hail and grasshopper, respectively, resulting in suppressed yields and difficulty on an interpretation. Additionally, the Western Regional Lentil Line Evaluations were in conjunction with the Statewide Lentil Trials at Havre, Moccasin, and Richland (see **Tables 18, 19, & 20**). Among the evaluated varieties, the small green Essex, the large green LC07600517L, and the medium green varieties CDC Meteor, CDC Richlea, CDC Vantage, and LC01602300R appeared to have consistently good yield potential across the state (**Table 9**). Essex had the greatest production at Conrad and Havre and similar to other top yielding varieties at four locations. CDC Meteor was the leading producer at Bozeman and was equal to other highest yielding varieties at three locations. CDC Richlea and LC07600517L were similar to other leading producers at four locations. CDC Vantage and LC01602300R were the top grain producers at two and statistically equivalent to other top yielders at three testing sites. Small green lentil experimental line LC08600005E showed the best yield potential in Western Regional Lentil Line evaluation at Moccasin and Richland and was statistically equivalent to the other top grain producers at Havre (**Table 18, 19, & 20**). The grain yields of Spanish brown lines were similar to other leading producers at Moccasin.

Lentil Plant Heights at grain maturity ranged from 18.4 (Creston) to 51.7 cm (Huntley, irrigated; **Table 14**). Canopy heights at grain maturity were affected by severe hail at Huntley which may give insight to relative lodging tolerance. The medium greens and the large greens appeared consistently the tallest or equivalent to other tall cultivars across Montana. Riveland, CDC Greenland, and experimental line LC07600517L were the tallest at two and equivalent to the other tallest varieties at more than five testing sites (**Table 14**).

Lentil Test Weights ranged from 57.5 (Huntley, irrigated) to 63.6 (Havre) lb bu⁻¹ (**Table 15**). Small reds, CDC Impact and LC06601228T, and three Spanish brown lines had the heaviest test weight or were statistically equivalent to the other heaviest test weight varieties across the state. These lines appeared to be the most consistent in test weight.

Lentil Thousand Kernel Weight (TKW) was similar among the locations with an exception of Richland having 55.7 g 1000 kernels⁻¹ but differed among the cultivars within each testing site due to differences of the seed size among the lentil types (**Table 16**). The large green Riveland consistently had the largest seed size or equivalent to the other largest lentils at all testing sites.

Lentil Flowering Dates differed from location to location due to differences in seeding dates and environments observed at each site (**Table 17**). The large green Merrit and the medium green Brewer appeared to be consistently the earliest to flower or equivalent to the other earliest flowering varieties.

Chickpea Grain Yields were the highest at Conrad site (2860.2 lbs acre⁻¹; **Table 21**). Richland site was severely impacted by *Ascochyta* blight and pre-mature desiccation (the chickpea trial was conducted in the same field with the dry pea and lentil trial at Richland, and the crop was terminated when desiccating the lentil crop with a field scale sprayer). Therefore, some yield reduction was observed. Havre yields were affected by severe deer damage resulting suppressed yield in a few varieties, such as Dylan. CDC Frontier was either the top or statistically similar to the top yielding entries at three of the four locations (**Table 21**). Experimental line CA04900843C had the greatest yield (1105.3 lbs acre⁻¹) at Moccasin site, but the overall grain yields at the site were similar among the varieties.

SUMMARY: Dry pea and lentil grain yields over the past few years have been promising across Montana (**Table 22 & 23**). A large variability from one year to another exists and makes comparison of the variety yield performance challenging. This may be due to different climate and annual variation of weather conditions across the state and variety adaptability to local environments. No one single variety of peas out-performed any other varieties consistently across the state over the four years. At certain locations, a few dry pea varieties appeared the top yielder or equivalent to other top yielders for multiple years. For instance, Delta showed consistently high yield potential at Moccasin (**Table 22**). The small green lentil, Essex, and the medium green lentils including CDC Meteor, CDC Richlea, CDC Vantage, and LC01602300R showed good consistent yield potential at Conrad, Havre, Richland, and Sidney during the testing years (**Table 23**). The variability seen among varieties in different climates across the state further illustrates the need for continued variety evaluation in areas where pulse crop production may expand in the future. Further analysis will be conducted by bi-plot technology to explain variety response to environment.

FUTURE PLANS: Statewide spring dry pea and lentil variety evaluations will continue across Montana as industry funding and support continues.

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Dale and Ken Flikkema, Producers, Bozeman, MT

Table 1. 2011 Statewide Spring Pulse Variety Evaluations - Site management summary.
 Exp. 80, 81, 85, 86, 89. Montana State University - Montana Ag. Experiment Stations, Central Ag. Research Center, Moccasin, MT

Field Summary												
	Bozeman ^{1/}	Broadview	Conrad	Corvallis	Creston	Havre	Huntley	Huntley	Joplin ^{2/}	Moccasin	Richland ^{3/}	Sidney
Environment:	Dryland	Dryland	Dryland	Irrigated	Dryland	Dryland	Dryland	Irrigated	Dryland	Dryland	Dryland	Dryland
Tillage History:	No-Till	No-Till	Conv-Till	Conv-Till	Conv-Till	No-Till	No-Till	No-Till	No-Till	No-Till	No-Till	Cov-Till
Previous Crop:	Barley	Winter Wheat	Fallow	Winter Wheat	Spring Wheat	Camelina	Fallow	Spring Barley	Fallow	Fallow	Fallow	Fallow
Soil Type:	AmstrdmSi-L	Unkn	Scobey C-L	Burnt Fork L	Creston Si-L	Joplin C-L	Ft Collins C-L	Ft Collins C-L	Unkn	Judith C-L	Farnuf Loam	Williams C-L
Elevation:	4775'	Unkn	3665'	3600'	2970'	2700'	3020'	3020'	Unkn	4250'	2950'	2200'
Trial Management												
Pea Seed Date:	04/15/11	04/25/11	05/07/11	04/26/11	04/25/11	04/22/11	04/25/11	04/13/11	04/28/11	04/27/11	05/25/11	04/28/11
Lentil Seed Date:	04/15/11	04/25/11	05/07/11	04/26/11	04/25/11	04/22/11	04/25/11	04/13/11	04/28/11	04/27/11	05/25/11	04/28/11
Fertilizer:	5.5-26-26-9	none	11-22-0	11-52-40-3	150-30-120-24	none	11-52-0	11-52-0	11-22-0	none	none	40 lb N/ac as liquid 28-0-0
Plot Size:	120 ft ²	140 ft ²	125 ft ²	80 ft ²	60 ft ²	88 ft ² *	140 ft ²	140 ft ²	80 ft ²	90 ft ²	50 ft ²	50 ft ²
Pesticides (rates)	Hand weeded	none	Prowl H2O 5/5/11 Roundup WeatherMax	Prowl H2O 4/18/11	none	Prowl H2O (32 oz/ac - fall preplant), 11/4/10 RTMaster III (16 oz/ac preplant), 04/20/11	none	RT3 (22 oz/ac) +prowl (2	Desiccated 8/19/11	Assure Roundup WeatherMax Prowl	none	Brox M (1.5 pt/ac), 06/13/11
*seed 88 ft, harvest 72 ft												
Pea Harvest Date:	08/08/11	08/09/11	08/14/11	8/16/11	08/12/11	8/1/11	08/05/11	08/05/11	08/29/11	08/08-08/10	08/18-09/08	08/05/11
Lentil Harvest Date:	08/11/11	08/09/11	08/14/11	8/16/11	08/19/11	2011/8/8	08/08/11	08/09/11	08/29/11	08/22/11	09/08/11	08/05/11
Season Precip:	9.95"	----	9.77"	5.39"	11.16"	9.22"	14.39"	14.39"	----	15.47"	----	12.8"
Site Ave:	04/01-08/31	04/01-08/31	04/01-08/31	04/01-08/31	04/01-08/31	04/01-08/31	04/01-08/31	04/01-08/31	04/01-08/31	04/01-08/31	04/01-08/31	04/01-08/31
Observations:				Irrigation: 2" root rot began showing, 07/17/11	Severe deer damage (Pea)	Spray drift; Severe deer damage (pea & chickpea)	Hail effect Severe lodging	Hail effect	Grasshopper 30-60% yield loss			

^{1/} - Bozeman site is an on-farm site adjacent to Authur Post Agronomy Farm, west of Bozeman, Gallatin County, Montana.

^{2/} - An on-farm site near Joplin, Liberty County, Montana

^{3/} - Richland site was on an on-farm site 7-miles south of Richland, Valley County, Montana

Table 2. Characteristics and sources of cultivars for the 2011 dry pea variety evaluation trials.

Exp: 80 and 81. Montana State University - Montana Ag. Experiment Stations, Central Ag. Research Center, Moccasin, MT

Variety	Sponser	Size	Maturity	Height	Resistance/Claim	Breeding Program	Release
Yellow Peas							
DS Admiral		Medium	Mod	Tall	Powdery Mildew	Danisco	2000
Delta	Statewide Selections	Medium	Mod	Mod	<i>Fusarium</i> -1, Old Var.	Cebeco-Zaden (Limagrain)	1990-95
CDC Golden		Medium	Mod	Tall	Stem Strength	Crop Development Centre	2003
PS03101822	Statewide/USDA-ARS	Medium	Mod	Short	Not Published	USDA-ARS	N/A
CDC Meadow	Alternative Seed Strategies	Medium	Mod	Tall	Powdery Mildew, Lodging	Crop Development Centre	2008
CDC Treasure		Medium			Lodging, PM		2009
Bridger (LL7020)		Medium	M. Early	Mod	Not Published	Legume Logic	2011
Spider	Legume Logic	Medium	Mod	Tall	Powdery Mildew, Lodging	Legume Logic	2008
Trapeze		Large	Mod		Lodging	Swalöf-Weibull AB	2010
SW Midas	Pulse USA	Medium	Mod	Mod	Stem Strength, PM	Swalöf-Weibull AB	2004
AC Agassiz		Medium	Mod	Mod	Res-PM; M.Suscept- Microsphaerella	Agricultural and Agri-Food Canada	2007
AC Thunderbird	Meridian Seeds	Medium	Late	Tall	Res-PM; Slight Suscept - Aschochyta	Agricultural and Agri-Food Canada	2007
Montech 4152 ^{3/}	Montech Seed Group	Medium	Mod	Tall	Good height; Large seed	Limagrain, Netherlands	2009
Pro 083-7406	ProGene Plant Research	Medium	Not Avail	Mod	Not Published	ProGene Plant Research Crop Food Research, NZ	N/A
SW Carousel		Medium	M. Early	Mod	PM, High Pod Set, Lodging	Swalöf-Weibull AB	2005
PS04100710	USDA-ARS	Large	Mod	Short	Not Published	USDA-ARS Grain Legume	N/A
PS06101119	(Western Regional Trial)	Large	M. Early	Short	Not Published	Genetics and Physiology	N/A
Universal	Dr. Rebecca McGee	Medium				Swalöf-Weibull AB	2000
PS02101137		Large					N/A
Vegas		Large					
Gunner	Legume Logic	Medium					
Montech 4193	Montech Seed Group	Medium					
PRL 415		Medium					
Pro 127-2	ProGene Plant Research	Medium					
Yellow Wrinkled Peas							
B10-10	MSU - Dr. Norm Weeden	Medium			High Amylose Content	MSU Pea Genetics Program	N/A

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Table 2. Characteristics and sources of cultivars for the 2011 dry pea variety evaluation trials. (continued)

Exp: 80 and 81. Montana State University - Montana Ag. Experiment Stations, Central Ag. Research Center, Moccasin, MT

Variety	Sponser	Size ^{1/}	Maturity ^{2/}	Height ^{2/}	Resistance/Claim	Breeding Program	Release
Green Peas							
Cruiser		Medium	Mod	Mod	<i>Fusarium</i> -1, Mosaic Virus, PM, Color	ProGene Plant Research Crop Food Research, NZ	2002
Majoret	Statewide Selections	Medium	Mod	Short	None; Old Variety	Swalöf-Weibull AB	1994
Medora		Medium	M. Late	Tall	Tall, Powdery Mildew	USDA-ARS	2006
Stirling		Medium	Early	Short	Early, <i>Fusarium</i> -1, PM	USDA-ARS	2002
CDC Striker		Medium	Mod	Mod	Moderate plant height	Crop Development Centre	2002
CDC Patrick		Alternative Seed Strategies	Medium	Mod	Mod	Powdery Mildew, <i>Fusarium</i>	Crop Development Centre
K2 Evergreen	Legume Logic	Large	Mod	Mod	Bleach	Legume Logic	2005
Montech 1103	Montech Seed Group	Large	Mod	Mod	Not Published	Unknown	N/A
Aragorn		Small	Mod	Mod	<i>Fusarium</i> -1, PSBMV		2006
Pro 071-6101		Medium	N/A	Mod	Not Published		N/A
Pro 081-6118		Medium	N/A	Mod	Not Published		N/A
Pro 081-7115	ProGene Plant Research					ProGene Plant Research	N/A
Pro 091-7137						Crop Food Research, NZ	N/A
Pro 081-7116							N/A
Pro 091-7142							N/A
PS03101445			Large	Mod	Short	Not Published	
PS05100632		Medium	Early	Mod	Not Published		N/A
PS05100736	USDA-ARS	Medium	M. Late	Mod	Not Published	USDA-ARS Grain	N/A
PS05100840	(Western Regional Trial)	Medium	M. Late	Mod	Not Published	Legume Genetics and Physiology Research	N/A
PS07100470	Dr. Rebecca McGee				Not Published		N/A
PS07100471					Not Published		N/A
Banner						ProGene	2007
NDP080111	North Dakota State	Medium			Powdery Mildew	North Dakota State	N/A
PS05ND0232	Univeristy	Medium			Powdery Mildew	University	N/A

^{1/} - Seed Size Ranges (g/1000 seeds) - {Size of seed at planting} :

Very Large => 250-295

Medium = 190-250

^{2/} - Compared to trial means.

Large = 250 - 290

Small =< 190

^{3/} - Montech 4152 has also gone by the name "Cebeco"

Table 3. Characteristics and sources of cultivars for the 2011 lentil variety evaluation trials.
Exp: 85 and 86. MSU-MAES, Central Ag. Research Center, Moccasin, Montana

Variety	Size	Type	Maturity ^{1/}	Breeding Program	Release
Small Green					
	g 1000 sds ⁻¹				
Eston	35-45	Green	M. Early	USDA-ARS Grain-Legume	<1990
Essex (2307E)	35-45	Green	Moderate	USDA-ARS Grain-Legume	2009
LC03601590E	35-45	Green	Moderate	USDA-ARS Grain-Legume	N/A
LC01602273E	35-45	Green	Moderate	USDA-ARS Grain-Legume	N/A
LC05600812E	35-45	Green		USDA-ARS Grain-Legume	N/A
LC08600005E	35-45	Green		USDA-ARS Grain-Legume	N/A
LC07ND068E	35-45	Green		North Dakota State University	N/A
Medium Green					
CDC Richlea	50-60	Green	M. Late	Crop Development Centre	1994
CDC Vantage	50-60	Green	Moderate	Crop Development Centre	1998
CDC Meteor	50-60	Green	Moderate	Crop Development Centre	2006
CDC Impress CL	50-60	Green		Crop Development Centre	2007
Brewer	50-60	Grn-Mttled	M. Early	USDA-ARS Grain-Legume	1984
LC01602300R	50-60	Green	Moderate	USDA-ARS Grain-Legume	N/A
LC07600591R	50-60	Green		USDA-ARS Grain-Legume	N/A
LC07ND055R	50-60	Green		North Dakota State University	N/A
Large Green					
Merrit	60+	Green	Moderate	USDA-ARS Grain-Legume	2003
Riveland	70+	Green	Late	USDA-ARS Grain-Legume	2007
LC07600517L	60+	Green	Moderate	USDA-ARS Grain-Legume	N/A
LC06600839L	60+	Green	Moderate	USDA-ARS Grain-Legume	N/A
LC06601734L	60+	Green	Moderate	USDA-ARS Grain-Legume	N/A
CDC Greenland	60+	Green		Crop Development Centre	2006
Small Red					
Crimson	35-45	Red	M. Early	USDA-ARS Grain-Legume	1990
CDC Impact CL	30-40	Red-Turkish		Crop Development Centre	2006
CDC Maxim CL	30-40	Red		Crop Development Centre	2007
CDC Redberry	30-40	Red-Turkish	Moderate	Crop Development Centre	2005
LC01602062T	30-40	Red-Turkish	Moderate	USDA-ARS Grain-Legume	N/A
LC06601228T	30-40	Red-Turkish	Moderate	USDA-ARS Grain-Legume	N/A
LC07ND176T	30-40	Red-Turkish		North Dakota State University	N/A
LC07ND202T	30-40	Red-Turkish		North Dakota State University	N/A
Extra Small Red					
CDC Impala CL	20-30	Red		Crop Development Centre	2007
Spanish Brown					
Morena (LC026011430-40		Pardina	Moderate	USDA-ARS Grain-Legume	2011
Pardina	35-45	Pardina	M. Early	USDA-ARS Grain-Legume	1990
LC01602245P	30-40	Pardina	Moderate	USDA-ARS Grain-Legume	N/A
LC08600113P	35-45	Pardina		USDA-ARS Grain-Legume	N/A
LC08600114P	45-55	Pardina		USDA-ARS Grain-Legume	N/A
Zero-Tanin					
Cedar	30-40	Red	Moderate	USDA-ARS Grain-Legume	2010
LC99602585RZ	30-40	Red	Moderate	USDA-ARS Grain-Legume	N/A
Shasta	35-45	Green	Late	USDA-ARS Grain-Legume	2010
LC06600939YZ	60+			USDA-ARS Grain-Legume	N/A

^{1/} Relative maturity compared with other entries tested:

Early: 2+ Days Earlier

Mod: ±1 Day from average

Late : 2+ Days Later

Table 4. Characteristics and sources of cultivars for the 2011 chickpea variety evaluation trials.
Exp: 89. MSU-MAES, Central Ag. Research Center, Moccasin, Montana

Variety	Type	Leaf-Type	Flower	Maturity ^{1/}	Resistance	Breeding Program	Release
Dwelley	Large Kabuli	Unifoliolate	White	Late	Poor	USDA-ARS	1998
Dylan	Large Kabuli	Compound	White	Moderate	Fair	USDA-ARS	2006
Sawyer	Large Kabuli	Compound	White	Moderate	Good	USDA-ARS	2009
Sierra	Large Kabuli	Compound	White	Moderate	Good	USDA-ARS	2004
CA0390B007C	Large Kabuli	Compound	White	Late	Fair/Unkn	USDA-ARS	N/A
CA049004221C	Large Kabuli	Compound	White	Moderate	Fair/Unkn	USDA-ARS	N/A
CA04900843C	Large Kabuli	Compound	White	Moderate	Fair/Unkn	USDA-ARS	N/A
CA0690B0409C	Large Kabuli					USDA-ARS	N/A
CA0690B0250C	Large Kabuli					USDA-ARS	N/A
CDC Frontier	Large Kabuli					Crop Development Centre	2003
Myles	Desi					USDA-ARS	1994
IS-14	Small Kabuli	Compound	White	Early	Fair	Indian	N/A

^{1/} Relative maturity compared with other entries tested:

Early: 2+ Days Earlier

Mod: ±1 Day from average

Late : 2+ Days Later

Table 5. 2011 Montana Statewide Dry Pea Variety Evaluations - Dry Pea Grain Yield Summary.

Exp: 80. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Yellow Pea	Bozeman	Broadview	Conrad	Corvallis	Havre	Huntley	Huntley (irrigated)	Joplin	Moccasin	Richland	Sidney
----- lbs ac ⁻¹ (@ 13% moisture; w here applicable) -----											
Bridger	2475.50 ^{ay}	1318.66	3259.25 ^{ns}	1862.46	2149.09	2359.52 ^{ns}	4855.86 ^a	773.33	1160.03 ^{ay}	2493.67 ^{ay}	2998.23
Delta	2378.00 ^{ay}	1476.49	2831.50	1673.60	2138.88	1904.33	4532.95 ^a	775.00	991.12	1501.33	2662.27
Montech 4152	2378.25 ^{ay}	1438.20	3066.25	1946.43	2266.40	2337.22	4110.73	1040.33	1017.65	1808.67	2463.40
Montech 4193	-----	-----	-----	-----	1555.49	-----	-----	-----	1062.38 ^{ay}	-----	-----
Spider	2188.25	1488.23 ^{ns}	2664.00	2155.33 ^{ns}	2071.00	2283.07	4490.83 ^a	907.67	1005.18	1910.00	2504.30
Trapeze	-----	-----	-----	-----	-----	-----	-----	-----	991.18	2052.67	2583.27
Vegas	-----	-----	-----	-----	-----	-----	-----	-----	1083.40 ^{ay}	2295.33 ^{ay}	-----
AC Agassiz	-----	-----	2866.75	-----	2236.10	-----	-----	-----	1123.28 ^{ay}	2224.00 ^{ay}	-----
AC Thunderbird	-----	-----	2601.75	-----	1464.67	-----	-----	-----	929.18	1974.67	-----
CDC Golden	2192.38	1138.00	2735.50	2019.05	2339.69 ^a	2120.13	4150.58	1030.00	976.40	2140.00 ^y	2239.17
CDC Meadow	2267.80	1342.81	2877.75	1660.43	1888.94	2324.99	4235.94	952.00	1023.28	1740.00	2599.50
CDC Treasure	-----	-----	2964.00	-----	-----	-----	-----	-----	1028.63	2164.33 ^y	2657.33
DS Admiral	2146.25	1199.49	3070.25	1770.06	2101.88	2128.27	4842.15 ^a	1012.00	998.45	1663.67	2517.17
SW Midas	2368.00 ^{ay}	1239.45	2773.50	1997.83	2110.88	2106.47	4219.53	1059.67	1031.23 ^{ay}	2116.33	2589.07
B10-10	-----	-----	-----	-----	-----	-----	-----	-----	913.25	1240.33	-----
PRL415	-----	-----	2788.75	-----	-----	-----	-----	-----	-----	1962.00	-----
Pro 083-7406	-----	-----	2948.00	-----	-----	-----	-----	-----	-----	2057.00	-----
Pro 127-2	-----	-----	-----	-----	-----	-----	-----	-----	-----	1879.67	-----
PS03101822	2422.75 ^{ay}	1464.74	2809.00	1854.65	2826.91 ^a	2074.93	4931.55 ^a	1603.67 ^{ns}	962.33	1572.00	2746.50
Yellow Pea Means	2262.00	1345.12	2875.45	1882.17	2095.83	2182.10	4485.57	1017.07	1020.99	1908.82	2596.38
P-Value	<0.01	0.72	0.37	0.79	0.06	0.96	0.08	0.33	0.04	<0.01	0.52
LSD _{0.05} (by t)	185.52	NS	NS	NS	NS	NS	NS	NS	129.61	355.53	NS
CV% (s/means)	5.90	20.72	11.52	23.09	15.90	22.95	10.21	37.27	8.75	11.63	12.94
Trial Analysis:											
Trial Means[†]	2241.50	1231.17	2776.50	1882.81	2006.78	2035.17	4357.33	964.30	993.32	1792.16	2519.28
P-Value	<0.01	0.17	0.01	0.34	0.00	0.48	0.02	0.08	<0.01	<0.01	0.18
LSD _{0.05} (by t)	174.67	NS	435.04	NS	557.60	NS	681.49	NS	129.52	314.31	NS
CV% (s/means)	5.56	19.52	11.08	22.27	13.64	21.36	11.02	37.74	9.16	10.94	13.54

DISCLAIMER

The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by the Montana Agricultural Experiment Station is implied. The results of individual traits and studies are considered to be of a **preliminary** nature and should **not** be considered as a product endorsement or recommendation for commercial use.

NOT FOR PUBLICATION

Table 5. 2011 Montana Statewide Dry Pea Variety Evaluations - Dry Pea Grain Yield Summary (Continued).

Exp: 80. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Green Pea	Bozeman	Broadview	Conrad	Corvallis	Havre	Huntley	Huntley (irrigated)	Joplin	Moccasin	Richland	Sidney
----- lbs ac ⁻¹ (@13% moisture; w here applicable) -----											
Aragom	----	----	2507.75	----	1562.35	----	----	----	1021.03 ^g	1561.33	----
Arcadia	2377.50 ^{ag}	1192.43	3178.00 ^{ag}	2271.67	2405.00 ^{ag}	2224.16 ^{ns}	4765.24 ^a	1142.00	977.88	1494.33	2771.80
Cruiser	2142.75	1032.40	2745.50	1967.32	2286.10 ^{ag}	1998.19	4244.97	977.00	987.88	1684.33	2223.07
Evergreen	----	----	----	----	----	----	----	----	1021.85 ^g	1656.33	2937.20
K2	2018.25	949.64	2621.50	1894.40	1575.67	2091.72	4657.46 ^a	748.00	851.20	1771.67	2296.37
Majoret	2031.25	1161.27	2381.75	1640.75	1612.13	1659.70	4090.19	465.00	847.60	1653.00	2232.73
Medora	2146.50	1072.10	2492.25	1800.01	2109.08 ^g	1891.19	4173.76	644.33	987.33	1576.00	2434.57
Montech 1103	----	----	----	----	1789.24	----	----	----	1140.58 ^{ag}	1656.33	----
Stirling	2179.00	1082.40	2651.00	1474.87	1914.91 ^g	1526.98	3731.78	1256.67	837.58	1493.33	2600.77
CDC Patrick	----	1021.33	2655.00	1691.45	2148.52 ^g	1946.91	----	989.33	950.50	2123.33 ^g	2421.43
CDC Striker	2072.50	1247.96	2632.25	1865.87	2011.85 ^g	1567.89	3921.69	606.33	774.08	1732.33	2211.80
Pro 071-6101	----	----	2455.25	----	----	----	----	----	----	1530.67	----
Pro 081-6118	----	----	----	----	----	----	----	----	----	1859.33	----
Pro 081-7116	----	----	2900.75 ^{ag}	----	----	----	----	----	----	----	----
Pro 081-7137	----	----	3041.33 ^{ag}	----	----	----	----	----	----	----	----
Pro 081-7142	----	----	----	----	----	----	----	----	----	1415.67	----
Pro 081-7155	----	----	2510.00	----	----	----	----	----	----	1471.00	----
PS06100760	2403.67 ^{ag}	1295.39 ^{ns}	2779.50 ^g	2345.45 ^{ns}	2022.31 ^g	2087.43	4119.32	1375.00 ^{ns}	1079.70 ^{ag}	1526.67	2214.87
Green Pea Means	2214.39	1117.22	2675.75	1883.44	1917.74	1888.24	4213.05	911.52	956.43	1636.62	2434.46
P-Value	<0.01	0.45	0.01	0.09	0.02	0.24	0.11	0.08	<0.01	<0.01	0.17
LSD _{0.05} (by t)	165.23	NS	406.06	NS	492.49	NS	NS	NS	133.76	254.42	NS
CV% (s/means)	5.00	17.42	10.50	21.43	12.17	18.90	11.95	39.92	9.75	9.32	14.24
Trial Analysis:											
Trial Means[†]	2241.50	1231.17	2776.50	1882.81	2006.78	2035.17	4357.33	964.30	993.32	1792.16	2519.28
P-Value	<0.01	0.17	0.01	0.34	<0.01	0.48	0.02	0.08	<0.01	<0.01	0.18
LSD _{0.05} (by t)	174.67	NS	435.04	NS	557.60	NS	681.49	NS	129.52	314.31	NS
CV% (s/means)	5.56	19.52	11.08	22.27	13.64	21.36	11.02	37.74	9.16	10.94	13.54

[†] - Means for entire trial; Statewide Trial was incorporated into larger trials at different locations.

^a - Denote yield equal to the highest trial yield (in **bold italics**), based on a protected LSD_{0.05}.

^y - Denotes yellow pea yield equal to the highest yellow pea yield (in **bold**), based on LSD_{0.05}, at each location.

^g - Denotes green pea yield equal to the highest green pea yield (in **bold**), based on LSD_{0.05}, at each location.

^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

SW-11

Table 6. 2011 Montana Statewide Dry Pea Variety Evaluations - Dry Pea Mature Canopy Height Summary.
Exp: 80. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Yellow Pea	Bozeman	Broadview	Conrad	Corvallis	Havre	Huntley		Joplin	Moccasin	Richland	Sidney
						(irrigated)	cm				
Bridger	49.25 ^a	42.33	64.14 ^y	47.50 ^{ay}	50.65	46.33 ^{ay}	71.25 ^{ay}	48.26 ^a	31.50	49.33 ^{ay}	55.67
Delta	42.00	47.33	52.71	34.73	46.60	27.00	26.00	43.18	31.17	37.33	57.33 ^y
Montech 4152	52.75 ^{ay}	44.33	73.66 ^{ay}	50.36 ^{ay}	56.00	48.00 ^{ay}	68.00 ^{ay}	46.57 ^a	35.75 ^{ay}	44.17 ^{ay}	60.00 ^{ay}
Montech 4193	-----	-----	-----	-----	37.35	-----	-----	-----	33.75	-----	-----
Spider	49.75 ^{ay}	51.67	73.03 ^{ay}	53.21 ^{ay}	56.70	58.00 ^{ay}	46.75	49.11 ^a	36.50 ^{ay}	46.00 ^{ay}	65.00 ^{ay}
Trapeze	-----	-----	-----	-----	-----	-----	-----	-----	34.50 ^{ay}	44.67 ^{ay}	54.33
Vegas	-----	-----	-----	-----	-----	-----	-----	-----	34.75 ^{ay}	48.33 ^{ay}	-----
AC Agassiz	-----	-----	69.22 ^{ay}	-----	49.80	-----	-----	-----	35.75 ^{ay}	46.67 ^{ay}	-----
AC Thunderbird	-----	-----	72.39 ^{ay}	-----	46.95	-----	-----	-----	34.00 ^y	47.00 ^{ay}	-----
CDC Golden	49.25 ^a	48.00	63.50	53.98 ^{ay}	58.05	42.67 ^{ay}	67.75 ^{ay}	48.26 ^a	34.50 ^{ay}	49.33 ^{ay}	62.33 ^{ay}
CDC Meadow	53.60 ^{ay}	52.00 ^{ns}	67.95 ^{ay}	52.07 ^{ay}	42.75	32.67	59.50 ^{ay}	48.26 ^a	36.25 ^{ay}	40.67	53.33
CDC Treasure	-----	-----	71.12 ^{ay}	-----	-----	-----	-----	-----	39.00 ^{ay}	47.33 ^{ay}	65.33 ^{ay}
DS Admiral	53.75 ^{ay}	41.33	68.58 ^{ay}	44.01 ^{ay}	59.10 ^{ns}	44.33 ^{ay}	54.75	55.88 ^a	37.25 ^{ay}	40.33	63.67 ^{ay}
SW Midas	45.25	47.67	57.79	49.91 ^{ay}	40.10	28.00	45.25	42.33	34.25 ^y	47.00 ^{ay}	53.33
B10-10	-----	-----	-----	-----	-----	-----	-----	-----	30.00	35.67	-----
PRL415	-----	-----	73.66 ^{ay}	-----	-----	-----	-----	-----	-----	41.33	-----
Pro 083-7406	-----	-----	64.77 ^y	-----	-----	-----	-----	-----	-----	39.33	-----
Pro 127-2	-----	-----	-----	-----	-----	-----	-----	-----	-----	41.67	-----
PS03101822	37.00	42.00	54.61	39.81	48.65	16.00	24.75	47.41 ^a	30.75	30.00	49.33
Yellow Pea Means	48.32	46.20	66.22	47.29	49.39	38.11	51.56	47.70	34.39	42.52	58.15
P-Value	<0.01	0.69	<0.01	0.04	0.08	0.03	<0.01	0.23	0.05	<0.01	<0.01
LSD _{0.05} (by t)	4.17	NS	10.03	12.09	NS	22.60	12.56	NS	5.14	7.43	8.78
CV% (s/means)	6.24	18.07	10.61	17.62	13.39	34.57	16.79	11.55	10.30	10.91	8.92
Trial Analysis:											
Trial Means[†]	46.50	46.24	63.80	46.99	46.83	36.98	47.87	47.32	33.59	41.28	57.05
P-Value	<0.01	0.85	<0.01	0.01	0.06	<0.01	<0.01	0.03	<0.01	<0.01	<0.01
LSD _{0.05} (by t)	5.27	NS	8.87	12.51	NS	18.39	16.17	8.13	4.63	7.36	8.10
CV% (s/means)	8.08	19.77	9.88	18.79	15.57	30.03	23.79	10.38	9.70	11.13	8.62

DISCLAIMER

The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by the Montana Agricultural Experiment Station is implied. The results of individual traits and studies are considered to be of a **preliminary** nature and should **not** be considered as a product endorsement or recommendation for commercial use.

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Table 6. 2011 Montana Statewide Dry Pea Variety Evaluations - Dry Pea Mature Canopy Height Summary (Continued).
Exp: 80. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Green Pea	Bozeman	Broadview	Conrad	Corvallis	Havre	Huntley	Huntley	Joplin	Moccasin	Richland	Sidney
							(irrigated)				
-----cm-----											
Aragorn	----	----	55.25	----	38.00	----	----	----	32.25	32.33	----
Arcadia	42.75	45.00	61.60	42.99 ^{ag}	40.70	22.00	46.25	47.41 ^g	32.25	38.33	52.00
Cruiser	46.00 ^g	44.67	67.31 ^{ag}	47.43 ^{ag}	46.70	29.33	41.00	55.03 ^{ag}	35.00 ^{ag}	35.33	55.00
Evergreen	----	----	----	----	----	----	----	----	35.75 ^{ag}	42.00	66.67 ^{ag}
K2	43.25	44.67	61.60	40.45	50.23	50.33 ^{ag}	58.25 ^a	43.18	31.25	38.00	50.67
Majoret	46.00 ^g	49.67	62.23	47.63 ^{ag}	46.90	53.00 ^{ag}	48.00	49.11 ^{ag}	35.25 ^{ag}	42.67 ^{ag}	50.33
Medora	50.75 ^{ag}	49.67	71.12 ^{ag}	55.44 ^{ag}	44.55	36.00	44.75	49.95 ^{ag}	37.50 ^{ag}	42.00	63.33 ^{ag}
Montech 1103	----	----	----	----	41.20	----	----	----	31.00	42.00	----
Stirling	34.50	41.00	50.17	31.12	31.80	8.00	22.50	38.95	25.50	33.00	49.67
CDC Patrick	----	54.33 ^{ns}	70.49 ^{ag}	55.18 ^{ag}	47.30	49.67 ^{ag}	----	48.26 ^{ag}	33.50 ^g	50.00 ^{ag}	58.33
CDC Striker	48.50 ^{ag}	47.00	64.77 ^g	52.58 ^{ag}	53.25 ^{ns}	57.33 ^{ag}	51.00	43.18	31.25	44.00 ^{ag}	61.00 ^{ag}
Pro 071-6101	----	----	50.80	----	----	----	----	----	----	37.33	----
Pro 081-6118	----	----	----	----	----	----	----	----	----	45.67 ^{ag}	----
Pro 081-7116	----	----	60.96	----	----	----	----	----	----	----	----
Pro 081-7137	----	----	64.14 ^g	----	----	----	----	----	----	----	----
Pro 081-7142	----	----	----	----	----	----	----	----	----	34.67	----
Pro 081-7155	----	----	58.42	----	----	----	----	----	----	39.33	----
PS06100760	40.00	39.67	60.33	47.18 ^{ag}	40.35	17.00	38.00	47.41 ^g	29.75	39.67	51.33
Green Pea Means	44.10	46.19	61.37	46.68	44.27	35.85	47.87	46.94	32.52	39.62	55.83
P-Value	<0.01	0.73	<0.01	0.02	0.32	<0.01	0.06	0.03	<0.01	<0.01	0.00
LSD _{0.05} (by t)	6.86	NS	7.83	13.48	NS	14.67	NS	8.13	4.06	7.56	7.83
CV% (s/means)	10.43	21.37	8.95	19.91	17.77	23.86	28.89	10.47	8.70	11.44	8.23
Trial Analysis:											
Trial Means[†]	46.50	46.24	63.80	46.99	46.83	36.98	47.87	47.32	33.59	41.28	57.05
P-Value	<0.01	0.85	<0.01	0.01	0.06	<0.01	<0.01	0.03	<0.01	<0.01	<0.01
LSD _{0.05} (by t)	5.27	NS	8.87	12.51	NS	18.39	16.17	8.13	4.63	7.36	8.10
CV% (s/means)	8.08	19.77	9.88	18.79	15.57	30.03	23.79	10.38	9.70	11.13	8.62

[†] - Means for entire trial; Statewide Trial was incorporated into larger trials at different locations.

^a - Denote height equal to the tallest trial cultivar (in **bold italics**), based on a protected LSD_{0.05}.

^y - Denotes yellow pea equal to the tallest yellow pea (in **bold**), based on LSD_{0.05}, at each location.

^g - Denotes green pea equal to the tallest green pea (in **bold**), based on LSD_{0.05}, at each location.

^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

SW-13

Table 7. 2011 Montana Statewide Dry Pea Variety Evaluations - Dry Pea Test Weight Summary.

Exp: 80. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Yellow Pea	Bozeman	Broadview	Conrad	Corvallis	Havre	Huntley	Huntley (irrigated)	Joplin	Moccasin	Richland	Sidney
							----- lbs bu ⁻¹ -----				
Bridger	----	63.77	64.70 ^{ay}	75.47 ^a	66.70 ^{ay}	63.03	62.98	----	64.55	65.50 ^{ay}	65.33 ^a
Delta	----	64.70 ^{ay}	64.98 ^{ay}	74.72	66.10 ^{ay}	64.13	63.20	----	64.25	65.03 ^{ay}	65.83 ^a
Montech 4152	----	63.53	64.53 ^y	75.17	66.65 ^{ay}	61.87	62.43	----	64.35	64.78 ^{ay}	65.00
Montech 4193	----	----	----	75.70 ^{ay}	64.80	----	----	----	63.25	----	----
Spider	----	64.87 ^{ay}	65.18 ^{ay}	----	66.05 ^{ay}	62.50	62.78	----	65.28 ^{ay}	64.60 ^{ay}	65.83 ^a
Trapeze	----	----	----	----	----	----	----	----	63.83	64.57 ^{ay}	64.83
Vegas	----	----	----	----	----	----	----	----	64.15	64.60 ^{ay}	----
AC Agassiz	----	----	63.43	----	65.25	----	----	----	63.68	63.80 ^y	----
AC Thunderbird	----	----	64.08	----	65.00	----	----	----	64.78 ^{ay}	63.53	----
CDC Golden	----	64.97 ^{ay}	64.30	76.29 ^{ay}	65.85 ^{ay}	63.23	63.80	----	64.18	64.30 ^{ay}	65.17 ^a
CDC Meadow	----	64.73 ^{ay}	64.80 ^{ay}	75.49 ^a	66.60 ^{ay}	64.70 ^{ns}	63.83 ^{ns}	----	64.50	65.40 ^{ay}	65.50 ^a
CDC Treasure	----	----	64.68 ^{ay}	----	----	----	----	----	64.68 ^{ay}	65.53 ^{ay}	65.67 ^a
DS Admiral	----	63.77	64.53 ^y	75.34	65.45	62.97	62.90	----	64.03	65.00 ^{ay}	65.33 ^a
SW Midas	----	63.57	63.90	75.90 ^{ay}	64.75	62.30	62.98	----	63.58	64.70 ^{ay}	65.17 ^a
B10-10	----	----	----	----	----	----	----	----	60.60	60.83	----
PRL415	----	----	63.83	----	----	----	----	----	----	63.37	----
Pro 083-7406	----	----	63.90	----	----	----	----	----	----	64.77 ^{ay}	----
Pro 127-2	----	----	----	----	----	----	----	----	----	64.03 ^y	----
PS03101822	----	63.57	64.05	74.69	65.00	62.80	61.85	----	63.40	64.17 ^{ay}	64.50
Yellow Pea Means		64.12	64.35	75.42	65.68	63.06	62.97		64.06	64.37	65.29
P-Value		0.02	<0.01	<0.01	0.01	0.49	0.44		<0.01	<0.01	0.07
LSD _{0.05} (by t)		1.07	0.67	0.77	1.14	NS	NS		0.64	1.79	NS
CV% (s/means)		0.97	0.73	0.70	0.80	2.48	1.93		0.69	1.74	0.75
Trial Analysis:											
Trial Means[†]		63.79	63.98	75.50	65.37	62.58	62.80		63.96	64.37	64.98
P-Value		<0.01	<0.01	<0.01	<0.01	0.54	0.34		<0.01	<0.01	<0.01
LSD _{0.05} (by t)		0.87	0.56	0.83	1.10	NS	NS		0.61	1.49	0.89
CV% (s/means)		0.82	0.62	0.77	0.82	3.18	1.61		0.67	1.44	0.83

SW-14

DISCLAIMER

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NOT FOR PUBLICATION

Table 7. 2011 Montana Statewide Dry Pea Variety Evaluations - Dry Pea Test Weight Summary (Continued).

Exp: 80. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Green Pea	Bozeman	Broadview	Conrad	Corvallis	Havre	Huntley	Huntley (irrigated)	Joplin	Moccasin	Richland	Sidney
Aragorn	----	----	63.08	----	63.80	----	----	----	62.58	64.17 ^{ag}	----
Arcadia	----	63.40	63.63	75.30	65.45 ^g	62.40	62.05	----	63.75	64.83 ^{ag}	64.83 ^g
Cruiser	----	62.63	62.80	76.05 ^{ag}	64.50	61.40	62.10	----	63.33	63.57	63.33
Evergreen	----	----	----	----	----	----	----	----	64.95 ^{ag}	64.97 ^{ag}	65.33
K2	----	63.00	63.38	75.92 ^{ag}	65.58 ^g	63.17	62.63	----	63.75	65.10 ^{ag}	64.83
Majoret	----	63.90 ^g	64.65 ^{ag}	75.75 ^{ag}	65.85 ^{ag}	63.50 ^{ns}	63.00	----	64.60 ^g	64.47 ^{ag}	65.33
Medora	----	63.20	62.63	74.65	64.10	61.67	62.40	----	63.65	63.93	64.00
Montech 1103	----	----	----	----	65.30 ^g	----	----	----	63.70	64.97 ^{ag}	----
Stirling	----	62.80	63.28	75.35 ^g	64.65	62.20	62.85	----	62.88	63.93	64.83
CDC Patrick	----	63.97 ^g	63.88	75.05	65.10 ^g	62.80	----	----	64.30	64.00	64.33
CDC Striker	----	64.20 ^{ag}	64.78 ^{ag}	76.25 ^{ag}	65.95 ^{ag}	59.57	63.08 ^{ns}	----	64.63 ^g	64.77 ^{ag}	65.67
Pro 071-6101	----	----	64.15	----	----	----	----	----	----	64.73 ^{ag}	----
Pro 081-6118	----	----	----	----	----	----	----	----	----	64.03	----
Pro 081-7116	----	----	63.75	----	----	----	----	----	----	----	----
Pro 081-7137	----	----	63.80	----	----	----	----	----	----	----	----
Pro 081-7142	----	----	----	----	----	----	----	----	----	64.87 ^{ag}	----
Pro 081-7155	----	----	63.20	----	----	----	----	----	----	64.53 ^{ag}	----
PS06100760	----	63.67 ^g	63.50	75.98 ^{ag}	64.70	62.27	62.75	----	63.85	63.53	64.00
Green Pea Means		63.42	63.61	75.59	65.05	62.11	62.80		63.83	64.36	64.65
P-Value		<0.01	<0.01	0.02	0.02	0.66	0.33		<0.01	0.02	<0.01
LSD _{0.05} (by t)		0.69	0.44	0.91	1.16	NS	NS		0.58	0.94	1.00
CV% (s/means)		0.63	0.49	0.83	0.85	3.77	1.12		0.64	0.88	0.90
Trial Analysis:											
Trial Means[†]		63.79	63.98	75.50	65.37	62.58	62.80		63.96	64.37	64.98
P-Value		<0.01	<0.01	<0.01	<0.01	0.54	0.34		<0.01	<0.01	<0.01
LSD _{0.05} (by t)		0.87	0.56	0.83	1.10	NS	NS		0.61	1.49	0.89
CV% (s/means)		0.82	0.62	0.77	0.82	3.18	1.61		0.67	1.44	0.83

[†] - Means for entire trial; Statewide Trial was incorporated into larger trials at different locations.^a - Denote test weights equal to the highest trial test weight (in **bold italics**), based on a protected LSD_{0.05}.^y - Denotes yellow pea test weight equal to the highest yellow pea test weight (in **bold**), based on LSD_{0.05} at each location.^g - Denotes green pea test weight equal to the highest green pea test weight (in **bold**), based on LSD_{0.05} at each location.^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

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Table 8. 2011 Montana Statewide Dry Pea Variety Evaluations - Dry Pea Thousand Kernels Weight Summary.
Exp: 80. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Yellow Pea	Bozeman	Broadview	Conrad	Corvallis	Havre	Huntley	Huntley (irrigated)	Joplin	Moccasin	Richland	Sidney
			----- g 1000 kernels ⁻¹ -----								
Bridger	----	----	222.50	213.00	209.41	----	----	200.67	197.11	235.04	----
Delta	----	----	233.50 ^{ay}	226.25	220.51	----	----	220.67	206.27	229.69	----
Montech 4152	----	----	231.50 ^{ay}	248.25 ^{ay}	232.62 ^y	----	----	254.67^{ay}	226.18 ^y	263.33^{ay}	----
Montech 4193	----	----	----	----	230.17 ^y	----	----	----	223.25	----	----
Spider	----	----	228.75	244.75 ^{ay}	232.09 ^y	----	----	226.67	228.06 ^y	249.39 ^y	----
Trapeze	----	----	----	----	----	----	----	----	233.30^y	247.52	----
Vegas	----	----	----	----	----	----	----	----	223.73 ^y	259.40 ^{ay}	----
AC Agassiz	----	----	217.50	----	228.37 ^y	----	----	----	208.47	235.76	----
AC Thunderbird	----	----	205.50	----	219.39	----	----	----	184.81	215.67	----
CDC Golden	----	----	209.50	217.25	206.46	----	----	210.33	193.64	228.48	----
CDC Meadow	----	----	197.75	205.75	187.60	----	----	180.00	187.30	215.35	----
CDC Treasure	----	----	208.00	----	----	----	----	----	205.86	213.17	----
DS Admiral	----	----	230.25 ^a	222.00	226.72 ^y	----	----	235.33 ^y	224.88 ^y	225.11	----
SW Midas	----	----	201.50	199.25	194.94	----	----	194.00	195.09	213.33	----
B10-10	----	----	----	----	----	----	----	----	180.92	212.67	----
PRL415	----	----	213.75	----	----	----	----	----	----	220.96	----
Pro 083-7406	----	----	206.50	----	----	----	----	----	----	215.97	----
Pro 127-2	----	----	----	----	----	----	----	----	----	238.97	----
PS03101822	----	----	237.50^{ay}	250.00^{ay}	234.31^y	----	----	220.00	212.83	248.17	----
Yellow Pea Means			217.43	225.17	218.55			215.82	209.11	232.43	
P-Value			<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	
LSD _{0.05} (by t)			6.99	12.33	12.27			20.37	9.74	14.54	
CV% (s/means)			2.25	3.77	2.58			5.50	3.17	3.84	
Trial Analysis:											
Trial Means[†]			214.02	218.35	212.09			205.82	204.56	224.16	
P-Value			<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	
LSD _{0.05} (by t)			7.90	14.32	9.15			17.81	8.64	13.00	
CV% (s/means)			2.61	4.63	2.12			5.23	2.95	3.59	

DISCLAIMER

The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by the Montana Agricultural Experiment Station is implied. The results of individual traits and studies are considered to be of a **preliminary** nature and should **not** be considered as a product endorsement or recommendation for commercial use.

NOT FOR PUBLICATION

Table 8. 2011 Montana Statewide Dry Pea Variety Evaluations - Dry Pea Thousand Kernels Weight Summary (Continued).
Exp: 80. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Green Pea	Bozeman	Broadview	Conrad	Corvallis	Havre	Huntley	Huntley (irrigated)	Joplin	Moccasin	Richland	Sidney
----- g 1000 kernels ⁻¹ -----											
Aragorn	----	----	219.25	----	189.26	----	----	----	181.36	212.91	----
Arcadia	----	----	198.75	196.25	192.95	----	----	204.33 ^g	186.09	203.37	----
Cruiser	----	----	204.25	212.50	193.08	----	----	184.00	174.72	197.83	----
Evergreen	----	----	----	----	----	----	----	----	207.93	248.00 ^g	----
K2	----	----	212.00	217.75 ^g	204.95	----	----	204.33 ^g	202.93	217.11	----
Majoret	----	----	232.00 ^{ag}	229.25 ^g	227.25	----	----	208.67 ^g	216.94	239.15 ^g	----
Medora	----	----	207.50	215.75 ^g	202.99	----	----	203.67 ^g	196.63	216.88	----
Montech 1103	----	----	----	----	256.21 ^{ag}	----	----	----	255.60 ^{ag}	----	----
Stirling	----	----	210.25	211.25	195.71	----	----	194.00 ^g	193.59	212.63	----
CDC Patrick	----	----	174.25	181.50	181.71	----	----	171.00	165.10	187.88	----
CDC Striker	----	----	231.25 ^{ag}	227.50 ^g	221.18	----	----	198.33 ^g	215.95	237.96 ^g	----
Pro 071-6101	----	----	228.00 ^g	----	----	----	----	----	----	218.35	----
Pro 081-6118	----	----	----	----	----	----	----	----	----	208.68	----
Pro 081-7116	----	----	227.25 ^g	----	----	----	----	----	----	----	----
Pro 081-7137	----	----	208.33	----	----	----	----	----	----	----	----
Pro 081-7142	----	----	----	----	----	----	----	----	----	200.64	----
Pro 081-7155	----	----	191.50	----	----	----	----	----	----	203.25	----
PS06100760	----	----	202.50	212.00	197.44	----	----	194.00 ^g	187.43	200.71	----
Green Pea Means			210.55	211.53	205.64			195.82	198.69	213.69	
P-Value			<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	
LSD _{0.05} (by t)			8.97	16.67	6.52			17.81	7.40	11.21	
CV% (s/means)			2.95	5.43	1.50			5.49	2.60	3.15	
Trial Analysis:											
Trial Means[†]			214.02	218.35	212.09			205.82	204.56	224.16	
P-Value			<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	
LSD _{0.05} (by t)			7.90	14.32	9.15			17.81	8.64	13.00	
CV% (s/means)			2.61	4.63	2.12			5.23	2.95	3.59	

[†] - Means for entire trial; Statewide Trial was incorporated into larger trials at different locations.

^a - Denote TKW equal to the highest trial TKW (in **bold italics**), based on a protected LSD_{0.05}.

^y - Denotes yellow pea TKW equal to the highest yellow pea TKW (in **bold**), based on LSD_{0.05} at each location.

^g - Denotes green pea TKW equal to the highest green pea TKW (in **bold**), based on LSD_{0.05} at each location.

^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

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Table 9. 2011 Montana Statewide Dry Pea Variety Evaluations - Dry Pea Flower Dates Summary.

Exp: 80. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Yellow Pea	Bozeman	Broadview	Conrad	Corvallis	Havre	Huntley	Huntley (irrigated)	Joplin	Moccasin	Richland	Sidney
						----- date -----					
Bridger	2-Jul	----	7-Jul ^y	27-Jun ^{ay}	26-Jun ^y	25-Jun ^y	23-Jun ^{ay}	----	7-Jul	----	30-Jun
Delta	2-Jul	----	8-Jul ^y	28-Jun ^{ay}	26-Jun ^y	24-Jun^y	23-Jun ^{ay}	----	6-Jul ^{ay}	----	1-Jul
Montech 4152	2-Jul ^y	----	8-Jul ^y	27-Jun^{ay}	25-Jun^y	25-Jun ^y	22-Jun^{ay}	----	6-Jul ^{ay}	----	29-Jun
Montech 4193	----	----	----	----	28-Jun	----	----	----	6-Jul ^{ay}	----	
Spider	4-Jul	----	8-Jul	2-Jul	28-Jun	27-Jun	24-Jun	----	7-Jul	----	1-Jul
Trapeze	----	----	----	----	----	----	----	----	8-Jul	----	1-Jul
Vegas	----	----	----	----	----	----	----	----	6-Jul ^{ay}	----	----
AC Agassiz	----	----	9-Jul	----	28-Jun	----	----	----	8-Jul	----	----
AC Thunderbird	----	----	13-Jul	----	2-Jul	----	----	----	8-Jul	----	----
CDC Golden	3-Jul	----	9-Jul	2-Jul	27-Jun	27-Jun	24-Jun	----	7-Jul	----	1-Jul
CDC Meadow	3-Jul	----	8-Jul	29-Jun ^y	27-Jun	27-Jun	24-Jun	----	7-Jul	----	1-Jul
CDC Treasure	----	----	9-Jul	----	----	----	----	----	9-Jul	----	1-Jul
DS Admiral	3-Jul	----	9-Jul	2-Jul	27-Jun	28-Jun	24-Jun	----	7-Jul	----	1-Jul
SW Midas	3-Jul	----	9-Jul	2-Jul	28-Jun	26-Jun ^y	24-Jun	----	9-Jul	----	1-Jul
B10-10	----	----	----	----	----	----	----	----	5-Jul^{ay}	----	----
PRL415	----	----	11-Jul	----	----	----	----	----	----	----	----
Pro 083-7406	----	----	10-Jul	----	----	----	----	----	----	----	----
Pro 127-2	----	----	----	----	----	----	----	----	----	----	----
PS03101822	1-Jul^y	----	7-Jul^y	29-Jun ^{ay}	26-Jun ^y	26-Jun ^y	23-Jun ^{ay}	----	6-Jul ^{ay}	----	28-Jun^y
Yellow Pea Means	2-Jul		9-Jul	30-Jun	27-Jun	26-Jun	23-Jun		7-Jul		30-Jun
P-Value	<0.01		<0.01	<0.01	<0.01	0.03	<0.01		<0.01		<0.01
LSD _{0.05} (by t)	0.81		0.63	2.41	1.09	2.06	1.04		1.49		0.93
CV% (s/means)	0.01		0.23	0.01	0.28	0.68	0.41		0.01		0.30
Trial Analysis:											
Trial Means[†]	2-Jul		8-Jul	30-Jun	27-Jun	26-Jun	23-Jun		7-Jul		30-Jun
P-Value	<0.01		<0.01	<0.01	<0.01	<0.01	<0.01		<0.01		<0.01
LSD _{0.05} (by t)	0.71		0.68	2.07	1.65	1.49	0.84		1.32		1.10
CV% (s/means)	0.00		0.26	0.01	0.46	0.51	0.34		0.01		0.37

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DISCLAIMER

The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by the Montana Agricultural Experiment Station is implied. The results of individual traits and studies are considered to be of a **preliminary** nature and should **not** be considered as a product endorsement or recommendation for commercial use.

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Table 9. 2011 Montana Statewide Dry Pea Variety Evaluations - Dry Pea Flower Dates Summary (Continued).

Exp: 80. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Green Pea	Bozeman	Broadview	Conrad	Corvallis	Havre	Huntley	Huntley (irrigated)	Joplin	Moccasin	Richland	Sidney
Aragorn	----	----	7-Jul	----	26-Jun	----	----	----	5-Jul ^{ag}	----	----
Arcadia	2-Jul	----	8-Jul	29-Jun	26-Jun	27-Jun	24-Jun	----	7-Jul	----	30-Jun
Cruiser	1-Jul	----	7-Jul	29-Jun ^{ag}	25-Jun ^g	25-Jun	23-Jun ^a	----	6-Jul ^{ag}	----	29-Jun
Evergreen	----	----	----	----	----	----	----	----	7-Jul	----	3-Jul
K2	1-Jul	----	7-Jul	27-Jun ^{ag}	27-Jun	26-Jun	23-Jun	----	6-Jul ^a	----	27-Jun
Majoret	3-Jul	----	9-Jul	3-Jul	29-Jun	27-Jun	25-Jun	----	7-Jul	----	2-Jul
Medora	4-Jul	----	11-Jul	3-Jul	28-Jun	29-Jun	25-Jun	----	7-Jul	----	2-Jul
Montech 1103	----	----	----	----	27-Jun	----	----	----	7-Jul	----	----
Stirling	30-Jun ^{ag}	----	6-Jul ^{ag}	27-Jun ^{ag}	23-Jun ^{ag}	22-Jun ^{ag}	22-Jun ^{ag}	----	5-Jul ^{ag}	----	24-Jun ^{ag}
CDC Patrick	----	----	11-Jul	3-Jul	29-Jun	30-Jun	----	----	9-Jul	----	2-Jul
CDC Striker	3-Jul	----	9-Jul	3-Jul	28-Jun	27-Jun	25-Jun	----	7-Jul	----	2-Jul
Pro 071-6101	----	----	7-Jul	----	----	----	----	----	----	----	----
Pro 081-6118	----	----	----	----	----	----	----	----	----	----	----
Pro 081-7116	----	----	7-Jul	----	----	----	----	----	----	----	----
Pro 081-7137	----	----	8-Jul	----	----	----	----	----	----	----	----
Pro 081-7142	----	----	----	----	----	----	----	----	----	----	----
Pro 081-7155	----	----	8-Jul	----	----	----	----	----	----	----	----
PS06100760	2-Jul	----	8-Jul	29-Jun	28-Jun	26-Jun	23-Jun	----	6-Jul ^a	----	1-Jul
Green Pea Means	3-Jul		9-Jul	1-Jul	27-Jun	27-Jun	24-Jun		7-Jul		1-Jul
P-Value	<0.01		<0.01	<0.01	0.00	<0.01	<0.01		<0.01		<0.01
LSD _{0.05} (by t)	0.53		0.75	1.78	2.15	0.74	0.61		1.12		1.32
CV% (s/means)	0.00		0.00	0.01	0.01	0.00	0.00		0.01		0.01
Trial Analysis:											
Trial Means[†]	3-Jul		9-Jul	30-Jun	27-Jun	27-Jun	24-Jun		7-Jul		1-Jul
P-Value	<0.01		<0.01	<0.01	<0.01	<0.01	<0.01		<0.01		<0.01
LSD _{0.05} (by t)	0.71		0.68	2.07	1.65	1.49	0.84		1.32		1.10
CV% (s/means)	0.00		0.00	0.01	0.01	0.01	0.01		0.01		0.01

[†] - Means for entire trial; Statewide Trial was incorporated into larger trials at different locations.

^a - Denote flower dates equal to the earliest trial flower date (in **bold italics**), based on a protected LSD_{0.05}.

^y - Denotes yellow pea flower date equal to the earliest yellow pea flower date (in **bold**), based on LSD_{0.05}, at each location.

^g - Denotes green pea flower date equal to the earliest green pea flower date (in **bold**), based on LSD_{0.05}, at each location.

^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}

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Table 10. 2011 Western Regional Dry Pea Trial - Havre, Montana Agronomic Summary

Variety	Grain Yield		Flower	Height	Test Wt.	TKW	Grain Moisture
	Harvest	13% Moist.					
	----- lb acre ⁻¹ -----		--- date ---	--- cm ---	--- lbs bu ⁻¹ ---	g 1000 kernels ⁻¹	--- % ---
Green Peas							
Aragom	1227.38	1257.25	25-Jun	28.68	64.70	186.58	10.90
Banner	1350.83 ^{ag}	1378.55 ^a	25-Jun	35.48	65.83 ^g	175.02	11.25
NDP080111	1592.77 ^{ag}	1617.73 ^a	30-Jun	43.53 ^{ag}	64.90	202.23	11.68 ^g
PS03101445	1536.62 ^{ag}	1566.63 ^a	27-Jun	34.33	65.40	183.96	11.30
PS05100632	1041.72	1071.15	21-Jun ^{ag}	36.13 ^g	64.40	184.42	10.55
PS05100736	1608.93 ^{ag}	1623.43 ^a	30-Jun	33.83	65.55	211.67 ^g	12.23 ^{ag}
PS05100840	1537.76 ^{ag}	1565.30 ^a	30-Jun	31.73	64.70	195.69	11.48
PS05ND0232	1470.50 ^{ag}	1491.13 ^a	29-Jun	41.68 ^{ag}	66.23 ^g	216.00 ^g	11.78 ^{ag}
PS07100470	1415.56 ^{ag}	1447.75 ^a	27-Jun	37.20 ^{ag}	65.33	206.17	11.03
PS07100471	1501.53 ^{ag}	1537.70 ^a	29-Jun	37.38 ^{ag}	65.58	208.77	11.05
Yellow Peas							
Carousel	1327.44 ^a	1346.63 ^a	26-Jun	35.95 ^y	66.75 ^{ay}	221.77 ^{ay}	11.75 ^y
PS02101137	1514.87 ^a	1540.23 ^a	26-Jun	37.25 ^{ay}	65.00	217.37	11.55
PS03101822	1290.99	1315.75	27-Jun	28.83	65.25	207.87	11.33
PS04100710	1313.47	1330.53 ^a	29-Jun	27.65	66.30 ^{ay}	225.94 ^{ay}	11.88 ^{ay}
PS06101119	1285.35	1306.63	27-Jun	34.13 ^y	65.43	218.88	11.58
Universal	1268.38	1288.08	23-Jun ^y	37.93 ^{ay}	66.75 ^{ay}	198.66	11.65 ^y
Green Pea Means	1428.36	1455.66	27-Jun	35.99	65.26	197.05	11.32
P-Value	0.04	0.07	<0.01	0.03	<0.01	<0.01	<0.01
LSD _{0.05} (by t)	341.36	NS	1.53	7.94	0.56	5.15	0.55
CV% (s/means)	16.55	16.84	0.60	15.28	0.59	1.81	3.37
Yellow Pea Means	1333.42	1354.64	26-Jun	33.62	65.91	215.08	11.62
P-Value	0.21	0.21	<0.01	0.00	<0.01	<0.01	<0.01
LSD _{0.05} (by t)	NS	NS	1.49	5.63	0.49	5.82	0.28
CV% (s/means)	10.76	10.82	0.56	11.27	0.51	1.82	1.61
Trial Analysis:							
Trial Means[†]	1392.76	1417.78	27-Jun	35.10	65.51	203.81	11.43
P-Value	0.02	0.03	<0.01	0.00	<0.01	<0.01	<0.01
LSD _{0.05} (by t)	293.57	303.65	1.48	7.01	0.52	5.26	0.46
CV% (s/means)	14.83	15.06	0.58	14.04	0.56	1.82	2.82

[†] - Means for entire trial; Statewide Trial was incorporated into larger trials at different locations.

^a - Denote values equal to the highest/earliest entry (in **bold italics**), based on a protected LSD_{0.05}.

^y - Denotes yellow pea values equal to the highest yellow pea entry (in **bold**), based on LSD_{0.05}.

^g - Denotes green pea values equal to the highest green pea entry (in **bold**), based on LSD_{0.05}.

^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

DISCLAIMER

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Table 11. 2011 Western Regional Dry Pea Trial - Richland, Montana Agronomic Summary
Exp: 81. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Variety	Grain Yield		Flower	Height	Test Wt.	TKW	Grain Moisture
	Harvest	13% Moist.					
	----- lb acre ⁻¹ -----		--- date ---	--- cm ---	--- lbs bu ⁻¹ ---	g 1000 kernels ⁻¹	--- % ---
Green Peas							
Aragorn	1538.00	1561.33	----	32.33	64.17 ^g	212.91	11.67
Banner	1552.00	1573.33	----	35.00	64.70 ^{ag}	204.43	11.77
NDP080111	1363.67	1391.00	----	45.00 ^a	63.27	200.84	11.23
PS03101445	1734.33 ^g	1755.00 ^g	----	36.67	64.63 ^{ag}	217.67	11.97
PS05100632	1803.67 ^g	1832.00 ^g	----	42.00 ^a	64.37 ^g	210.51	11.63
PS05100736	1623.33	1653.33	----	38.33	62.70	250.87 ^{ag}	11.37
PS05100840	1439.00	1459.00	----	36.33	64.10 ^g	200.17	11.77
PS05ND0232	1562.67	1585.67	----	43.67 ^a	63.90 ^g	232.76 ^g	11.70
PS07100470	2023.00 ^{ag}	2052.67 ^{ag}	----	37.00	64.67 ^{ag}	219.87	11.70
PS07100471	1589.33	1611.33	----	39.00	64.67 ^{ag}	213.09	11.77
Yellow Peas							
Carousel	1618.00	1636.67	----	41.67 ^{ay}	65.57 ^{ay}	245.76 ^{ay}	12.00
PS02101137	1654.67	1672.67	----	37.00	64.80 ^a	240.13 ^{ay}	12.03
PS03101822	1550.67	1572.00	----	30.00	64.17	248.17 ^{ay}	11.78
PS04100710	2206.33 ^{ay}	2227.33 ^{ay}	----	29.67	64.83 ^a	245.03 ^{ay}	12.17 ^{ns}
PS06101119	1436.67	1457.67	----	27.67	64.90 ^{ay}	246.68 ^{ay}	11.73
Universal	1497.67	1515.67	----	35.67	65.50 ^{ay}	224.11	11.97
Green Pea Means	1622.90	1647.47		38.53	64.12	231.98	11.66
P-Value	0.01	0.01		0.06	0.02	<0.01	0.49
LSD _{0.05} (by t)	305.55	306.83		NS	1.15	18.76	NS
CV% (s/means)	11.05	10.93		11.91	1.06	4.75	3.18
Yellow Pea Means	1644.95	1664.86		33.10	64.85	220.19	11.92
P-Value	<0.01	<0.01		<0.01	<0.01	0.03	0.14
LSD _{0.05} (by t)	357.63	359.37		3.06	0.71	14.85	NS
CV% (s/means)	13.05	12.95		5.55	0.66	4.05	1.81
Trial Analysis:							
Trial Means[†]	1631.98	1654.63		36.29	64.42	227.13	11.77
P-Value	<0.01	<0.01		<0.01	<0.01	<0.01	0.09
LSD _{0.05} (by t)	318.59	320.04		5.99	0.95	16.58	NS
CV% (s/means)	11.97	11.86		10.12	0.90	4.48	2.67

[†] - Means for entire trial; Statewide Trial was incorporated into larger trials at different locations.

^a - Denote values equal to the highest/earliest entry (in **bold italics**), based on a protected LSD_{0.05}.

^y - Denotes yellow pea values equal to the highest yellow pea entry (in **bold**), based on LSD_{0.05}.

^g - Denotes green pea values equal to the highest green pea entry (in **bold**), based on LSD_{0.05}.

^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

DISCLAIMER

The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by the Montana Agricultural Experiment Station is implied. The results of individual traits and studies are considered to be of a **preliminary** nature and should **not** be considered as a product endorsement or recommendation for commercial use.

NOT FOR PUBLICATION

Table 12. 2011 Western Regional Dry Pea Trial - Moccasin, Montana Agronomic Summary
 Exp: 81. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Variety	Grain Yield		Flower	Height	Test Wt.	TKW	Grain Moisture
	Harvest	13% Moist.					
	----- lb acre ⁻¹ -----		--- date ---	--- cm ---	--- lbs bu ⁻¹ ---	g 1000 kernels ⁻¹	--- % ---
Green Peas							
Aragorn	871.90	890.23	5-Jul ^{ag}	28.75	62.38	191.84	11.18
Banner	937.40	953.98	6-Jul ^{ag}	35.50 ^{ag}	63.98 ^{ag}	199.68	11.48
NDP080111	1142.50 ^{ag}	1159.53 ^{ag}	10-Jul	38.50 ^{ag}	63.95 ^{ag}	196.85	11.70 ^{ag}
PS03101445	947.15	964.05	7-Jul	31.50	63.35	195.24	11.45
PS05100632	714.55	728.70	5-Jul ^{ag}	31.50	62.60	186.75	11.28
PS05100736	1005.75	1020.20	7-Jul	31.25	63.68 ^{ag}	230.56 ^g	11.75 ^{ag}
PS05100840	1005.98	1021.88	7-Jul	35.00 ^{ag}	63.30	193.64	11.63
PS05ND0232	1065.70 ^{ag}	1079.10 ^{ag}	9-Jul	39.00 ^{ag}	64.23 ^{ag}	235.50 ^{ag}	11.90 ^{ag}
PS07100470	946.43	963.55	7-Jul	31.00	64.00 ^{ag}	220.49	11.43
PS07100471	983.50	1000.00	8-Jul	32.00	64.20 ^{ag}	212.88	11.55
Yellow Peas							
Carousel	972.65	987.23	7-Jul	33.00	64.03 ^{ay}	237.15 ^{ay}	11.70 ^a
PS02101137	1011.80	1029.05	7-Jul	28.25	62.68	226.90	11.53
PS03101822	930.40	946.23	7-Jul	27.00	63.20	222.53	11.53
PS04100710	924.20	940.63	6-Jul ^a	27.00	63.88 ^{ay}	236.31 ^{ay}	11.45
PS06101119	895.08	911.75	5-Jul ^{ay}	28.75	63.85 ^{ay}	225.45	11.38
Universal	845.40	858.53	5-Jul ^{ay}	31.00	64.00 ^{ay}	203.48	11.65
Green Pea Means	941.73	956.43	7-Jul	32.52	63.83	206.34	11.63
P-Value	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01
LSD _{0.05} (by t)	123.04	125.51	1.47	6.01	0.76	6.55	0.24
CV% (s/means)	9.05	9.09	0.01	12.80	0.81	2.20	1.45
Yellow Pea Means	1005.94	1020.99	7-Jul	34.39	64.06	225.30	11.69
P-Value	0.06	0.06	<0.01	0.12	0.01	<0.01	0.07
LSD _{0.05} (by t)	NS	NS	0.76	NS	0.75	6.10	NS
CV% (s/means)	7.07	7.13	0.00	9.68	0.79	1.82	1.31
Trial Analysis:							
Trial Means[†]	978.42	993.32	7-Jul	33.59	63.96	213.45	11.66
P-Value	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
LSD _{0.05} (by t)	114.05	116.43	1.23	5.50	0.74	6.23	0.23
CV% (s/means)	8.20	8.24	0.01	11.52	0.80	2.05	4.12

[†] - Means for entire trial; Statewide Trial was incorporated into larger trials at different locations.

^a - Denote values equal to the highest/earliest entry (in **bold italics**), based on a protected LSD_{0.05}.

^y - Denotes yellow pea values equal to the highest yellow pea entry (in **bold**), based on LSD_{0.05}.

^g - Denotes green pea values equal to the highest green pea entry (in **bold**), based on LSD_{0.05}.

^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

DISCLAIMER

The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by the Montana Agricultural Experiment Station is implied. The results of individual traits and studies are considered to be of a **preliminary** nature and should **not** be considered as a product endorsement or recommendation for commercial use.

NOT FOR PUBLICATION

Table 13. 2011 Montana Statewide Lentil Variety Evaluations - Lentil Grain Yield Summary.

Exp: 85. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Variety	Bozeman	Broadview	Conrad	Corvallis	Creston	Havre	Huntley	Huntley (irrigated)	Joplin	Moccasin	Richland	Sidney
----- lbs ac ⁻¹ (@13% moisture; w here applicable) -----												
Small Green												
Essex (2307E)	1526.71	1042.82	2842.00 ^{ns}	----	2091.13 ^a	1837.65 ^a	784.20	779.78	726.00	917.95	1096.67 ^a	1737.33 ^a
Eston	1413.04	916.09	2114.25	----	1792.47 ^a	1170.95	491.76	1305.80	671.00	641.48	850.00	1480.67 ^a
LC03601590E	1484.01	966.95	2465.33	----	2059.68 ^a	1249.85	957.58 ^{ns}	1503.92 ^a	755.67	906.93	1096.00 ^a	1337.00
Medium Green												
Brewer	1327.93	896.55	2033.75	----	1464.01	1024.45	402.33	1259.77	350.33	729.93	581.33	1061.33
CDC Richlea	1521.17	1170.40	2307.00	----	1872.51 ^a	1742.80 ^a	872.61	1098.10	616.00	1099.70	1077.25 ^a	1593.67 ^a
CDC Meteor	1690.54 ^a	1139.66	2432.50	----	1407.87	1769.70 ^a	799.00	1364.31	745.00	961.45	1099.33 ^a	1635.00 ^a
CDC Vantage	1511.24	1256.90 ^{ns}	2344.00	----	1800.74 ^a	1571.15 ^a	810.53	865.97	858.67	1102.33 ^{ns}	935.00	1609.67 ^a
LC01602300R	1561.52 ^a	1072.70	2226.33	----	2023.54 ^a	1384.75	876.73	1318.72	581.33	903.18	1398.00 ^a	1774.33 ^a
Large Green												
Merrit	1344.12	802.30	2151.25	----	1730.39 ^a	1126.50	717.48	1433.05 ^a	546.00	770.48	880.33	1418.00 ^a
Riveland	1533.82	948.56	1820.50	----	1546.89	967.95	716.99	966.26	247.00	926.43	836.00	1413.00 ^a
CDC Greenland	1520.25	1031.61	2221.25	----	1861.59 ^a	1348.30	787.22	1105.82	688.33	873.28	1219.67 ^a	1737.67 ^a
LC07600517L	1627.72 ^a	1058.05	2604.50	----	1799.49 ^a	1311.00	646.71	1093.45	435.67	853.38	1270.33 ^a	1520.33 ^a
Small Red												
Crimson	1265.78	850.29	1761.75	----	2094.64 ^a	1704.70 ^a	457.63	1668.57 ^a	773.67	911.08	858.67	981.33
CDC Impact	1139.84	476.44	1717.00	----	1466.45	1681.65 ^a	464.41	1076.61	905.67	841.05	650.33	885.67
CDC Redberry	1388.47	965.80	2317.75	----	2090.42 ^a	904.05	819.14	1722.73 ^a	785.00	764.13	932.67	1604.33 ^a
LC01602062T	1368.59	1006.32	2275.75	----	1606.56 ^a	1130.45	539.11	1188.02	517.00	773.45	901.67	1376.33 ^a
LC06601228T	1437.15	968.97	2171.50	----	1272.54	1151.70	484.90	1548.91 ^a	909.67 ^{ns}	856.63	1011.00	1213.33
Spanish Brown (Pardina)												
Morena	1520.17	1004.02	2117.25	----	1739.52 ^a	1380.65	749.10	881.76	609.33	726.93	1070.67 ^a	1491.33 ^a
Pardina	1386.07	1084.20	1997.00	----	2118.43 ^a	1386.20	548.06	1636.32 ^a	681.33	661.00	650.33	845.33
LC01602245P	1501.52	899.14	2295.00	----	2140.21 ^a	1176.75	271.16	1491.98 ^a	745.00	802.00	694.33	1104.33
Means	1453.48	977.89	2204.64		1798.95	1351.06	659.83	1265.49	657.38	851.14	957.48	1390.16
P Value	<0.01	<0.01	0.15		0.02	<0.01	0.34	<0.01	0.35	0.21	<0.01	<0.01
LSD _{0.05} (by t)	155.77	NS	NS		538.24	368.92	NS	323.61	NS	NS	348.09	414.40
CV% (s/means)	7.58	33.90	20.17		21.15	13.09	53.76	18.08	43.20	13.13	22.19	17.60
Trial Means†	1453.48	977.89	2204.64		1798.95	1351.06	659.83	1265.49	657.38	851.14	957.48	1390.16

† - Means for entire trial; Statewide Trial was incorporated into larger trials at different locations.

^a - Denote values of equal equivalence within all varieties tested, based on protected LSD_{0.05}.^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

Table 14. 2011 Montana Statewide Lentil Variety Evaluations - Lentil Mature Canopy Height Summary.
Exp: 85. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Variety	Bozeman	Broadview	Conrad	Corvallis	Creston	Havre	Huntley	Huntley (irrigated)	Joplin	Moccasin	Richland	Sidney
----- cm -----												
Small Green												
Essex (2307E)	----	28.50	34.93 ^a	----	22.23 ^a	31.65 ^a	35.00	52.25	26.25	28.50	32.33 ^a	31.00
Eston	----	27.50	29.85	----	19.69 ^a	27.95	34.75	53.25	27.94	26.75	29.00	30.33
LC03601590E	----	27.75	33.66 ^a	----	22.23 ^a	28.05	37.50 ^a	44.00	25.40	26.75	31.67 ^a	28.33
Medium Green												
Brewer	----	34.75 ^a	29.85	----	13.34	28.60	37.75 ^a	64.25^a	30.48^{ns}	29.00 ^a	29.33	31.67
CDC Richlea	----	31.75 ^a	31.12	----	19.69 ^a	35.45^a	35.75	51.25	25.40	28.25	33.00 ^a	30.00
CDC Meteor	----	34.75 ^a	34.29 ^a	----	20.32 ^a	32.75 ^a	40.75 ^a	57.25 ^a	28.79	31.00 ^a	32.00 ^a	35.33 ^a
CDC Vantage	----	32.50 ^a	33.02 ^a	----	15.88	32.10 ^a	38.75 ^a	46.75	27.94	30.25 ^a	32.00 ^a	33.33 ^a
LC01602300R	----	31.75 ^a	32.39 ^a	----	22.23 ^a	31.15	37.75 ^a	56.50 ^a	27.94	29.50 ^a	33.00 ^a	35.67 ^a
Large Green												
Merrit	----	30.50 ^a	32.39 ^a	----	17.15	29.50	35.75	60.25 ^a	27.94	28.25	32.33 ^a	30.00
Riveland	----	35.75^a	34.29 ^a	----	24.13 ^a	32.95 ^a	39.00 ^a	53.00	29.63	31.75^a	35.67 ^a	34.67 ^a
CDC Greenland	----	33.50 ^a	34.29 ^a	----	17.15	31.90 ^a	40.75 ^a	53.25	29.63	29.25 ^a	35.67^a	36.67^a
LC07600517L	----	33.50 ^a	36.20^a	----	17.15	26.85	42.00^a	57.75 ^a	24.55	30.25 ^a	35.67 ^a	33.67 ^a
Small Red												
Crimson	----	26.50	27.31	----	17.78	23.60	31.75	38.25	27.09	25.50	27.33	25.00
CDC Impact	----	25.25	29.85	----	19.05 ^a	25.65	30.00	46.50	26.25	23.75	30.33	26.00
CDC Redberry	----	31.25 ^a	33.02 ^a	----	24.77^a	27.70	35.00	51.50	27.94	28.50	33.67 ^a	32.00
LC01602062T	----	30.25 ^a	29.85	----	17.15	27.80	34.00	50.25	26.25	27.50	28.67	29.00
LC06601228T	----	29.75	29.85	----	18.42 ^a	26.15	34.25	48.25	29.63	27.75	29.33	29.00
Spanish Brown (Pardina)												
Morena	----	31.00 ^a	31.75	----	17.78	27.40	37.50 ^a	56.00 ^a	25.40	29.50 ^a	33.00 ^a	31.67
Pardina	----	26.75	27.94	----	10.16	25.85	34.75	47.00	23.71	23.50	24.67	27.33
LC01602245P	----	25.00	27.31	----	12.07	23.55	31.50	46.00	24.55	24.75	29.00	28.67
Means		30.41	31.65		18.42	28.83	36.21	51.68	27.14	28.01	31.41	30.97
P Value		0.01	<0.01		<0.01	<0.01	0.01	<0.01	0.12	<0.01	<0.01	<0.01
LSD _{0.05} (by t)		5.99	4.24		6.66	3.93	6.22	8.32	NS	2.86	4.15	4.27
CV% (s/means)		13.92	9.48		25.59	6.53	12.15	11.38	9.96	7.22	8.06	8.36
Trial Means[†]		30.41	31.65		18.42	28.83	36.21	51.68	27.14	28.01	31.41	30.97

[†] - Means for entire trial; Statewide Trial was incorporated into larger trials at different locations.

^a - Denote values of equal equivalence within all varieties tested, based on protected LSD_{0.05}.

^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

Table 15. 2011 Montana Statewide Lentil Variety Evaluations - Lentil Test Weight Summary.

Exp: 85. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Variety	Bozeman	Broadview	Conrad	Corvallis	Creston	Havre	Huntley	Huntley (irrigated)	Joplin	Moccasin	Richland	Sidney
----- lbs bu ⁻¹ -----												
Small Green												
Essex (2307E)	----	61.73	62.13	----	62.88	67.85 ^a	58.98	56.18	----	63.08	63.87 ^a	62.17
Eston	----	62.93	64.60 ^a	----	64.45	64.95	61.45	60.28 ^a	----	64.03	64.23 ^a	63.67 ^a
LC03601590E	----	62.25	63.50	----	63.95	64.40	60.10	58.43	----	63.03	63.40 ^a	62.17
Medium Green												
Brewer	----	58.88	61.08	----	61.13	62.95	56.95	55.63	----	60.08	60.77	60.00
CDC Richlea	----	59.95	61.33	----	61.60	62.15	57.98	56.18	----	61.75	62.08	60.50
CDC Meteor	----	60.65	62.70	----	62.70	62.80	58.28	57.05	----	62.20	62.07	61.17
CDC Vantage	----	61.50	62.88	----	63.10	63.30	58.40	56.60	----	62.85	61.63	61.50
LC01602300R	----	60.98	62.70	----	62.83	64.55	58.80	57.65	----	62.40	62.87 ^a	61.33
Large Green												
Merrit	----	58.63	60.40	----	60.78	60.75	56.70	54.80	----	60.05	60.13	59.50
Riveland	----	58.48	59.85	----	60.05	60.70	56.43	54.98	----	60.05	59.60	59.17
CDC Greenland	----	57.68	59.83	----	59.43	59.40	55.23	52.65	----	59.45	59.50	58.50
LC07600517L	----	59.40	61.38	----	61.53	61.40	57.13	55.08	----	60.60	60.90	60.67
Small Red												
Crimson	----	62.73	63.80	----	64.73	62.10	61.45	60.60 ^a	----	63.80	64.67 ^a	62.67
CDC Impact	----	63.58 ^a	64.33 ^a	----	65.10	64.80	62.53 ^a	61.08 ^a	----	64.68	65.00 ^a	63.33
CDC Redberry	----	62.28	62.93	----	64.05	63.65	60.65	60.65 ^a	----	63.43	63.73 ^a	63.00
LC01602062T	----	62.40	63.43	----	63.45	64.15	58.90	53.75	----	63.48	60.97	62.83
LC06601228T	----	63.85 ^a	64.93 ^a	----	65.65 ^a	65.65 ^a	61.83 ^a	59.20	----	60.38	64.50 ^a	64.33 ^a
Spanish Brown (Pardina)												
Morena	----	63.80 ^a	64.93 ^a	----	65.28 ^a	65.80 ^a	62.55 ^a	60.70 ^a	----	60.45	64.87 ^a	64.00 ^a
Pardina	----	63.73 ^a	64.88 ^a	----	65.48 ^a	65.85 ^a	62.40 ^a	58.33	----	64.80 ^{ns}	64.90 ^a	63.50
LC01602245P	----	63.68 ^a	64.40 ^a	----	65.38 ^a	65.50 ^a	61.80 ^a	59.20	----	62.30	62.03	63.67 ^a
Means		61.45	62.75		63.18	63.64	59.43	57.45		62.14	62.58	61.98
P Value		<0.01	<0.01		<0.01	<0.01	<0.01	<0.01		0.35	<0.01	<0.01
LSD _{0.05} (by t)		0.62	0.85		0.42	2.73	0.85	1.07		NS	2.27	0.67
CV% (s/means)		0.71	0.92		0.47	2.06	0.90	1.32		5.09	2.21	0.64
Trial Means[†]		61.45	62.75		63.18	63.64	59.43	57.45		62.14	62.58	61.98

[†] - Means for entire trial; Statewide Trial was incorporated into larger trials at different locations.^a - Denote values of equal equivalence within all varieties tested, based on protected LSD_{0.05}.^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

Table 16. 2011 Montana Statewide Lentil Variety Evaluations - Lentil Thousand Kernel Weights Summary.

Exp: 85. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Variety	Bozeman	Broadview	Conrad	Corvallis	Creston	Havre	Huntley	Huntley (irrigated)	Joplin	Moccasin	Richland	Sidney
----- g 1000 kernels ⁻¹ -----												
Small Green												
Essex (2307E)	----	----	45.00	----	43.75	46.05	----	----	41.00	44.39	52.37	----
Eston	----	----	33.75	----	35.25	35.75	----	----	35.00	34.15	37.97	----
LC03601590E	----	----	39.00	----	39.00	39.65	----	----	44.33	36.99	45.34	----
Medium Green												
Brewer	----	----	60.50	----	55.25	56.35	----	----	53.00	57.15	68.62	----
CDC Richlea	----	----	52.25	----	51.50	52.95	----	----	53.33	50.54	60.34	----
CDC Meteor	----	----	53.00	----	50.25	53.80	----	----	50.00	47.67	58.66	----
CDC Vantage	----	----	53.25	----	49.50	53.75	----	----	48.33	51.35	57.67	----
LC01602300R	----	----	47.25	----	49.00	51.50	----	----	47.67	49.00	58.46	----
Large Green												
Merrit	----	----	64.00	----	60.00	56.00	----	----	58.50 ^a	61.79	77.54	----
Riveland	----	----	74.50^a	----	69.75^a	70.80^a	----	----	61.50 ^a	70.60^a	83.14^a	----
CDC Greenland	----	----	68.25	----	64.50	67.65	----	----	62.67^a	63.79	76.42	----
LC07600517L	----	----	64.00	----	60.25	61.15	----	----	50.67	58.43	71.98	----
Small Red												
Crimson	----	----	34.50	----	35.00	33.45	----	----	35.67	32.88	40.14	----
CDC Impact	----	----	37.25	----	35.75	34.95	----	----	34.33	34.26	38.59	----
CDC Redberry	----	----	42.25	----	42.75	45.50	----	----	39.00	41.11	46.98	----
LC01602062T	----	----	46.00	----	39.25	42.85	----	----	42.00	44.38	51.50	----
LC06601228T	----	----	49.75	----	46.25	46.05	----	----	46.33	46.36	54.83	----
Spanish Brown (Pardina)												
Morena	----	----	39.50	----	39.00	38.00	----	----	37.33	36.08	43.34	----
Pardina	----	----	40.50	----	40.25	35.35	----	----	38.67	35.58	43.63	----
LC01602245P	----	----	40.75	----	39.75	37.25	----	----	37.33	37.03	43.90	----
Means			49.26		47.30	47.94			45.21	46.68	55.65	
P Value			<0.01		<0.01	<0.01			<0.01	<0.01	<0.01	
LSD _{0.05} (by t)			3.14		2.10	1.92			7.77	3.13	1.80	
CV% (s/means)			4.51		3.14	1.92			10.02	4.73	2.67	
Trial Means[†]			49.26		47.30	47.94			45.21	46.68	55.65	

[†] - Means for entire trial; Statewide Trial was incorporated into larger trials at different locations.

^a - Denote values of equal equivalence within all varieties tested, based on protected LSD_{0.05}.

^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

Table 17. 2011 Montana Statewide Lentil Variety Evaluations - Lentil Flower Dates Summary.

Exp: 85. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Variety	Bozeman	Broadview	Conrad	Corvallis	Creston	Havre	Huntley	Huntley (irrigated)	Joplin	Moccasin	Richland	Sidney
----- date -----												
Small Green												
Essex (2307E)	1-Jul	----	11-Jul	----	5-Jul	26-Jun	25-Jun	24-Jun	----	7-Jul	----	28-Jun
Eston	1-Jul	----	8-Jul	----	5-Jul	26-Jun	24-Jun	24-Jun ^a	----	6-Jul	----	26-Jun
LC03601590E	1-Jul	----	10-Jul	----	6-Jul	25-Jun ^a	25-Jun	24-Jun	----	6-Jul	----	26-Jun
Medium Green												
Brewer	1-Jul	----	7-Jul^a	----	2-Jul ^a	24-Jun ^a	23-Jun ^a	24-Jun	----	5-Jul ^a	----	24-Jun ^a
CDC Richlea	1-Jul	----	11-Jul	----	6-Jul	26-Jun	25-Jun	24-Jun	----	6-Jul	----	27-Jun
CDC Meteor	1-Jul	----	9-Jul	----	5-Jul	25-Jun ^a	24-Jun	24-Jun	----	7-Jul	----	27-Jun
CDC Vantage	1-Jul	----	9-Jul	----	4-Jul	25-Jun ^a	24-Jun	24-Jun	----	5-Jul^a	----	27-Jun
LC01602300R	1-Jul	----	8-Jul	----	6-Jul	26-Jun	24-Jun	24-Jun	----	6-Jul	----	26-Jun
Large Green												
Merrit	1-Jul	----	7-Jul ^a	----	1-Jul^a	23-Jun^a	23-Jun ^a	24-Jun ^a	----	5-Jul ^a	----	24-Jun^a
Riveland	1-Jul	----	8-Jul	----	2-Jul ^a	24-Jun ^a	24-Jun	24-Jun	----	5-Jul ^a	----	25-Jun
CDC Greenland	1-Jul	----	12-Jul	----	5-Jul	26-Jun	25-Jun	24-Jun	----	----	----	28-Jun
LC07600517L	30-Jun^{ns}	----	10-Jul	----	5-Jul	26-Jun	25-Jun	24-Jun	----	----	----	27-Jun
Small Red												
Crimson	1-Jul	----	10-Jul	----	5-Jul	26-Jun	25-Jun	23-Jun ^a	----	6-Jul ^a	----	27-Jun
CDC Impact	2-Jul	----	8-Jul	----	4-Jul	27-Jun	25-Jun	24-Jun	----	5-Jul ^a	----	27-Jun
CDC Redberry	1-Jul	----	11-Jul	----	5-Jul	27-Jun	26-Jun	24-Jun	----	----	----	27-Jun
LC01602062T	30-Jun	----	8-Jul ^a	----	2-Jul ^a	25-Jun ^a	23-Jun ^a	23-Jun ^a	----	5-Jul ^a	----	25-Jun
LC06601228T	1-Jul	----	8-Jul ^a	----	1-Jul ^a	24-Jun ^a	23-Jun ^a	23-Jun ^a	----	5-Jul ^a	----	25-Jun ^a
Spanish Brown (Par)												
Morena	1-Jul	----	8-Jul	----	3-Jul	24-Jun ^a	24-Jun	24-Jun	----	----	----	27-Jun
Pardina	1-Jul	----	8-Jul	----	3-Jul	24-Jun ^a	23-Jun^a	23-Jun^a	----	6-Jul	----	26-Jun
LC01602245P	1-Jul	----	8-Jul	----	3-Jul ^a	25-Jun ^a	23-Jun ^a	24-Jun ^a	----	6-Jul ^a	----	24-Jun ^a
Means	1-Jul		9-Jul		4-Jul	25-Jun	24-Jun	24-Jun		6-Jul		26-Jun
P Value	0.54		<0.01		<0.01	0.01	<0.01	<0.01		<0.01		<0.01
LSD _{0.05} (by t)	NS		0.72		1.96	2.03	0.47	0.55		0.87		1.54
CV% (s/means)	0.01		0.27		0.75	0.55	0.19	0.22		0.00		0.53
Trial Means[†]	1-Jul		9-Jul		4-Jul	25-Jun	24-Jun	24-Jun		6-Jul		26-Jun

[†] - Means for entire trial; Statewide Trial w as incorporated into larger trials at different locations.

^a - Denote values of equal equivalence within all varieties tested, based on protected LSD_{0.05}.

^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

Table 18. 2011 Western Regional Lentil Trial - Havre, Montana Agronomic Summary

Variety	Grain Yield		Flower	Height	Test Wt.	TKW	Grain Moisture
	Harvest	13% Moist.					
	----- lb acre ⁻¹ -----		--- date ---	--- cm ---	--- lbs bu ⁻¹ ---	g 1000 kernels ⁻¹	--- % ---
Small Green							
Essex	1491.08 ^a	1538.58 ^a	25-Jun	27.53	63.70	47.95	10.23
Eston	931.95	967.13	25-Jun	25.87	64.87	34.62	9.73
LC036001590E	1256.57	1295.29	26-Jun	27.77	63.80	40.35	10.33
LC01602273E	1065.51	1100.71	24-Jun ^a	26.03	64.50	37.78	10.13
LC05600812E	1080.36	1104.85	27-Jun	26.40	64.57	43.60	11.03 ^a
LC08600005E	1288.55 ^a	1328.05 ^a	23-Jun ^a	27.17	64.57	49.92	10.33
LC07ND068E	912.17	942.15	24-Jun	28.50	63.97	42.00	10.17
Medium Green							
Brewer	629.75	652.68	22-Jun ^a	27.03	60.37	56.05	9.83
CDC Impress CL	1140.79	1175.06	24-Jun ^a	30.30 ^{ns}	62.43	53.73	10.40
CDC Richlea	1171.09	1206.50	26-Jun	27.77	61.77	54.50	10.37
LC01602300R	1070.75	1098.86	25-Jun	27.60	62.47	53.00	10.70
LC07600591R	1024.44	1057.43	23-Jun ^a	28.20	61.80	66.87	10.23
LC07ND055R	758.56	784.15	24-Jun	25.53	63.97	38.57	10.10
Large Green							
Merrit	853.65	884.01	23-Jun ^a	23.97	59.67	66.00	9.90
LC06600839L	788.05	807.85	24-Jun ^a	27.57	59.63	81.23 ^a	10.80 ^a
LC06601734L	784.58	805.79	25-Jun	29.33	60.30	73.15	10.63
Small Red							
Crimson	1000.46	1040.20	25-Jun	24.60	64.33	33.48	9.57
CDC Maxim CL	838.10	865.19	27-Jun	26.20	64.17	40.50	10.20
LC01602062T	805.62	835.21	23-Jun ^a	24.53	64.07	45.65	9.83
LC07ND176T	802.81	834.32	30-Jun	25.67	64.13	34.17	9.60
LC07ND202T	712.44	737.27	30-Jun	25.10	66.10 ^a	33.65	9.97
Extra Small Red							
CDC Impala CL	987.10	1022.72	29-Jun	25.40	65.27	31.45	9.87
Spanish Brown (Pardina)							
Morena	1102.35	1140.55	24-Jun	29.03	65.50	38.87	10.00
Pardina	1127.02	1166.28	24-Jun ^a	24.87	65.10	37.35	9.97
LC08600113P	1257.30	1300.04	26-Jun	26.67	64.33	45.78	10.03
LC08600114P	899.46	928.08	25-Jun	24.27	64.37	47.87	10.23
Zero-Tanin							
Cedar	927.47	949.41	24-Jun	28.60	65.03	50.15	10.97 ^a
Shasta	991.78	1012.69	25-Jun	28.67	63.37	62.12	11.17 ^a
LC99602585RZ	899.59	926.83	24-Jun ^a	26.97	64.83	45.38	10.37
LC06600939YZ	903.24	925.26	23-Jun ^a	26.30	62.40	69.03	10.90 ^a
Means	983.42	1014.44	25-Jun	26.78	63.51	48.49	10.25
P Value	<0.01	<0.01	<0.01	0.07	<0.01	<0.01	<0.01
LSD _{0.05} (by t)	213.59	221.94	1.46	NS	0.43	1.75	0.37
CV% (s/means)	13.30	13.40	0.51	8.44	0.42	2.21	2.24
Trial Means[†]	983.42	1014.44	25-Jun	26.78	63.51	48.49	10.25

[†] - Means for entire trial; Statewide Trial was incorporated into larger trials at different locations.

^a - Denote values of equal equivalence within all varieties tested, based on protected LSD_{0.05}.

^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

Table 19. 2011 Western Regional Lentil Trial - Richland, Montana Agronomic Summary
 Exp: 86. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Variety	Grain Yield		Flower	Height	Test Wt.	TKW	Grain Moisture
	Harvest	13% Moist.					
	----- lb acre ⁻¹ -----		--- date ---	--- cm ---	--- lbs bu ⁻¹ ---	g 1000 kernels ⁻¹	--- % ---
Small Green							
Essex	1063.67	1096.67	----	32.33 ^a	63.87	52.37	10.30 ^a
Eston	818.33	850.00	----	29.00	64.23	37.97	9.67
LC036001590E	1060.00	1096.00	----	31.67 ^a	63.40	45.34	10.07 ^a
LC01602273E	802.67	830.00	----	30.00	63.97	42.17	9.97 ^a
LC05600812E	772.67	798.33	----	30.33	63.97	47.69	10.13 ^a
LC08600005E	1396.00 ^a	1448.33 ^a	----	35.00 ^a	63.60	55.78	9.73
LC07ND068E	748.33	774.00	----	31.33 ^a	64.20	45.86	10.03 ^a
Medium Green							
Brewer	559.00	581.33	----	29.33	60.77	68.62	9.50
CDC Impress CL	1144.67 ^a	1185.67 ^a	----	31.67 ^a	62.00	59.98	9.87
CDC Richlea	1043.00	1077.25	----	33.00 ^a	62.08	60.34	10.13 ^a
LC01602300R	1351.67 ^a	1398.00 ^a	----	33.00 ^a	62.87	58.46	10.00 ^a
LC07600591R	836.00	868.00	----	32.33 ^a	61.27	72.99	9.70
LC07ND055R	812.00	839.33	----	28.00	63.70	43.55	10.07 ^a
Large Green							
Merrit	847.00	880.33	----	32.33 ^a	60.13	77.54	9.60
LC06600839L	911.67	944.00	----	35.00 ^a	60.17	92.21 ^a	9.93 ^a
LC06601734L	1026.00	1062.67	----	34.67 ^a	59.90	81.30	9.83
Small Red							
Crimson	827.33	858.67	----	27.33	64.67	40.14	9.67
CDC Maxim CL	814.67	842.33	----	27.33	64.50	42.97	10.00 ^a
LC01602062T	868.33	901.67	----	28.67	60.97	51.50	9.60
LC07ND176T	1023.00	1060.67	----	31.33 ^a	65.87 ^a	37.53	9.77
LC07ND202T	650.67	676.67	----	26.33	65.87 ^a	34.23	9.57
Extra Small Red							
CDC Impala CL	1118.67 ^a	1157.33 ^a	----	29.67	65.57 ^a	32.89	9.93 ^a
Spanish Brown (Pardina)							
Morena	1031.00	1070.67	----	33.00 ^a	64.87 ^a	43.34	9.67
Pardina	627.67	650.33	----	24.67	64.90 ^a	43.63	9.87
LC08600113P	679.33	703.67	----	30.00	63.87	53.88	9.90
LC08600114P	675.00	698.33	----	28.00	64.37	55.32	9.97 ^a
Zero-Tanin							
Cedar	870.00	903.33	----	33.00 ^a	63.97	53.19	9.53
Shasta	647.00	672.00	----	35.00 ^a	62.50	64.45	9.57
LC99602585RZ	599.00	622.00	----	32.00 ^a	64.65	48.94	9.70
LC06600939YZ	1035.33	1072.00	----	35.33 ^a	62.50	73.16	9.93 ^a
<hr/>							
Means	893.59	925.71		31.03	63.28	54.04	9.84
P Value	<0.01	<0.01		<0.01	<0.01	<0.01	0.00
LSD _{0.05} (by t)	321.22	331.21		4.40	1.16	1.58	0.39
CV% (s/means)	21.92	21.82		8.64	1.12	1.78	2.43
Trial Means[†]	893.59	925.71		31.03	63.28	54.04	9.84

[†] - Means for entire trial; Statewide Trial was incorporated into larger trials at different locations.

^a - Denote values of equal equivalence within all varieties tested, based on protected LSD_{0.05}.

^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

Table 20. 2011 Western Regional Lentil Trial - Moccasin, Montana Agronomic Summary
 Exp: 86. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Variety	Grain Yield		Flower	Height	Test Wt.	TKW	Grain Moisture
	Harvest	13% Moist.					
	----- lb acre ⁻¹ -----		--- date ---	--- cm ---	--- lbs bu ⁻¹ ---	g 1000 kernels ⁻¹	--- % ---
Small Green							
Essex	817.43 ^a	858.20 ^a	6-Jul ^a	28.33	63.10	43.27	8.63
Eston	708.87	743.87	7-Jul	27.67	64.33	33.58	8.70
LC036001590E	787.23 ^a	824.67 ^a	6-Jul	26.33	63.43	35.96	8.87 ^a
LC01602273E	831.47 ^a	869.87 ^a	6-Jul ^a	27.33	64.00	35.07	8.97 ^a
LC05600812E	782.63 ^a	818.63 ^a	5-Jul ^a	27.33	63.87	38.27	9.00^a
LC08600005E	962.67^a	1013.57^a	6-Jul ^a	30.67 ^a	64.07	45.94	8.40
LC07ND068E	720.53	755.83	6-Jul ^a	27.00	63.67	39.13	8.73
Medium Green							
Brewer	686.37	721.50	5-Jul ^a	30.67 ^a	60.57	55.72	8.57
CDC Impress CL	938.30 ^a	985.23 ^a	7-Jul	29.00 ^a	61.50	47.73	8.63
CDC Richlea	778.30 ^a	816.43 ^a	5-Jul ^a	29.33 ^a	62.23	51.65	8.73
LC01602300R	764.17	802.00	6-Jul	27.67	62.33	48.40	8.70
LC07600591R	625.13	657.40	6-Jul ^a	29.33 ^a	62.13	58.41	8.50
LC07ND055R	639.43	670.03	6-Jul	26.33	63.87	35.51	8.83 ^a
Large Green							
Merrit	782.73 ^a	823.87 ^a	5-Jul ^a	30.67 ^a	59.33	61.48	8.40
LC06600839L	558.60	585.90	6-Jul ^a	28.67 ^a	59.07	68.75^a	8.73
LC06601734L	701.77	735.37		29.67 ^a	60.20	67.78 ^a	8.80 ^a
Small Red							
Crimson	931.43 ^a	979.70 ^a	5-Jul ^a	26.33	63.97	33.13	8.50
CDC Maxim CL	648.30	680.67	5-Jul ^a	27.00	63.90	36.53	8.67
LC01602062T	801.33 ^a	839.27 ^a	5-Jul ^a	26.67	63.53	43.18	8.87 ^a
LC07ND176T	810.50 ^a	854.57 ^a		28.67 ^a	64.67	30.91	8.27
LC07ND202T	523.83	552.03		24.33	60.97	29.17	8.30
Extra Small Red							
CDC Impala CL	661.07	695.50	6-Jul ^a	26.33	64.77	27.16	8.47
Spanish Brown (Pardina)							
Morena	771.00 ^a	809.13 ^a	5-Jul^a	28.00	65.13^{ns}	35.11	8.70
Pardina	936.07 ^a	980.13 ^a	6-Jul ^a	24.67	64.67	36.63	8.90 ^a
LC08600113P	851.47 ^a	892.53 ^a	7-Jul	28.67 ^a	64.20	41.00	8.80 ^a
LC08600114P	904.60 ^a	946.13 ^a	6-Jul ^a	27.67	64.37	45.26	9.00 ^a
Zero-Tanin							
Cedar	448.67	473.93	6-Jul	28.67 ^a	42.67	42.29	8.10
Shasta	561.07	591.67		29.00 ^a	63.10	52.56	8.23
LC99602585RZ	556.80	588.17	6-Jul	26.67	64.77	39.33	8.10
LC06600939YZ	645.27	681.60	5-Jul ^a	31.33^a	61.60	59.37	8.10
Means	737.90	774.91	6-Jul	28.00	62.33	43.94	8.61
P Value	<0.01	<0.01	0.01	<0.01	0.39	<0.01	<0.01
LSD _{0.05} (by t)	196.16	205.12	0.99	2.80	NS	2.12	0.26
CV% (s/means)	16.28	16.21	0.0044	6.13	10.88	2.96	1.86
Trial Means[†]	737.90	774.91	6-Jul	28.00	62.33	43.94	8.61

[†] - Means for entire trial; Statewide Trial was incorporated into larger trials at different locations.

^a - Denote values of equal equivalence within all varieties tested, based on protected LSD_{0.05}.

^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

Table 21. 2011 Chickpea variety/Line Evaluations - Agronomic Summary
 Exp: 89. Montana Ag. Experiment Stations - Central Ag. Research Center, Moccasin, MT

Variety	Grain Yield				Grain Moisture			Grain Mature Ht.			Test Weights			TKW	Flower Date	
	Conrad	Havre ^{1/2/}	Mocc. ^{1/}	Rich. ^{1/}	Havre	Mocc.	Rich.	Conrad	Mocc.	Rich.	Havre	Mocc.	Rich.	Conrad	Havre	Mocc.
	----- lbs ac ⁻¹ -----				----- % -----			----- cm -----			----- lbs bu ⁻¹ -----			----- g 1000 kernels ¹ -----	----- date -----	
CDC Frontier	3422.33 ^{ns}	1005.40 ^a	823.87	1605.93 ^a	7.10	10.27 ^a	9.63 ^a	43.18	31.00	31.33	62.07 ^a	58.23 ^a	58.40 ^{ns}	367.00	4-Jul ^a	9-Jul ^a
Dwellely	2474.00	249.06	817.33	466.80	7.00	10.10 ^a	8.43	44.87	38.67 ^a	35.67	61.10 ^a	56.30	38.03	519.67 ^a	15-Jul	13-Jul
Dylan	2871.67	49.34	1047.40	573.78	6.97	9.73	8.03	38.10	30.33	30.50	60.67	54.77	53.18	539.33 ^a	13-Jul	10-Jul ^a
Myles	2748.67	1237.15 ^a	995.80	1096.03 ^a	7.43 ^a	9.23	9.57 ^a	42.33	31.33	32.00	59.57	56.13	57.60	203.67	8-Jul ^a	11-Jul
Sawyer	2905.67	762.51	1061.60	1328.03 ^a	7.00	10.20 ^a	9.17	45.72	36.67	37.67 ^a	61.53 ^a	58.03 ^a	58.30	456.67	9-Jul ^a	11-Jul
Sierra	2738.67	438.79	990.33	710.03	7.00	10.67 ^a	8.63	48.26 ^{ns}	37.33 ^a	36.67	61.10 ^a	56.47	37.33	510.33	8-Jul ^a	11-Jul
CA0390B007C	-----	365.74	963.67	1241.40 ^a	6.77	9.70	10.17 ^a	-----	34.67	40.33 ^a	60.17	58.20 ^a	56.83	-----	10-Jul ^a	10-Jul ^a
CA04900421C	-----	268.75	1029.13	1593.15 ^a	6.97	9.63	9.20	-----	29.00	33.50	60.00	57.03	57.05	-----	13-Jul	11-Jul ^a
CA04900843C	-----	96.46	1105.33 ^{ns}	987.55	6.87	9.27	8.65	-----	33.67	34.50	60.03	55.80	55.20	-----	14-Jul	10-Jul ^a
CA0690B0250C	-----	460.88	993.47	754.50	6.77	9.27	9.10	-----	42.00 ^a	44.00 ^a	61.17 ^a	57.67 ^a	58.00	-----	5-Jul ^a	10-Jul ^a
CA0690B0409C	-----	544.68	1044.97	1082.80 ^a	6.87	10.47 ^a	9.20	-----	37.67 ^a	36.67	62.03 ^a	57.80 ^a	58.17	-----	8-Jul ^a	11-Jul
IS-14	-----	381.44	919.17	686.68	6.90	9.80 ^a	8.23	-----	34.67	28.75	60.33	57.57 ^a	43.28	-----	5-Jul ^a	10-Jul ^a
Means	2860.17	488.35	982.67	1010.56	6.97	9.86	9.00	43.74	34.75	35.13	60.81	57.00	52.61	432.78	9-Jul	11-Jul
P-value	0.44	<0.01	0.17	<0.01	<0.01	0.03	<0.01	0.36	<0.01	<0.01	<0.01	<0.01	0.71	0.00	0.02276	0.03
LSD _{0.05} (by t)	NS	256.21	NS	557.38	0.27	0.89	0.95	NS	4.89	6.52	1.11	0.96	NS	25.17	6.44146	1.56
CV% (s/means)	18.76	31.13	12.59	32.07	2.28	5.34	6.14	12.47	8.35	10.79	1.08	1.00	32.04	3.27	2.007696758	0.00
Trial Means²	2860.17	488.35	982.67	1010.56	6.97	9.86	9.00	43.74	34.75	35.13	60.81	57.00	52.61	432.78	9-Jul	11-Jul

^a - Denote values of equal equivalence within all varieties tested, based on protected LSD_{0.05}

^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}

^{1/} - Yields were adjusted to 13% moisture

^{2/} - Severe deer damage

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DISCLAIMER

The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by the Montana Agricultural Experiment Station is implied. The results of individual traits and studies are considered to be of a **preliminary** nature and should **not** be considered as a product endorsement or recommendation for commercial use.

NOT FOR PUBLICATION

Table 22. 2011 Statewide Dry Pea Variety Evaluations - 2008-2011 Preliminary Multi-year Grain Yield Summary.
Exp: 80. MSU-Montana Ag. Experiment Stations, Central Ag. Research Center, Moccasin, Montana.

Variety	Bozeman				Conrad				Corvallis				Havre				Huntley			
	2008	2009	2010	2011	2008	2009	2010	2011	2008	2009	2010	2011	2008	2009	2010	2011	2008	2009	2010	2011
Yellow Peas	----- lb/ac -----				----- lb/ac -----				----- lb/ac -----				----- lb/ac -----				----- lb/ac -----			
Delta	1882 ^a	2158	3118 ^a	2105	2177 ^a	3996 ^a	869	2832	1725	3276 ^a	3671	1674	3021 ^a	2446 ^a	3600 ^a	2139	1612 ^a	2542	2517	1904
DS Admiral	1846 ^a	2486 ^a	3439 ^a	2206	1966 ^a	3607	1212	3070 ^{ns}	1844	2882 ^a	2941	1770	2789	2331 ^a	3325	2102		2669	2743	2128 ^{ns}
CDC Golden		2271	3132 ^a	2291		3400	1154	2736		3125 ^a	3387	2019 ^{ns}	3141 ^a	2349 ^a	3354	2340 ^{ns}		2356	2808	2120
SW Midas		2018	3436 ^a	2382 ^{ns}		3620	1212	2774		2828	4029 ^a	1998	2849	2314 ^a	3348	2111		2329	2760	2106
CDC Mozart	1604	2794 ^a	3150 ^a		2033 ^a	4223 ^a	1191		1767	3457 ^a	3889 ^a		3320 ^a	2554 ^a	3850 ^a		1439	2979 ^a	3104 ^{ns}	
PS9910140		1766	3303 ^a		2203 ^a	3932 ^a	1664 ^a		2971 ^{ns}	3072 ^a	4331 ^a		3122 ^a	2368 ^a	3490		1885 ^a	2612	2600	
PS0010836		2097	3330 ^a		1877 ^a	3606	932		1690	3284 ^a	2990		3249 ^a	2383 ^a	3496		1078	2802 ^a	2939	
PS01102958		1959	3305 ^a		2287 ^a	3931 ^a	1211		1541	2531	3478		2726	1974	3492		1271	2442	2715	
Green Peas																				
Majoret	1766	2218	3008 ^a	2039	1884 ^a	3345	1623 ^a	2382	2074	3278 ^a	3812	1641	2694	2352 ^a	3451	1612	1277	2501	2945	1660
Cruiser	1438	2247	3041 ^a	2152	1592	3154	965	2746	1332	3046 ^a	3144	1967	2735	2254	3194	2286		2520	2575	1998
Medora	1697	2389	2749	2157	1811 ^a	2917	1161	2492	1763	3252 ^a	3014	1800	2576	2172	3063	2109	1266	2284	2210	1891
Stirling	1994 ^a	2031	3288 ^a	2184	1887 ^a	3932 ^a	926	2651	1654	3144 ^a	3525	1475	3103 ^a	2327 ^a	3274	1915	1841 ^a	2633	2874	1527
CDC Striker		2343	2585	2081		3189	1147	2632		3144 ^a	3068	1866	2682	2154	3222	2012		2417	2556	1568
Statewide Means	1747	2214	3145	2177	1836	3585	1174	2702	1835	3101	3483	1801	2942	2306	3397	2069	1486	2545	2719	1878
LSD (p=0.05)	227	310	639.8	NS	583	479	298	NS	NS	627	495	NS	317	290	325	NS	355	274	NS	NS
CV%	9	10	14	7	19	8	18	14	39	14	10	23	8	9	7	13	17	8	12	20
Trial Means†	1747	2214	3145	2177	1836	3585	1174	2702	1835	3101	3483	1801	3830	2361	3429	2069	1937	2214	2719	1878
Yellow Average	1777	2193	3277	2246	2091	3789	1181	2853	1923	3057	3590	1865	3027	2340	3495	2173	1457	2591	2773	2065
Green Average	1724	2246	2934	2123	1794	3307	1164	2581	1706	3173	3313	1750	2758	2252	3241	1987	1462	2471	2632	1729

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Table 22. 2011 Statewide Dry Pea Variety Evaluations - 2008-2011 Preliminary Multi-year Grain Yield Summary (Continued).
Exp: 80. MSU-Montana Ag. Experiment Stations, Central Ag. Research Center, Moccasin, Montana.

Variety	Moccasin				Richland				Sidney				Creston			Joplin	
	2008	2009	2010	2011	2008	2009	2010	2011	2008	2009	2010	2011	2009	2010	2011	2010	2011
Yellow Peas	----- lb/ac -----				----- lb/ac -----				----- lb/ac -----				----- lbs ac ⁻¹ -----			----- lbs ac ⁻¹ -----	
Delta	991 ^a	1177^a	3139^a	963.3 ^a	1633	2015 ^a	3226	1501	1420	1887	3105	2662^{ns}	3590			2491 ^a	775
DS Admiral	1060 ^a	1158 ^a	2642	998.5 ^a	1536	2018 ^a	3264	1664	1078	1757	3016	2517	3120	Abandoned; Deer grazing destroyed plot	Abandoned; Deer grazing destroyed plot	2236	1012
CDC Golden	1100^a	1098 ^a	2695	976.3 ^a	1699	2445^a	2889	2140^a		2072	3735 ^a	2239	3397			1883	1030
SW Midas	697	903	2603	1031^a	2007^{ns}	1435	2321	2116 ^a		1511	3639 ^a	2589	3687			2371 ^a	1060
CDC Mozart	871	1099 ^a	3020 ^a		1932	2077 ^a	3471^{ns}		1489^{ns}	2386^a	4025^a		4051^{ns}			2311 ^a	
PS9910140	934 ^a	1073 ^a	2862			1799	2862		1081	2239 ^a	3796 ^a		3332				2827^a
PS0010836	987 ^a	874	2820			1856	3158		1309	1826	3539 ^a		3277				2549 ^a
PS01102958	799	1079 ^a	2583			1192	2797		1187	1392	3053		3100				2250
Green Peas																	
Majoret	722	1091 ^a	2608	847.8	1457	2221 ^a	2981	1653	1048	2080	3342 ^a	2233	3625			2514 ^a	465
Cruiser	682	1001 ^a	2680	987.8 ^a	1456	1797	2642	1684	1398	1806	2820	2223	3175			2162	977
Medora	819	1161 ^a	2705	987 ^a	1549	2135 ^a	2825	1576	1277	1956	2898	2434	3551			1973	644
Stirling	885	1136 ^a	2907	837.5	1590	1565	2566	1493	1159	1658	3052	2601	2638			2630 ^a	1257^{ns}
CDC Striker	809	1066 ^a	2427	774		1918 ^a	2976	1732		1988	3408 ^a	2212	3248			2016	606
Statewide Means	875	1071	2754	933.7	1677	1882	2922	1729	1794	1964	3341	1659	3368			2324	2011
LSD (p=0.05)	172	208	203	119.8	NS	577	NS	289	1005	301	792	NS	NS			562	NS
CV%	14	12	5	9	15	21	13	10	39	9	9	14	17			17	46
Trial Means[†]	923	1066	2726	933.7	1677	1912	2785	1729	1794	1964	3377	2412	3368			2324	870
Yellow Average	930	1058	2796	992.3	1761	1855	2999	1855	1261	1884	3489	2502	3444			2365	969
Green Average	783	1091	2665	886.8	1513	1927	2798	1628	1221	1898	3104	2341	3247			2259	790

[†] - Means for entire trial; Statewide Trial w as incorporated into larger trials at different locations.

^a - Denote values of equal equivalence within all varieties tested, based on protected LSD_{0.05}.

^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

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Table 23. 2011 Statewide Lentil Variety Evaluations - 2008-2011 Preliminary Multi-year Grain Yield Summary.
Exp: 85 MSU-Montana Ag. Experiment Stations, Central Ag. Research Center, Moccasin, Montana.

Variety	Bozeman		Conrad				Corvallis				Creston				Havre			
	2010	2011	2008	2009	2010	2011	2008	2009	2010	2011	2008	2009	2010	2011	2008	2009	2010	2011
Small Green	----- lb/ac -----		----- lbs ac ⁻¹ -----				----- lbs ac ⁻¹ -----				----- lbs ac ⁻¹ -----				----- lbs ac ⁻¹ -----			
Essex	2111 ^a	1538	512 ^a	3248^a	436	2842^{ns}	1688^a	2224 ^a	1087 ^a		2670 ^a	2395	2464	2091	1680 ^a	1654 ^a	3119^a	1838^a
Medium Green																		
Brewer	1855	1340	357	2272	381	2034	738	940	964 ^a		1844	2460	2164	1464	1371	1173	2487	1024
CDC Meteor	2021 ^a	1703^a		2450	583	2433		1376	742			2449	1870	1408		1950^a	3001 ^a	1770 ^a
CDC Richlea	2266^a	1534 ^a		2831 ^a	623 ^a	2307		2552^a	973 ^a			2831 ^a	2150	1873		1546	2853 ^a	1743 ^a
CDC Vantage	1864	1525 ^a	398	1887	464	2344	964	1339	530		2089	2397	1872 ^{ns}	1801	1434	1628	2822 ^a	1571 ^a
LC01602300R	2224 ^a	1578 ^a	559^a	3113 ^a	687 ^a	2284	1338 ^a	2495 ^a	1052 ^a		2676^a	3016^a	2626	2024	1844 ^a	1807 ^a	2790 ^a	1385
Large Green																		
Merrit	2064 ^a	1360	510 ^a	2183	385	2151	1192	1411	690		2445 ^a	2829 ^a	1954	1730	1892^a	1331	2868 ^a	1127
Pennell	2021 ^a		543 ^a	2578	562		1221	1951	782 ^a		2256	2487	1995		1755 ^a	1493	2832 ^a	
Riveland	1825	1558 ^a	433 ^a	2127	324	1821	798	1353	430		2046	2478	1898	1547	1686 ^a	1368	2463	968
Small Red																		
Crimson	1999 ^a	1281	403	1921	544	1762	1262	1629	1095^a		2309	2082	2259	2095	1277	1072	2343	1705 ^a
CDC Redberry	982	1400 ^a		2234	833^a	2318		2411 ^a	1059 ^a			2326	2346	2090		1217	2592	904
LC01602026T	2242 ^a	1386	453 ^a	2385	405	2273	973	1879	718		2310	2465	2331	1607	1421	1038	2372	1130
Pardina																		
LC01602245P	1921 ^a	1512 ^a	332	2627	701 ^a	2154	948	1904	1060 ^a		2477 ^a	2574 ^a	2201	2140^{ns}	1619 ^a	909	3033 ^a	1177
Statewide Means	1953	1476	450	2451	533	2227	1112	1805	860		2312	2522	2164	1822	1598	1399	2736	1362
LSD (p=0.05)	382	138	142	559	214	NS	386	395	348		270	448	456	NS	325	302	340	299
CV%	14	7	22	14	28	21	24	15	28		8	12	15	22	14	15	9	10
Trial Means	1953	1476	450	2451	533	2227	1112	1805	860		2312	2522	2164	1822	1598	1399	2736	1362

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Table 23. 2011 Statewide Lentil Variety Evaluations - 2008-2011 Preliminary Multi-year Grain Yield Summary (Continued).
Exp: 85 MSU-Montana Ag. Experiment Stations, Central Ag. Research Center, Moccasin, Montana.

Variety	Huntley				Moccasin				Richland				Sidney			Joplin	
	2008	2009	2010	2011	2008	2009	2010	2011	2008	2009	2010	2011	2009	2010	2011	2010	2011
Small Green	----- lbs ac ⁻¹ -----				----- lbs ac ⁻¹ -----				----- lbs ac ⁻¹ -----				----- lbs ac ⁻¹ -----			----- lbs ac ⁻¹ -----	
Essex	1586	2103	464	784	1743 ^a		2036 ^{ns}	918		1181	1752 ^a	1097 ^a	1768^a	2251^a	1737 ^a	2491 ^a	726
Medium Green																	
Brewer	950	494	425	402	1395		1768	730	992	939	1324	581	1103	1423	1061	2236 ^a	350
CDC Meteor		1150	494	799			1816	962		1429 ^a	1842 ^a	1099 ^a	1755 ^a	2072 ^a	1635 ^a	1883	745
CDC Richlea		1603	569	873			2062	1100		1596^a	1562 ^a	1077 ^a	1699 ^a	1959 ^a	1594 ^a	2371 ^a	616
CDC Vantage	964	1283	416	811	1751 ^a		2005	1102^{ns}	1254^a	1453 ^a	1590 ^a	935	1594 ^a	1907 ^a	1610 ^a	2311 ^a	859^{ns}
LC01602300R	1457	1916	926^a	877^{ns}	1800^a		1944	903		1284	1850^a	1398^a	1653 ^a	2169 ^a	1774^a		581
Large Green																	
Merrit	1210	947	466	717	1501		1890	771	1105 ^a	1098	1435	880	1407	1350	1418 ^a	2549^a	546
Pennell	1380	1310	521		1614		1950		1077 ^a	1134	1352		1427	1796		2250 ^a	
Riveland	957	1814	399	717	1572		1805	926	910	1013	1571 ^a	836	1387	1564	1413 ^a		247
Small Red																2514 ^a	
Crimson	1597	1629	738 ^a	458	1655 ^a		1919	911	1247 ^a	1308 ^a	1222	859	836	1924 ^a	981	2162 ^a	774
CDC Redberry		2411^{ns}	684 ^a	819	----		1642	764		1296	1390	933	1332	2186 ^a	1604 ^a	1973	785
LC01602026T	1515	1508	674 ^a	539	1599		1978	774		917	1642 ^a	902	885	1774	1376 ^a	2630 ^a	517
Pardina																	
LC01602245P	1836^a	1524	682 ^a	271	1733 ^a		1963	802		951	1443	694	712	1480	1104	2016 ^a	745
Statewide Means	1336	1397	573	672	1636		1906	888	1108	1200	1537	945	1351	1835	1444	2324	624
LSD (p=0.05)	224	NS	272	NS	176		NS	NS	230	288	294	392	260	390	434	562	NS
CV%	9	43	33	54	7		11	24	12	17	11	25		13	17	17	44
Trial Means	1336	1397	573	672	1687		1844	888	1108	1333	2785	945	1351	1835	1444	2324	624

[†] - Means for entire trial; Statewide Trial was incorporated into larger trials at different locations.

^a - Denote values of equal equivalence within all varieties tested, based on protected LSD_{0.05}.

^{ns} - Denote no statistical differences among means, based on protected LSD_{0.05}.

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