PROJECT TITLE: Dryland Statewide and Western Regional Dry Pea Performance Trials near Huntley, Montana. (Exps. 99SPPT08 and 999708).

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OBJECTIVES: To provide producers in south central Montana with a reliable, unbiased, up-to-date source of information that will permit valid comparisons among pea varieties and experimental lines. This information should help producers in south central Montana select dry pea varieties best suited to their particular area and growing conditions.

METHODS: The 1999 Statewide Pea Performance trial had 5 entries and the Western Regional Pea Performance trail had 12 entries. Both trials were planted using a randomized complete block design with three replications. Test plots consisted of a 30-foot, 4-row plot with 12-inch row spacing. All rows of each test plot were trimmed 36 inches and harvested using an experimental-plot combine. Recorded seed yields are reported in pounds per acre and thousand seed weights are reported in grams. Flowering date was noted when 50 percent of the plants in a plot had at least one flower open. Fill date was noted when at least 50 percent of the pods in a plot were beginning to fill with pea seed. Fill height was noted at the onset of pod fill and was measured from the soil surface to the highest point of the plant (this is not the same as vine length). Maturity height was noted when pea seed were ready to be harvested and was measured from the soil surface to the highest point of the plant. Flowering and fill dates were recorded in Julian days (number of days from January 1) for statistical purposes. Corresponding calendar dates also are presented.

RESULTS and SUMMARY: Agronomic performance of the dry pea cultivars and experimental lines tested in the Statewide Pea Trial under dryland conditions near Huntley during 1999 is presented in Table 1. Dry pea yields averaged 1312 lb/ac and ranged from 1851 lb/ac for 'CDC 9705' spring pea to 852 lb/ac for 'Granger' Austrian winter pea. 'CDC 9704', at 1648 lb/ac was the only was the only entry to produce a seed yield equal to that of CDC 9705.

Agronomic performance of the dry pea cultivars and experimental lines tested during 1999 under dryland conditions near Huntley is presented in Table 2. Western regional dry pea performance trial yields averaged 1305 lb/ac and ranged from 1634 lb/ac for 'Fallon' to 976 lb/ac for 'PS510947'. 'PS510737' and 'PS610169' yielded between 1523 and 1445 lb/ac, which was equal the yield of Fallon.

FUTURE PLANS: Dry pea evaluations under dryland conditions will continue in 2000 at Southern Agricultural Research Center.

Table 1. Performance of five spring pea and Austrian winter pea cultivars and experimental lines tested in the Statewide Dry Pea Performance Trial under dryland conditions near Huntley, Montana during 1999. (Exp. 99SPPT08).

Cultivar	Seed Yield	Thousand Seed Weight	Flower Date		Fill Date		Fill Height	Maturity Height	Height Diff.
			Julian	Calendar	Julian	Calendar			
	lb/ac	grams					inches		
CDC 9704	**1,648***	150.3	169	Jun 17	178	Jun 26	28	23	-5
CDC 9705	**1,851****	179.3	167	Jun 15	178	Jun 26	24	22	-2
Granger AWP	852	95.3	173	Jun 21	185	Jul 3	33	25	-8
Melrose AWP	1,233	85.7	174	Jun 22	185	Jul 3	31	22	-9
Trapper	976	87.7	169	Jun 17	182	Jun 30	25	20	-5
Average	1,312	119.7	170	Jun 18	182	Jun 29	28	22	-6
LSD (p=0.05)	293	19.4	0		<1		5	ns	-
CV%	11.9	8.6	0		0.1		8.7	11	-

** Indicates highest yielding cultivar.
* Indicates cultivars yielding equal to highest yielding cultivar based on Fisher's protected LSD (p=0.05).
ns Indicates no significant difference between cultivars within a column based on Fisher's protected LSD (p=0.05).

Statewide Dry Pea Performance Trial (Exp. 99SPPT08)

Planted:	April 19, 1999
Harvested:	July 30, 1999
Fertility:	18-46-00, 100 lb/ac, preplant incorporated, September 15, 1998
Herbicide:	Basagran, 1 pt/ac; Poast, 0.5 pt/ac; R-11, 1% v/v, May 27, 1999
Insecticide:	none
Previous Crop:	summer fallow
Precipitation:	5.46 inches

Table 2. Performance of 12 spring pea and Austrian winter pea cultivars and experimental lines tested in the Western Regional Dry Pea Performance Trial under dryland conditions near Huntley, Montana during 1999. (Exp. 999708).

Cultivar	Seed Yield	Thousand Seed Weight	Flower Date		Fill Date		Fill Height	Maturity Height	Height Diff.
			Julian	Calendar	Julian	Calendar			
	lb/ac	grams					inches		
Alaska 81	1185	168.3	161	Jun 9	174	Jun 22	23	21	-2
Fallon	**1634****	209.3	167	Jun 15	177	Jun 25	26	24	-2
Joel	1285	176.0	163	Jun 11	177	Jun 25	23	19	-4
PS510163	1150	243.3	168	Jun 16	178	Jun 26	19	19	0
PS510691	1125	161.0	170	Jun 18	178	Jun 26	20	17	-3
PS510718	1410	163.0	169	Jun 17	181	Jun 29	22	19	-3
PS510737	**1523***	162.0	169	Jun 17	179	Jun 27	22	22	0
PS510947	976	183.3	169	Jun 17	178	Jun 26	22	19	-3
PS610168	1141	164.3	171	Jun 19	179	Jun 27	17	18	1
PS610169	**1445***	166.7	170	Jun 18	177	Jun 25	20	21	1
PS610509	1355	232.7	169	Jun 17	178	Jun 26	24	24	0
Shawnee	1434	197.3	164	Jun 12	176	Jun 24	18	20	2
Average	1305	185.6	168	Jun 16	178	Jun 26	21	20	-1
LSD (p=0.05)	198	15.0	0		<1		3.8	3.3	-
CV%	8.9	4.8	0		0.1		10.6	9.8	-

** Indicates highest yielding cultivar.

* Indicates cultivars yielding equal to highest yielding cultivar based on Fisher's protected LSD (p=0.05).

Western Regional Dry Pea Performance Trial (Exp. 999708)

Planted:	April 19, 1999
Harvested:	July 30, 1999
Fertility:	18-46-00, 100 lb/ac, preplant incorporated, September 15, 1998
Herbicide:	Basagran, 1 pt/ac; Poast, 0.5 pt/ac; R-11, 1% v/v, May 27, 1999
Insecticide:	none
Previous Crop:	summer fallow
Precipitation:	5.46 inches