

Project Title: Statewide Pea Variety Trial - 2016

Objective: To evaluate pea cultivars for yield and agronomic performance in Northwestern Montana.

Results:

A significant difference was observed for yellow pea yield. Mean yield was 89.8 bu/A, and ranged from 58.1 bu/A for PSO826MT492 to 114.1 bu/A for Nette 2010 (Table 2). Statistical difference was observed for flowering, with an average occurrence at 175 Julian days (June 23). Significant differences in height averaged 24.6 inches at 50% flowering, 36.1 inches at pod fill, and 38.4 inches at physiological maturity. Statistical differences were observed for test weights with an average of 64.1 lb/bu. Thousand kernel weights were significant with an average of 241.0 grams and ranged from 215.6 grams for AC Earlystar to 275.5 grams for Navarro. Protein averaged 21.71 percent with Salamanca being highest at 23.40 percent.

No significant difference was observed for green pea yield, which averaged 78.1 bu/A (Table 3). Days to flowering was significant with an average of 175 Julian days (June 23). Average heights were 22.5 inches at flowering, 35.4 inches at pod fill, and 37.1 inches at physiological maturity. Test weights averaged 63.4 lb/bu. Thousand kernel weights averaged 222.8 grams and ranged from 201.1 grams for PSO826MT492 to 235.2 grams for Majoret. Protein averaged 21.74 percent with PSO826MT492 and Majoret having the highest at 23.20 percent.

Summary:

Pea yields on average were much higher from last year by more than 50 bu/A for green peas and more than 70 bu/A for yellow peas. The nursery was planted under rainfed condition and received adequate moisture, as opposed to last year's drought.

Table 1. Materials and Methods.

Seeding Date:	4/22/2016	Harvest Date:	7/22/2016
Julian Date:	113	Julian Date:	204
Seeding Rate:	8 plants/sqft	Soil Test:	116-11-125
Previous Crop:	Barley	Fertilizer:	6-30-30
Tillage:	Conventional	Herbicide:	Pursuit 2 oz/A + Basagran 16 oz/A
Irrigation:	None		Basagran 2 pt/A
Soil Type:	Creston Silt Loam	Insecticide:	Warrior II 1.92 fl oz/A

Table 2. Yellow pea agronomic data.

Cultivar	FLWR Julian	HT FLWR in	HT PF in	HT PM in	YLD lb/A	YLD bu/A	TWT lb/bu	TKW g	PRO %
Nette 2010	172	23.5	34.4	37.7	6844.4	114.1	65.8	249.7	20.90
Agassiz	178	25.7	40.3	44.8	6274.1	104.6	62.7	228.7	22.70
Salamanca	178	28.5	39.9	41.7	5953.4	99.2	64.1	254.1	23.40
PSO877MT632	174	21.8	34.0	39.6	5709.0	95.2	63.6	234.4	23.00
DS Admiral	176	27.8	38.5	40.2	5699.4	95.0	64.0	240.9	21.90
CDC Amarillo	179	31.1	44.6	36.8	5622.7	93.7	64.6	220.7	21.80
CDC Treasure	175	28.2	37.7	41.2	5576.1	92.9	64.8	222.8	20.30
Jet Set	177	26.5	34.8	38.6	5570.0	92.8	64.7	247.4	21.20
CDC Saffron	178	28.2	34.0	35.2	5520.2	92.0	65.1	252.4	21.30
AC Earlystar	175	27.2	40.8	42.8	5297.0	88.3	64.1	215.6	19.90
PSO826MT460	172	20.6	32.8	34.7	5285.7	88.1	63.1	250.4	22.10
Universal Yellow	172	21.3	33.9	34.9	5214.1	86.9	63.5	241.9	21.80
Spider	179	28.4	40.3	44.1	5203.7	86.7	63.7	241.0	22.90
Bridger	176	20.8	31.9	34.8	5200.8	86.7	64.7	222.3	21.90
Delta	173	19.9	31.0	34.1	5143.1	85.7	63.9	250.2	22.00
Korando	176	24.2	37.4	39.5	5053.0	84.2	64.1	262.1	22.30
Navarro	174	21.3	34.6	34.7	4363.9	72.8	64.5	275.5	22.30
PSO826MT492	172	18.3	29.9	36.0	3488.4	58.1	63.4	228.8	19.10
Mean	175	24.6	36.1	38.4	5389.9	89.8	64.1	241.0	21.71
CV	0.7	9.3	7.4	11.1	10.8	10.8	1.0	3.0	3.09
LSD	1.7	3.3	3.8	6.1	828.0	13.8	0.9	10.1	0.95
Pr>F	0.0001	0.0001	0.0001	0.0038	0.0001	0.0001	0.0001	0.0001	0.0001

Table 3. Green pea agronomic data.

Cultivar	FLWR Julian	HT FLWR in	HT PF in	HT PM in	YLD lb/A	YLD bu/A	TWT lb/bu	TKW g	PRO %
Greenwood	173	21.4	33.0	33.5	5127.9	85.5	64.5	215.0	19.20
PSO877MT499	179	21.9	31.6	33.6	5083.2	84.7	62.7	225.8	23.20
Hampton	178	26.6	35.6	36.1	5024.0	83.8	64.0	234.9	22.50
Majoret	172	22.7	36.7	43.6	4952.1	82.5	62.6	235.2	23.20
PSO877MT457	176	27.1	44.5	42.9	4763.9	79.4	63.9	218.5	21.60
Cruiser	174	21.3	35.0	35.1	4736.7	78.9	63.4	221.0	21.80
PSO826MT190	177	22.9	35.8	42.5	4540.4	75.7	62.6	201.1	22.00
Aragon	173	18.5	34.7	34.2	4403.7	73.4	63.3	224.2	21.30
PSO877MT076	172	20.1	31.2	32.2	3557.3	59.3	63.7	229.6	20.90
Mean	175	22.5	35.4	37.1	4687.7	78.1	63.4	222.8	21.74
CV	0.6	8.6	8.5	13.1	13.7	13.7	0.8	2.7	2.02
LSD	1.6	2.9	4.5	7.1	ns	ns	0.8	9.0	0.65
Pr>F	0.0001	0.0001	0.0002	0.0096	0.0595	0.0598	0.0002	0.0001	0.0001

FLWR: 50% flower, HT FLWR: height at flowering, HT PF: height at pod fill, HT PM: height at physiological maturity, YLD: yield, TWT: test weight, TKW: thousand kernel weight, ns: nonsignificant.