

Project Title: Statewide Pea Variety Evaluation
 Project Leader: Brooke Bohannon
 Project Personnel: Chengci Chen
 Project Objective: To evaluate seed yield and agronomic performance of 13 pea cultivars in northwestern Montana.

Results:

The average days to flowering was 78 days after planting (June 28) and the nursery was harvested on August 6th. Mature plant canopy height averaged 30.4 inches with a range from 24.5 to 37.3 inches. Pea grain yield differences across cultivars were significant. Trial yields averaged 3323 lb/A (Table 4), ranging from 2761 lb/A (Cruiser) to 4013 lb/A (Montech 4152). Bridger and Spider yield statistically equal to Montech 4152, across the entire evaluation as well as within the yellow color class (Table 3). Trial test weights averaged 64 lb/bu and thousand kernel weights averaged 229 grams. Within the green color class Arcadia yield the highest at 3542 lb/A and Stirling, CDC Striker and Majoret yielded equally to Arcadia (Table 2).

Summary:

Deer have consumed the 2010 and 2011 pea variety evaluation; however, the 2012 average yields were comparable to those obtained in 2009.

Future Plans:

Pea cultivar evaluations will continue to be conducted each year in order to identify cultivars suitable to our growing region.

Table 1. Statewide Dry Pea Evaluation - 2012

| | | | | | |
|----------------|-----------------|--------------|----------------|---------------|----------|
| Seeding Date: | 4/11/2012 | Soil Type: | Kalispell vfSL | Harvest Date: | 8/6/2012 |
| Seeding Rate: | 172 lb/A (avg.) | Soil Test: | 57-12-110-42 | | |
| Previous Crop: | Alfalfa | Fertilizer: | 138-0-75-14 | | |
| Tillage: | Conventional | Herbicide: | None | | |
| Irrigation: | None | Insecticide: | None | | |

Table 2. Green pea agronomic data

| Cultivar | Days to Flower days | Height at Pod Fill inches | Height at Maturity inches | Yield lb/A | Yield bu/A | TWT lb/bu | TKW g |
|-----------------|---------------------|---------------------------|---------------------------|-------------|------------|-----------|--------|
| Arcadia | 79 | 30.8 | 25.5 | 3542 | 56 | 63 | 208 |
| Stirling | 74 | 29.3 | 24.5 | 3275 | 51 | 64 | 202 |
| CDC Striker | 79 | 31.5 | 31.3 | 3123 | 49 | 65 | 245 |
| Majoret | 79 | 31.0 | 28.3 | 3080 | 48 | 65 | 226 |
| K2 | 79 | 31.8 | 29.0 | 2979 | 46 | 64 | 216 |
| Cruiser | 78 | 34.8 | 30.8 | 2761 | 43 | 63 | 227 |
| Green Pea Means | 78 | 31.5 | 28.2 | 3127 | 49 | 64 | 221 |
| CV | 2.48 | 5.85 | 12.18 | 10.25 | 10.38 | 1.68 | 2.50 |
| LSD | 2.9 | 2.8 | 5.3 | 482.8 | 7.6 | 1.6 | 8.3 |
| Pr>F | 0.0088 | 0.0186 | 0.0744 | 0.0594 | 0.0519 | 0.1027 | <.0001 |

TWT: Test weight, TKW: Thousand kernel weight.

Grain yield is adjusted to 13% moisture.

Underlined highest yielding variety, **bolded** grain yields are equal to highest yielding cultivar.

Table 3. Yellow pea agronomic data

| Cultivar | Days to Flower days | Height at Pod inches | Height at Maturity inches | Yield lb/A | Yield bu/A | TWT lb/bu | TKW g |
|------------------|---------------------|----------------------|---------------------------|-------------|------------|-----------|--------|
| Montech 4152 | 75 | 39.0 | 37.3 | 4013 | 63 | 67 | 255 |
| Bridger (LL7020) | 78 | 34.5 | 31.8 | 3744 | 58 | 65 | 222 |
| Spider | 79 | 36.8 | 33.5 | 3654 | 57 | 63 | 249 |
| DS Admiral | 78 | 38.0 | 34.5 | 3465 | 54 | 65 | 249 |
| Delta | 76 | 30.5 | 28.8 | 3349 | 53 | 67 | 242 |
| SW Midas | 78 | 33.3 | 29.8 | 3337 | 52 | 63 | 208 |
| Agassiz | 81 | 32.8 | 31.0 | 2880 | 45 | 65 | 230 |
| Yellow Pea Means | 78 | 35.0 | 32.4 | 3492 | 55 | 65 | 236 |
| CV | 1.78 | 5.22 | 5.61 | 9.50 | 9.50 | 3.50 | 2.80 |
| LSD | 2.1 | 2.7 | 2.7 | 494.7 | 7.7 | 3.4 | 9.8 |
| Pr>F | 0.0002 | <0.0001 | <.0001 | 0.0048 | 0.0050 | 0.1419 | <.0001 |

TWT: Test weight, TKW: Thousand kernel weight. Grain yield is adjusted to 13% moisture.

Underlined highest yielding variety, **bolded** grain yields are equal to highest yielding cultivar.

Table 4. Combined agronomic data analysis

| Cultivar | Color | Days to Flower | Height at Pod Fill | Height at Maturity | Yield lb/A | Yield bu/A | TWT lb/bu | TKW g |
|------------------|--------|----------------|--------------------|--------------------|-------------|------------|-----------|--------|
| Montech 4152 | Yellow | 75 | 39.0 | 37.3 | 4013 | 63 | 67 | 255 |
| Bridger (LL7020) | Yellow | 78 | 34.5 | 31.8 | 3744 | 58 | 65 | 222 |
| Spider | Yellow | 79 | 36.8 | 33.5 | 3654 | 57 | 63 | 249 |
| Arcadia | Green | 79 | 30.8 | 25.5 | 3542 | 56 | 63 | 208 |
| DS Admiral | Yellow | 78 | 38.0 | 34.5 | 3465 | 54 | 65 | 249 |
| Delta | Yellow | 76 | 30.5 | 28.8 | 3349 | 53 | 67 | 242 |
| SW Midas | Yellow | 78 | 33.3 | 29.8 | 3337 | 52 | 63 | 208 |
| Stirling | Green | 74 | 29.3 | 24.5 | 3275 | 51 | 64 | 202 |
| CDC Striker | Green | 79 | 31.5 | 31.3 | 3123 | 49 | 65 | 245 |
| Majoret | Green | 79 | 31.0 | 28.3 | 3080 | 48 | 65 | 226 |
| K2 | Green | 79 | 31.8 | 29.0 | 2979 | 46 | 64 | 216 |
| Agassiz | Yellow | 81 | 32.8 | 31.0 | 2880 | 45 | 65 | 230 |
| Cruiser | Green | 78 | 34.8 | 30.8 | 2761 | 43 | 63 | 227 |
| Trial Analysis: | | | | | | | | |
| Mean | | 78 | 33.4 | 30.4 | 3323 | 52 | 64 | 229 |
| CV | | 2.11 | 5.36 | 9.41 | 9.69 | 9.75 | 2.84 | 2.70 |
| LSD | | 2.4 | 2.6 | 4.1 | 461.7 | 7.3 | 2.6 | 8.9 |
| Pr>F | | <.0001 | <.0001 | <.0001 | <.0001 | <.0001 | 0.0587 | <.0001 |

TWT: Test weight, TKW: Thousand kernel weight.

Grain yield is adjusted to 13% moisture.

Bold highest yielding variety, **bolded** grain yields are equal to highest yielding cultivar.