

Project Title: Statewide Camelina Variety Evaluation

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Projective Objective: To evaluate seed yield and agronomic performance of 15 camelina varieties in northwestern Montana.

Results:

Fifteen varieties of camelina were included in the trial; four commercially available varieties, six varieties supplied by Sustainable Oils (SO) and five varieties supplied by Great Plains-The Camelina Company (GP) (Table 1). Camelina was seeded at a rate of 5 lb/a and a depth of 0.5" on May 1, 2009 under conventional tillage and dryland conditions. The plots were combine harvested on August 7, 2009.

Good camelina stand establishment was obtained. The average time to flowering for camelina varieties was 50 days after planting (June 20), with the crop reaching average harvest maturity approximately 41 days later (August 1), a total of 91 days after planting. Plant height averaged 29.1 in, with a range of 25.0 to 30.8 in. Little to no lodging or pod shatter was observed in these variety evaluations.

Differences in seed yield and test weight were significant among varieties included in this year's evaluation. On average, camelina yielded 2,106 lb/a, and test weights were 52.1 lb/bu. The three highest yielding varieties were Calena (46.1 bu/a), SO-5 (43.4 bu/a) and Suneson (43.4 bu/a). Average oil content of camelina seed was 38.8%, ranging from 38.2 to 39.3%. Differences in oil yield among varieties were also significant. Average oil yield among all varieties was 825 lb/a. The 3 highest oil yielding varieties were Calena (950 lb/a), SO-5 (909 lb/a) and Suneson (896 lb/a).

Summary:

Camelina yields were much higher than in 2008, and comparable to that of canola crops grown in 2009. No pest or disease problems were observed. Calena and SO-5 emerged as the highest seed and oil yielding variety in the evaluation, which is consistent with results from 2008.

Future Plans:

With continued variety development and release, evaluations will be conducted in order to identify varieties best suited to this growing region.

Table 1. 2009 Statewide Camelina Variety Evaluation results, Northwestern Agricultural Research Center, Kalispell, MT

| Variety | Seed Yield <i>bu/a</i> | Seed Yield <i>lb/a</i> | Oil Yield <i>lb/a</i> | Test Weight <i>lb/bu</i> | Protein <i>%</i> | Oil <i>%</i> | Moisture <i>%</i> | Shatter <i>%</i> | Days to Flower <i>days after planting</i> | Harvest Maturity <i>days after planting</i> | Plant Height <i>in</i> | Lodging <i>0-9</i> |
|-----------------------|---------------------------|---------------------------|--------------------------|-----------------------------|---------------------|-----------------|----------------------|---------------------|--|--|---------------------------|-----------------------|
| Calena | 46.1** | 2423 | 950 | 52.60 | 24.54 | 38.9 | 8.6 | 0.8 | 50 | 93 | 29.8 | 1.5 |
| SO-5 | 43.4* | 2262 | 909 | 52.13 | 23.72 | 39.3 | 10.0 | 0.8 | 50 | 93 | 28.0 | 2.3 |
| Suneson | 43.4* | 2298 | 896 | 52.93 | 52.93 | 38.8 | 8.3 | 1.5 | 49 | 91 | 29.3 | 1.3 |
| Blaine Creek | 43.0* | 2237 | 875 | 52.03 | 24.70 | 38.7 | 8.9 | 1.5 | 50 | 92 | 29.8 | 1.3 |
| GP-42 | 41.6* | 2190 | 856 | 52.70 | 24.52 | 39.0 | 8.3 | 1.5 | 50 | 93 | 30.8 | 1.5 |
| SO-3 | 40.7* | 2090 | 830 | 51.30 | 23.90 | 39.3 | 9.0 | 1.5 | 50 | 93 | 29.0 | 1.0 |
| GP-10 | 40.4* | 2128 | 831 | 52.70 | 24.96 | 39.0 | 8.1 | 0.5 | 50 | 93 | 27.8 | 2.0 |
| Ligena | 40.2* | 2070 | 809 | 51.50 | 25.03 | 38.3 | 9.9 | 1.5 | 50 | 95 | 30.8 | 1.3 |
| SO-6 | 39.6 | 2040 | 795 | 51.45 | 51.45 | 38.6 | 8.8 | 3.0 | 51 | 91 | 29.0 | 1.3 |
| GP-68 | 38.3 | 1972 | 767 | 51.45 | 25.05 | 38.5 | 8.7 | 1.8 | 49 | 88 | 30.0 | 1.5 |
| SO-2 | 37.7 | 1972 | 780 | 52.28 | 23.89 | 39.1 | 9.2 | 4.0 | 50 | 92 | 29.3 | 1.3 |
| SO-4 | 36.1 | 1856 | 718 | 51.43 | 24.89 | 38.6 | 8.3 | 0.5 | 48 | 87 | 26.3 | 2.3 |
| GP-11 | 34.9 | 1842 | 706 | 52.75 | 25.28 | 38.2 | 8.4 | 1.5 | 50 | 88 | 28.3 | 2.0 |
| SO-1 | 33.1 | 1714 | 677 | 51.78 | 24.45 | 39.2 | 8.6 | 1.5 | 51 | 88 | 28.3 | 1.3 |
| GP-07 | 24.8 | 1270 | 484 | 51.15 | 26.60 | 38.2 | 7.7 | 1.8 | 48 | 87 | 25.0 | 1.3 |
| Average | 38.9 | 2106 | 825 | 52.09 | 28.83 | 38.8 | 8.8 | 1.6 | 50 | 91 | 29.1 | 1.6 |
| LSD ($\alpha=0.05$) | 6.10 | 314.8 | 127.1 | 0.521 | 0.820 | 0.61 | 1.12 | 3.09 | 1.1 | 3.2 | 2.0 | 1.11 |

Seed and oil yields are adjusted to 8% grain moisture content.

**Indicates highest yielding variety

*Indicates varieties yielding equal to the highest yielding variety based on Fisher's protected LSD at the 0.05 probability level.