

Evaluating Cultural Practices of Camelina in Ohio

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Objective

To determine an optimum seeding rate, date of planting and a nitrogen rate for two varieties of spring planted camelina.

Background

| | | | |
|----------------|-------------------------------|------------------|-------------------------------|
| Crop Year: | 2008 | Ohio experience: | limited to none |
| Location: | OARDC, NW Branch | Tillage: | plowed & leveled fall 2007 |
| County/Town: | Wood/Custer | Soil Test | pH 6.0, P 87lbs/A, K 415lbs/A |
| Soil Type: | Hoytville clay loam | Planting Date: | April 17, May 22 |
| Drainage: | systematic subsurface | Nitrogen: | urea: 0, 20, 40, 60 lbs/A |
| Previous Crop: | soybeans | Seeding Rate: | 5 and 10 lbs/A |
| Crop use: | oilseed crop and protein meal | Harvest Date: | July 11, Aug 8 |

Methods

Plots were grouped according to date of planting and randomized within those blocks according to nitrogen and seeding rate. Intentions were to seed every two weeks over a period of three months starting Feb. 1 for six planting dates. However, due to wetter than normal conditions, planting began April 17 causing only three planting dates. Within each planting date, two varieties were tested, under two seeding rates. A seeding rate of 5 lbs/ acre was used for the nitrogen treatment. The treatments were:

- Factor 1: Date of Planting (DOP) – April 17 and May 22
- Factor 2: Nitrogen Rate (NR) – 0, 20, 40, 60 lbs/acre
- Factor 3: Seeding Rate (SR) – 5 and 10 lbs/acre
- Factor 4: Spring Variety – Cheyenne and Calena

Camelina was spring seeded into plots that were plowed and leveled the fall of 2007. Planting was done with a Hege Manufacturing research planter seeding 7 rows, 7 inches apart. Prior to DOP May 22, a burn down herbicide of glyphosate was applied to control emerged weeds. Research plots were planted 45' long and trimmed to 37.25'. Nitrogen was applied based on crop development and timed at or just prior to stem elongation. Nitrogen source was urea (46-0-0) and applied using a Gandy brand drop spreader. Crop was harvested based on maturity using a Massey Ferguson 8XP research harvester. As a result of high percentage of foreign material, all samples were cleaned an additional time on gravity table seed cleaner.

Results

Weed pressure combined with drier than normal conditions after DOP April 30 necessitated abandoning those plots. Green weeds did interfere with all harvest in the combine's straw separators. DOP April 17 plots were scheduled to be harvested on July 8. However, the plots received 1.8 inches of rain on July 8 and 9. Significant shattering of seed pods occurred with an estimated yield loss on the ground, Cheyenne 30-50 percent and Calena 5-10 percent. The

estimated yield loss is not included in reported yield. The date of harvest for DOP April 17 and May 22 were July 11 and Aug 8, respectively. Days to harvest for DOP April 17 and May 22 were 85 and 78 days, respectively.

Camelina Yield (lbs/ac) Response to DOP & Variety

| Date of Planting | Yield (lbs/A) |
|-----------------------------|-----------------|
| Cheyenne DOP April 17 | 153.0 A |
| Calena DOP April 17 | 279.6 B |
| Cheyenne DOP May 22 | 442.8 C |
| Calena DOP May 22 | 605.4 D |
| SR = 5 lbs/A, NR = 40 lbs/A | LSD (0.05) 98.7 |

Camelina Yield (lbs/ac) Response to DOP & Nitrogen

| Nitrogen Rate (lbs/a) | DOP April 17 | DOP May 22 |
|-----------------------|------------------|------------|
| 0 | 41.2 A | 281.0 A |
| 20 | 152.2 B | 405.7 AB |
| 40 | 251.1 BC | 458.6 B |
| 60 | 275.5 C | 505.1 B |
| * variety Cheyenne | LSD (0.05) 110.1 | 128.9 |

Camelina Yield (lbs/ac) Response to DOP & Seeding Rate

| Variety and Seeding Rate (lbs/A) | DOP April 17 | DOP May 22 |
|----------------------------------|-----------------|------------|
| Cheyenne 5# | 153.0 A | 442.8 A |
| Cheyenne 10# | 168.4 A | 498.8 AB |
| Calena 5# | 279.6 B | 605.4 C |
| Calena 10# | 312.6 B | 568.3 BC |
| | LSD (0.05) 85.0 | 105.7 |

Summary

This study found a significant yield increase to DOP with most of the increase attributed to reduced weed pressure gained by pre-plant herbicide burn down application. This study found a significant yield increase from nitrogen in both DOP. This study found no significant yield increase to seeding rate in either variety. Additional work is needed to repeat the treatments of DOP, address the pod shatter prior to harvest, extend the nitrogen rate beyond 60 lbs/A, weed control options, and additional varieties.

Acknowledgement

The author expresses appreciation to Matt Davis, Manager of the OARDC NW Branch and the Center for Innovative Food Technology of Bowling Green, OH.

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