

XII SEED TREATMENT TRIAL

Objective: Evaluate the impact of new seed treatments on seedling diseases and insect control for canola as it relates to yield, quality and contribution margins.

Background: The most widespread problem of canola production is stand establishment. Poor stand establishment may be caused by a seedling disease complex including pathogens such as *Rhizoctonia solani*, along with *Fusarium* and *Pythium* species. Seed treatment fungicides are used extensively in canola production as a first line of defense to control seedling diseases. In addition, some new products are being evaluated to look at extended flea beetle control.

Methodology: The seed treatment trial included the following treatments on the same seed lot of Hyola 357:

1. Canola Fungicide Package (Check) (Gustafson - fungicide only)
2. Canola Fungicide Package (CFP) + Capture (1.5 oz/ac foliar)
3. Gaucho CS
4. G7030-02 (Coded Gustafson product)
5. G7030-02 + L0263A1 (Coded Gustafson product)

All other agronomic practices remained the same. The Capture treatment was applied at 16 days after planting (DAP). Flea beetle ratings and stand counts were taken at the exact same locations in the plots on three dates (16, 29 and 36 DAP).

The following flea beetle damage guide was used to estimate the percentage of shot hole damage to leaf area using the following scale:

- 0 = No leaf damage
- 1 = Approximately 10 % leaf damage
- 2 = Approximately 20 % leaf damage
- 3 = Approximately 30 % leaf damage
- (4, 5, 6, etc.)
- 9 = Approximately 90 to 100 % leaf damage

Observations:

The trial was seeded on May 19 into dry to good moisture conditions. The trial received little rain until May 29 (0.41 inches) so seed that went into dry soil germinated about 10 days later than the first flush. A heavy infestation of flea beetles came into the field around June 1. On June 4 (16 DAP), many of the first flush of seedlings without insecticide treatment were dead in the plots that were nearest the ditch (the first two replicates) and the second flush of canola was emerging. Capture was applied on June 4 to the CFP + Capture treatment. At 29 DAP, the CFP had reduced plant counts and higher flea beetle injury than the other treatments. Lygus counts were taken weekly during bloom. Average counts ranged from 3 to 8 lygus per 10 sweeps with little consistency among treatments. Maturity was affected by the treatments with the CFP + Capture maturing five days later than the insecticide seed treatments and the CFP treatment maturing seven days later than the insecticide seed treatments.

Results:

| SEED TREATMENT TRIAL | | | | | | | | |
|------------------------------|----------------------|----------------------|--------------------------------|----------------|---------------------------|----------------------------------|---|----------------------------------|
| Thief River Falls, MN | | | | | | | | |
| Treatment | Yield (lb/ac) | Yield (bu/ac) | Contrib. Margin (\$/ac) | Oil (%) | Seed Cost (\$/ac)* | Flea Beetle Rating 16 DAP | Plant Stand (PI/ft²) 16 DAP | Flea Beetle Rating 29 DAP |
| Canola Fung. | 1494 | 29.9 | 38.80 | 42.1 | 20.40 | 6.3 | 1.5 | 4.0 |
| Canola Fung. + Capture | 1782 | 35.6 | 64.61 | 42.5 | 20.40 | 6.8 | 2.4 | 2.2 |
| G7030-02 | 1689 | 33.8 | N/A | 42.7 | N/A | 3.2 | 4.6 | 2.8 |
| G7030-02 + L0263-A1 | 1717 | 34.3 | N/A | 42.0 | N/A | 2.2 | 4.8 | 2.8 |
| Gaucho CS | 1748 | 35.0 | 62.49 | 42.7 | 24.05 | 3.6 | 4.8 | 3.0 |
| LSD | 198.8 | 3.98 | | 1.41 | | 1.96 | 1.39 | 0.58 |
| CV% | 9.4 | 9.4 | | 2.6 | | 35.2 | 30.4 | 15.7 |

Note: G7030-02 and L0263-A1 are coded products of Gustafson that are in the testing phase and do not have prices established.

Discussion:

All the insecticide seed treatments provided good protection from the flea beetles with significantly less injury and significantly higher stands. The Canola Fungicide Package (CFP) treatment yielded significantly less than any of the other treatments with the exception of G7030-02. The CFP + Capture treatment produced similar yield to the other insecticide seed treatments. The higher yields of the CFP + Capture and the Gaucho CS contributed to higher contribution margins than the CFP alone. Contribution margins reflected differences in yield, seed treatments and foliar insecticide costs. Thirteen days after the application of the Capture (29 DAP), the flea beetle injury ratings of the CFP + Capture were slightly better than the insecticide seed treatments, due to mortality of the heavily damaged plants. Oil content was not affected by seed treatment.