

## XI SEED TREATMENT TRIAL

**Objective:** To 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 insecticide products are being evaluated to determine their effectiveness for control of flea beetles and late season insects such as lygus bug and cabbage seed pod weevil.

**Methodology:** The seed treatment trial included the following treatments on the same seed lot of the variety DKL3455:

- A) Gaucho + Clothianidin
- B) Gaucho CS
- C) Vitaflo 280 + Allegiance (Gaucho fungicide package)
- D) Helix Xtra
- E) Helix Lite
- F) Canola Package (Helix fungicide package)

All other agronomic practices remained the same. Flea beetle ratings and stand counts were taken at the exact same locations in the plots on three dates (10, 16 and 23 days after planting). This trial was placed up against the side of a conservation reserve program (CRP) field to improve the probability of late season insect infestations. Due to the placement, plots were shortened to 150 ft long by 60 ft wide. This provided less soil uniformity among the treatments. This trial was also conducted with five replicates instead of the standard four.

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

**Observation:** The trial was seeded into good moisture on May 14. Heavy rains shortly after seeding caused standing water in much of the trial that caused noticeably delayed emergence and delayed maturity throughout the season. Flowering was very uneven with the hardest hit areas of the trial about four days behind in bloom initiation. Lygus counts were taken

weekly in each plot during bloom. Average counts ranged from 4 to 8 lygus per 10 sweeps with little consistency among treatments. An exception was on July 5 when the Gaucho + Clothianidin treatment had significantly lower lygus bug counts than the Vitaflo 280 + Allegiance treatment. On July 10 and July 18, there were no significant differences in lygus bug counts among treatments.

**Results:**

<b>SEED TREATMENT TRIAL Thief River Falls, MN</b>							
<b>Treatment</b>	<b>Yield (lb/ac)</b>	<b>Yield (bu/ac)</b>	<b>Contribution Margin (\$/ac)</b>	<b>Oil (%)</b>	<b>Seed Cost (\$/ac) *</b>	<b>Flea Beetle Rating **</b>	<b>Plant Stand (Pl/ft<sup>2</sup>) ***</b>
Gaucho + Clothianidin	1447	28.9	17.43	42.9	22.30	0	14
Gaucho CS	1559	31.2	31.08	42.6	18.70	0	17
Vitaflo 280 + Allegiance	1592	31.8	37.99	42.4	14.90	1	15
Helix Xtra	1612	32.2	32.62	42.2	21.75	0	18
Helix Lite	1560	31.2	31.49	42.7	18.45	0	17
Canola Package	1481	29.6	27.48	42.8	15.50	1	15
LSD	124.0	2.50		0.70		0.4	2.1
CV%	7.37	7.37		1.5		100.3	11.8

Note: Clothianidin is a non-registered product and price is the company's estimate of market value.

Note: \*These prices are based on consultation with industry representatives and include the cost of seed and treatment.

\*\* Average flea beetle ratings at 16 days after planting.

\*\*\* Stand counts at 16 days after planting.

**Discussion:** Helix Xtra yielded significantly higher than the Canola Package (fungicide only). The Vitaflo 280 + Allegiance treatment yielded significantly higher than the Gaucho + Clothianidin. Oil was not affected by seed treatment. Flea beetle ratings were low. However, the insecticide treatments had significantly lower flea beetle damage than the fungicide only seed treatments. Helix Xtra treatments significantly improved plant stands at 16 days after planting, compared to the canola package. However, these differences were not evident by 23 days after planting.