

Factsheet: Flea beetle Control, Plant Emergence and Seed Yield Response of Canola to addition of Lumiderm to Standard Seed Treatments



Objective:

The objective of this demonstration was to determine if the addition of Lumiderm seed treatment to either Helix Vibrance or Prosper EverGol can reduce insect feeding from flea beetles and improve seedling establishment and seed yield at either low or recommended seeding rates.

Methodology:

Two separate but simultaneous demonstrations were set up at the AAFC Scott Research Farm in 2015. Both trials were 2 x 2 factorials arranged as randomized complete block designs with four replicates. The first demonstration used Liberty Link (L252) canola with Proper EverGol as the standard seed treatment. The second demonstration used Roundup Ready canola (D3155C) and Helix Vibrance was the standard seed treatment. Each demonstration evaluated the respective standard seed treatments with and without the addition of Lumiderm and at two seeding rates - a "low" (60 seeds/m²) and a "recommended" (120 seeds/m²) rate. Fertilizer was applied at seeding according to soil test recommendations. Weeds were controlled using a pre-seed burndown and respective registered in-crop herbicides. No insecticide was applied.

Table 1. Detailed treatment list for the "Flea beetle control, plant emergence and seed yield response of canola to addition of Lumiderm to standard seed treatments" at Scott, Saskatchewan, 2015.

Treatments	Seeding Rate (seeds/m ²)	Seed Treatment (L252 variety)	Seed Treatment (D3155C variety)
1	60	Proper EverGol	Helix Vibrance
2	60	Proper EverGol + Lumiderm	Helix Vibrance + Lumiderm
3	120	Proper EverGol	Helix Vibrance
4	120	Proper EverGol + Lumiderm	Helix Vibrance + Lumiderm

Key Findings:

- Generally, seeding rate had significant effect on plant density at one and three leaf stages and plant dry weight in both trials.
- Neither seed treatment nor seeding rate x seed treatment interaction had significant effects on plant population and dry weight, except in L252 where plant population at the third leaf stage was significantly affected by seed treatment.

- Increasing seeding rate from 60 to 120 seed/m² in both trials resulted in a significant increase in plant population from 42 and 85 plants m², respectively.
- The significant difference in dry matter between the 60 seed/m² and 120 seed/m² in both canola varieties may be because high seeding rates increase early dry matter accumulation and weed competitiveness
- There was no significant difference in grain yield between the 60 and 120 seed/m² may be due to increased inter-plant competition or because canola can compensate at very low plant populations to result in similar yield potential at both seeding rates.
- From the study, based the contribution of seeding rate and seed treatment on canola competitiveness and yield, additional seed treatment may only be warranted when there is a high risk of heavy flea beetle infestation.
- Provided growing conditions are good and all other stress is minimal, canola may sustain considerable damage without losing substantial yield.
- At moderate to low flea beetle infestation levels, the added cost of Lumiderm may not be justifiable. Under that condition, however, producers may focus on seeding canola at the recommended or higher seeding rate with a standard seed treatment, provided the additional seed cost is less than that of the added seed treatment (Lumiderm).

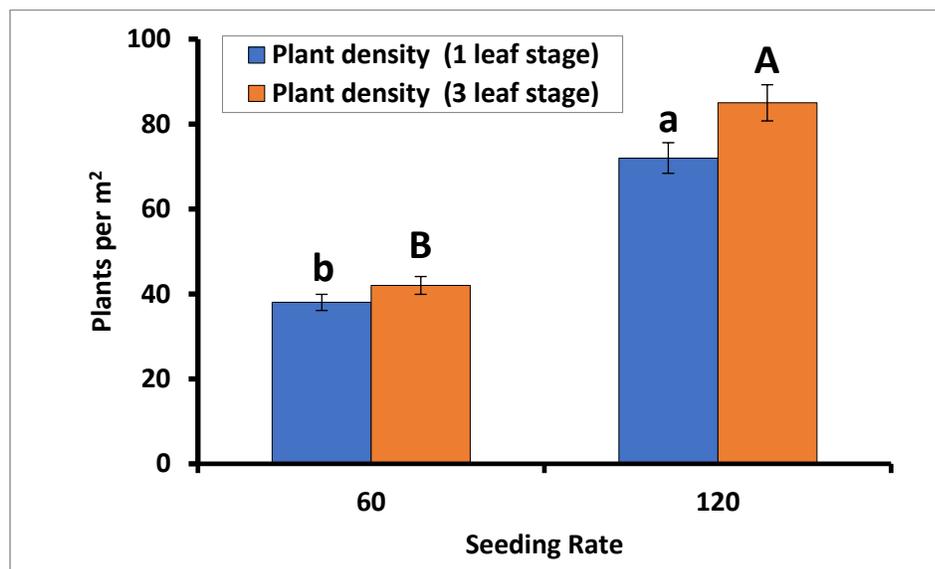


Figure 1. Effects of seeding rate on plant populations at one and three leaf stages in canola in trial 1 (L252) at Scott, SK in the 2015 growing season. Means followed by the same letters are not significantly different at $P > 0.05$ according to Tukey's Honestly Significant Difference (HSD).