

## 2017 Ultimate Canola Challenge: Seeding Rates

### Program Goals:

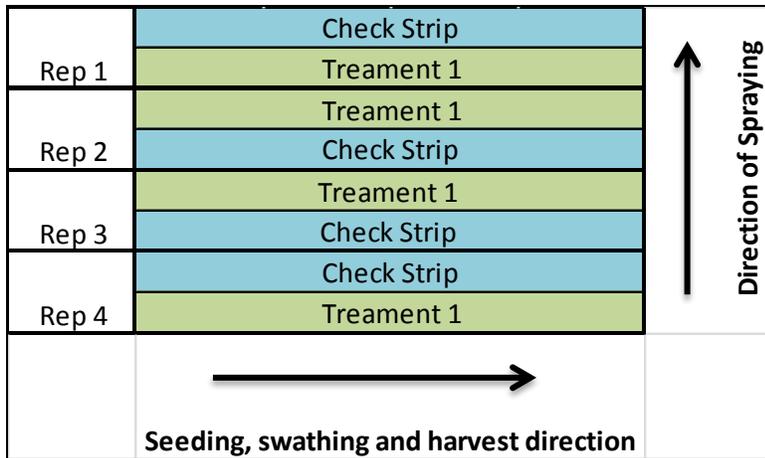
- Educating farmers on the most effective way to carry out on-farm trials, while collecting data from these trials to share with the canola industry and drive profitable agronomic practices.
- Identifying individual agronomic and economic seeding rates for canola in Western Canada.

### Grower Considerations:

- This project is for growers interested in learning how to better target their seeding rates to improve profitability and risk management in their canola crops.
- Flag your plots at seeding to have visual representation of where the plots are.
- How to calculate seeding rates to target different plant stands:
  - Canola Calculator: <http://www.canolacalculator.ca/>
  - Canola Encyclopedia Stand Establishment section: <http://www.canolacouncil.org/canola-encyclopedia/crop-establishment>
- Note data collection will be important in assessing results from the trial.
  - Refer to 2017 UCC Note Collection for note collection procedures (found [here](#)).
  - Plant density counts at 2-4 leaf stage (roughly 20-25 days after seeding) and actual seed survival (emergence can be calculated [here](#))
    - Take plant stand counts at 5 – 10 locations in each plot.
    - When counting plants, choose from the following approaches:
      - 1 meter length of row and calculate with row spacing to get density: most accurate, done in research projects
      - ½ m<sup>2</sup> hoop, multiply by 2 for plants/m<sup>2</sup>
      - ¼ m<sup>2</sup> hoop, multiply by 4 for plants/m<sup>2</sup>
  - Stubble density after harvest

### Trial Layout:

For your check strip, if you currently aim for:	Use the canola calculator to figure out treatment 1, which will be:
5 lbs/acre	7 plants/ft <sup>2</sup>
5 plants/ft <sup>2</sup>	8 plants/ft <sup>2</sup>
6 plants/ft <sup>2</sup>	9 plants/ft <sup>2</sup>
7 plants/ft <sup>2</sup>	10 plants/ft <sup>2</sup>



- Use the same seed survival (emergence %) for all seeding rate calculations. For help calculating and understanding seeding rates, go to [www.canolacalculator.ca](http://www.canolacalculator.ca)
- Replicate the check strip and treatments at least 4 times throughout the field.
- Randomize strips throughout the field.
- The area of the field for the trial should be as uniform as possible, avoiding headlands, field edges and water ways.
- Any disease, weed or insect control must be applied perpendicular to the direction of seeding.
- The width of a strip must be at least as wide as the combine pass, preferably wider.
  - Leave a 2' gap on either side of the plot to ensure treatments aren't mixed.

## Field-Scale Trial Tips

### Leaving a check strip:

- A check strip ensures differences in crop performance in the treatments are due to the treatment differences and not naturally occurring spatial variation. The further the check strip is from the other treatments, the less confident one can be that differences in product performance are real.
- The check strip should reflect your best management practices for your canola crop. Check strips should not be on field edges, headlands or areas that are not typical of the field.
- The selected field should be as uniform as possible in topography and soil. If a uniform area is not possible, choose an area of the field that reflects the field as a whole.

### Seeding:

- Ensure the same variety is used the entire trial.
- Seeding rate, seeding depth and speed must be the same for the entire trial.
- Seed entire trial on the same day.

### Fertility:

- Profitable canola production relies heavily on adequate plant nutrition. The field should be soil sampled in detail – 0-6", and 6 – 24" depths testing for N, P, K S and all micronutrients. Also test for EC, pH and Organic matter.
- If required, tissue testing can be done to measure the nutrient content of above - ground plant parts during growth.

**Weed Control:**

- Use normal weed control practices for the entire trial. Follow label recommendations for rates and timing.
- When spraying a herbicide, spray perpendicular to the direction of seeding to ensure the same amount of wheel tracks throughout the trial. Apply to entire trial on the same day.

**Disease Control:**

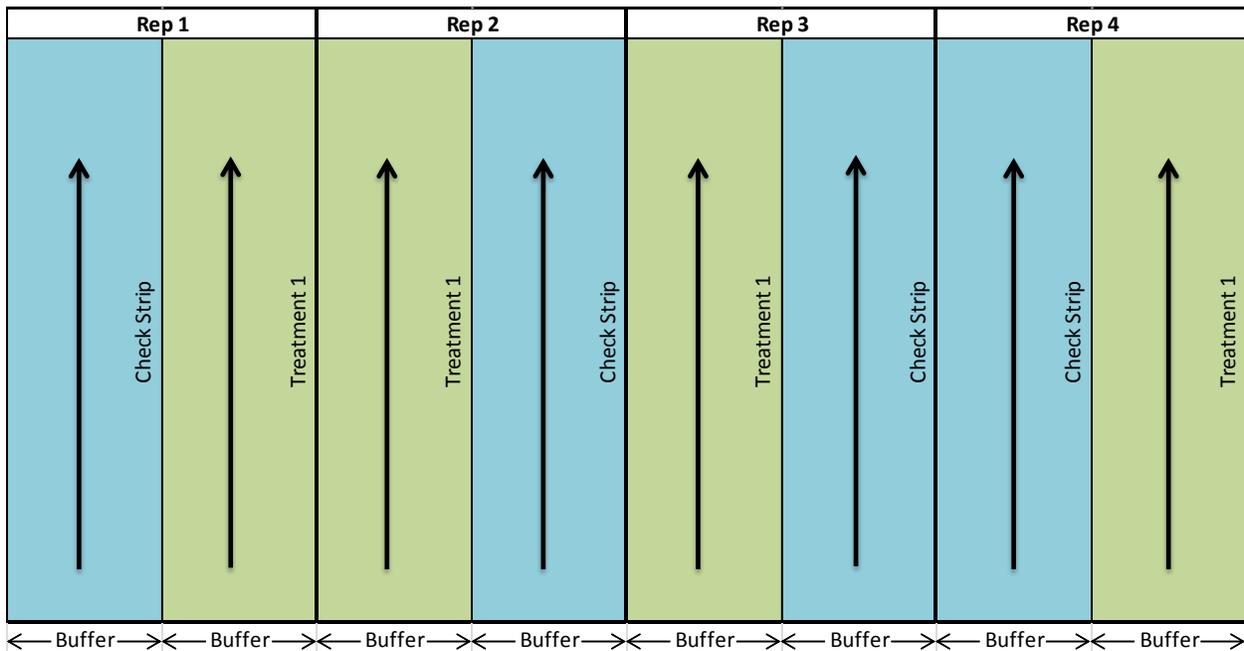
- Use normal disease control measures for the entire trial if required.
- If applying a fungicide, spray perpendicular to the direction of seeding to ensure the same amount of wheel tracks throughout the trial. Apply to entire trial on the same day.

**Insect Control:**

- Use normal insect control measures for the entire trial, if insects exceed acceptable thresholds. Follow label recommendations for rates, thresholds and timing.
- If chemical control of insect pests is necessary, select a product registered for the purpose, and apply it at a stage when a benefit is ensured. Applying too early or too late in the life cycle of the pest you are targeting may not give a desired result. Apply to entire trial on the same day.

**Swathing/Straight Cutting:**

- If swathing the canola crop, swath at 60% seed colour change.
- Swath/straight-cut all treatments on the same day.
- Swath/straight-cut up the middle of the plot, leaving a buffer on each side.
  - When swathing, mark the swath that represents your plot with a flag.
  - Swath the remainder of the field after the plots have been swathed.
- Minimum swathing/harvest length is 500 ft (preferably longer).



**Harvesting**

- Harvest all treatments on the same day.
- Use a weigh wagon to get the most accurate yield data.

- Make sure weigh-wagon calibrated prior to harvest season. Start with an empty hopper (prime on surrounding canola and dump) and harvest only the strips as per the swathing recommendations.
- Measure the exact length and width of the strips. Make sure hopper is empty after each treatment.
- If there were noticeable differences in maturity between strips, keep a grain sample in a zip lock bag from each strip and measure moisture content later.

**Total Bushels** = Weight in pounds ÷ 50

**Total Acres Harvested** = (Total Length ft x Total Width ft) ÷ 43,560

**Bushels per Acre** = Total Bushels ÷ Total Acres Harvested

#### **Record Keeping**

- Keeping records of your trial is important to the success of the trial.
- Plan on weekly scouting of the trial to note visual differences of the treatment, and make informed decisions about weed, disease or insect control, stand establishment issues and swathing and harvest timing.
- Record weather events, such as hail, frost, excessive heat, excessive humidity, excessive rain etc.
- Refer to the UCC Note Collection File ([here](#)) to keep accurate records throughout the season.

Contact your Canola Council of Canada Agronomist with any questions.