

The Ultimate Canola Challenge: Field-Scale Trial Tips for Foliar Applied Products

On-farm research can be useful to test products and practices on your own farm. The Ultimate Canola Challenge (UCC) is a program to encourage canola growers to implement simple, replicated research trials with their own equipment, on their own land. On-farm research can be a powerful tool when making decisions about new products or practices to see if they benefit your operation.

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 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.

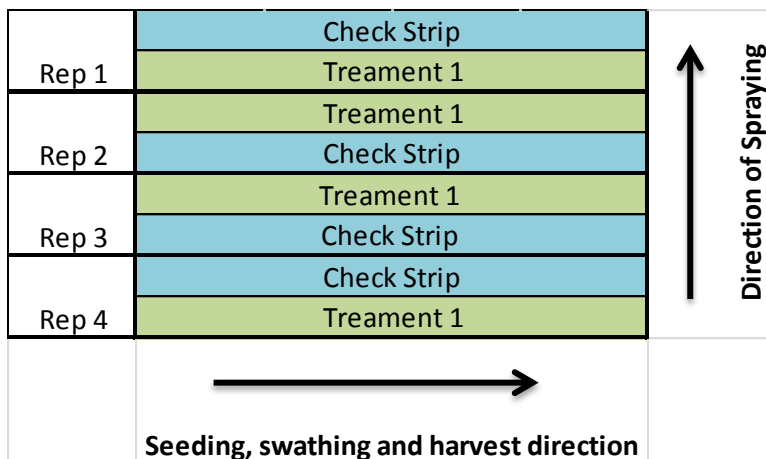
Randomization of treatments:

- Randomization of treatments is recommended to account inherent field variability from one area of the field to the next.

Replication of treatments:

- Replication is used to determine whether the difference between treatments is due to chance, or treatment performance. Chance variation is caused by differences in weather, soil and other factors. These factors change significantly from field to field and year to year.
- Replicating your check and treatment plots will give you much greater confidence in your results and final conclusions about a new practice.
- **It is recommended that 4 replications of the check strip and treatment are used in on-farm research.**

This sample layout can be used for any on-farm trial, and takes replication and randomization into account:



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:

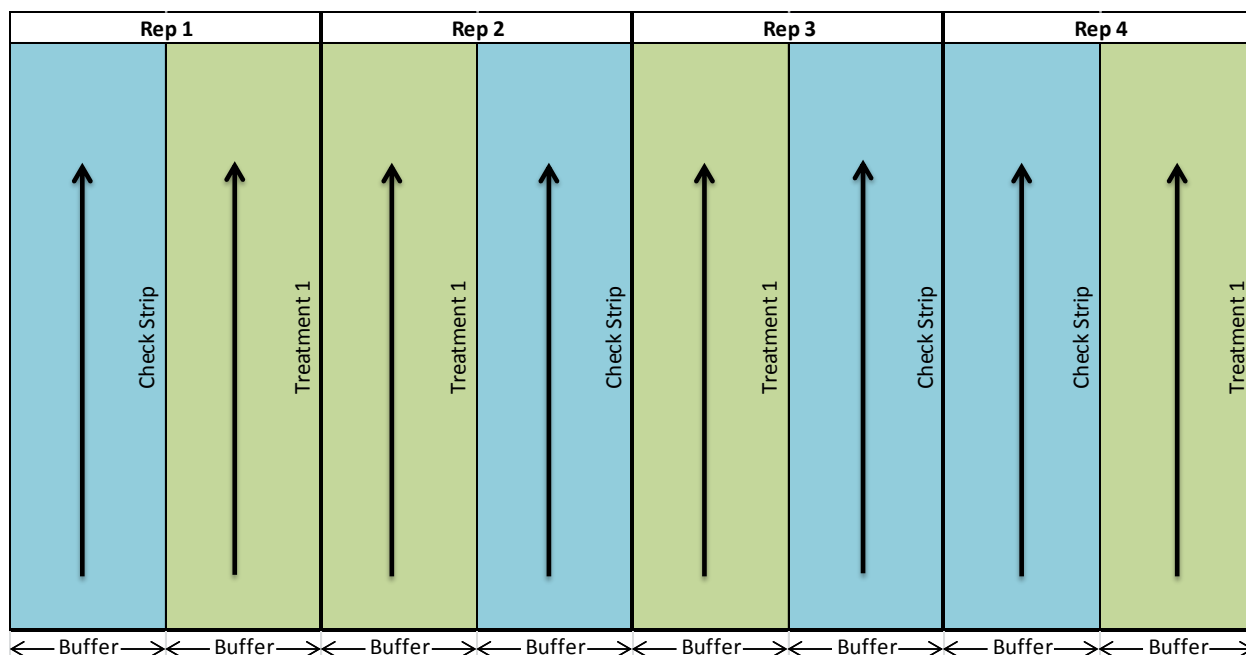
- Use normal disease control measures for the entire trial if required.
- If applying a fungicide, spray perpendicular to the direction of seeding to ensure the same amount of wheel tracks throughout the trial. Apply to entire trial on the same day.

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.

$$\text{Total Bushels} = \text{Weight in pounds} \div 50$$

$$\text{Total Acres Harvested} = (\text{Total Length ft} \times \text{Total Width ft}) \div 43,560$$

$$\text{Bushels per Acre} = \text{Total Bushels} \div \text{Total Acres Harvested}$$

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 to keep accurate records throughout the season.

Contact your Canola Council of Canada Agronomist with any questions.