Ultimate Canola Challenge: Seeding Speed

Program Goals:

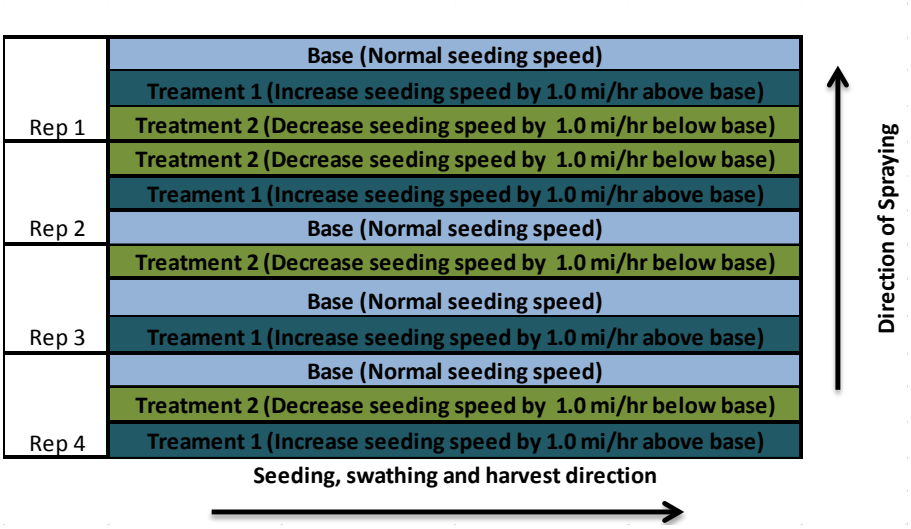
- Educating farmers on the most effective way to carry out on-farm trials, while collecting data from these trials to share with the canola industry and drive profitable agronomic practices.
- Identifying how increasing or decreasing seeding speeds affects crop emergence, plant counts, maturity and yield.

Grower Considerations:

- This project is for growers interested in learning how to better target their seeding speeds to improve profitability and risk management in their canola crops.
- Choose a target plant stand for the entire trial, based on typical emergence and thousand seed weight.
    - Canola Calculator: http://www.canolacalculator.ca/
    - Use the same seeding rate, with the same seed survival across the trial. The only variable changing is seeding speed.
- Data collection will be important in assessing results from the trial. Recommendations for plot measurements include:
    - Plant density counts during crop emergence. Flag 1/2m^2 at 3 different locations in each plot. Count crop emergence at the following intervals:
        - 10 days after seeding
        - 21 days after seeding
    - After final emergence counts (21 days after seeding), calculate seed survival using the canola calculator here.
    - In the same 1/2m^2 spots, assess:
        - Crop maturity in relation to the rest of the plot
        - Stubble density after harvest
    - Refer to UCC Note Collection for note collection procedures
- 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.

Trial Layout:

The following layout should be used to account for replication of treatments, and randomization – both important to getting good data from a trial.



Base = Normal Seeding Speed

Treatment 1= Increasing seeding speed by 1.0 mi/hr above base

Treatment 2 = Decreasing seeding speed by 1.0 mi/hr below base

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.
- Do not adjust seeding rate or depth. The only variable changing should be seeding speed.
- 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 nutrient deficiency is suspected during the growing season, 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:

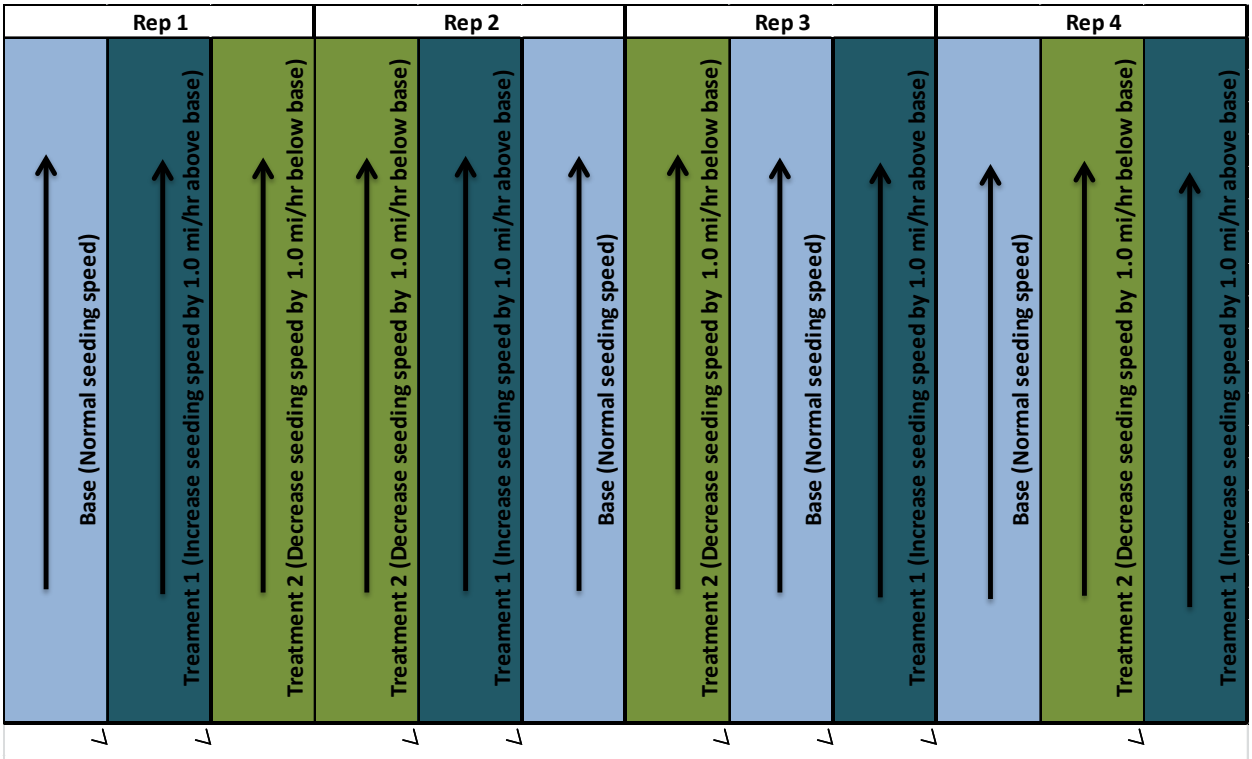
- Use normal disease control measures for the entire trial if required.
- If applying a fungicide, spray perpendicular to the direction of seeding to ensure the same amount of wheel tracks throughout the trial. Apply to entire trial on the same day.

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 no earlier than 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).



Swath/Harvest up the middle of the plot, leaving a buffer on either side. Flag the swath that represents the plot.

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.
- Keep a grain sample in a zip lock bag from each strip and measure moisture content, green seed and dockage.

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

- It is recommended to plan on weekly scouting of the trial to note visual differences of the treatments, 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.