

### **2016 UCC Objectives:**

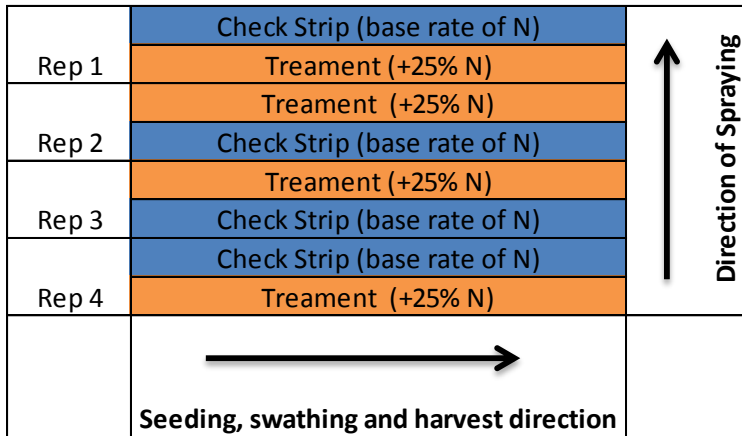
- Educating farmers on the most effective way to carry out on-farm trials, while collecting data from these trials to share with the canola industry.
- Identifying agronomic and economical optimal Nitrogen rates for canola in Western Canada.

### **Grower Considerations:**

- This is a good project for grower interested in learning how increasing Nitrogen rates affect yield and economics of their canola crop.
- Growers must be able to increase just Nitrogen rates (without increasing Phosphorus or Sulphur rates)
- Note collection will be important in assessing results from the trial.
  - Rainfall information (dates and amounts)
  - Plant Stand Counts at 20-25 days after seeding and assess the number of plants per square metre (or square foot).
  - Refer to 2016 UCC Note Collection (Nitrogen) for note collection procedures.

### **Trial Layout**

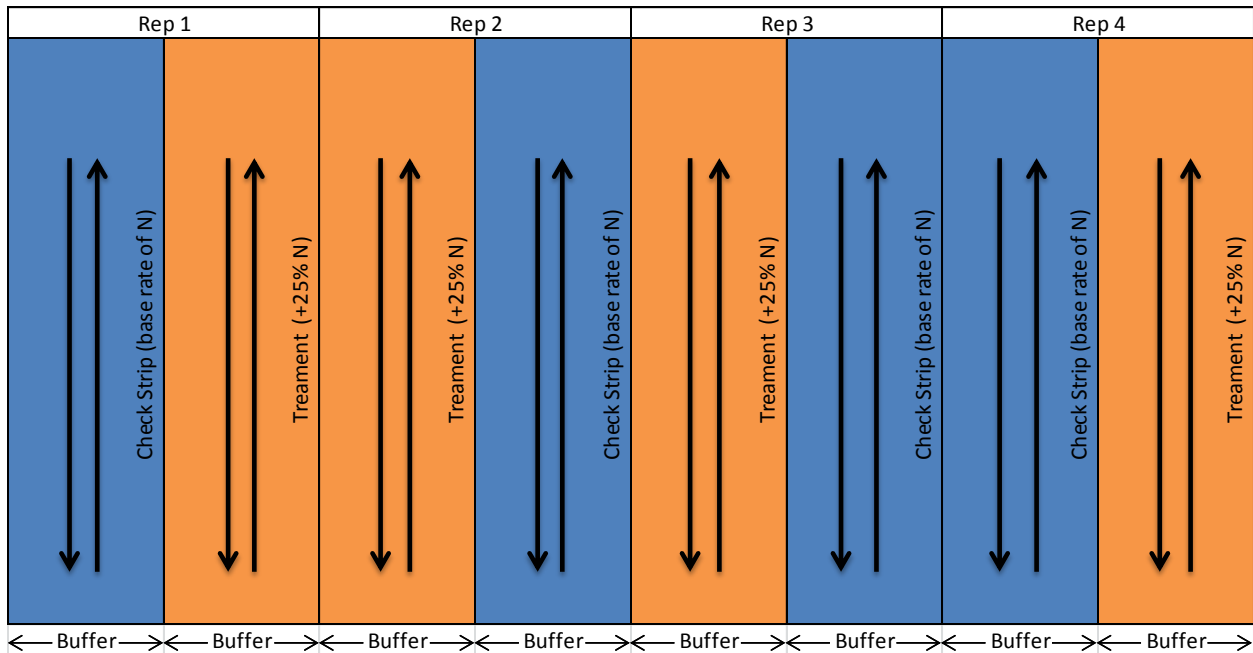
- Check strip will be your base rate of Nitrogen – what you normally apply to your crop based off soil test results.
- Treatment will be increasing actual Nitrogen by 25% (Additional treatments can be added, however for coordinated trials across Western Canada, 25% must be included).
  - It is important to increase only Nitrogen rates, not other nutrient rates. This would lead to confounding affects, where an increase in yield could not be attributed to Nitrogen specifically.
- Replicate the check strip and treatment 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:**
  - Leave a check strip in the trial. 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.
- **Seeding:**
  - Ensure the same variety is used for all treatments in the 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.
    - If tissue testing, avoid unusual, dead or stressed plants, as well as those covered with soil or recent sprays.

- Cut samples with a clean, rust-free knife or scissors. Send separate samples from good and poor areas within a field.
  - Make sure the plants in each area are at the same growth stage.
  - Get full testing requirements from the lab you will be submitting samples to.
- **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 all treatments 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 all treatments 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 all treatments 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 to keep accurate records throughout the season.

Contact your Canola Council of Canada Agronomist with any questions.