

Research Trial Protocol: Seed Placed Fertilizer

Updated: March 2024

Research Question: Are seed-placed fertilizer (SPF) applications being used across Manitoba safe for canola plant establishment and what are the main factors influencing seed safety?

Treatments

1. Untreated – no seed placed fertilizer
2. Standard SPF Rate (Farm normal for that field/location in field)
3. High SPF Rate – 150% of Standard SPF Rate

Trial Design and Layout

- This trial is designed with 3 treatments per field in a ramp-up layout and replicated by field location, rather than within a field (1 replicate per location)
- Ensure each treatment is long enough to allow for full change of fertilizer rate (See plot map).

Grower and Trial Location

- Must be a MCGA Member. Grower name to be submitted to MCGA for member check before trial is initiated no later than **April 30th**.
- Must be able to adjust only SPF rate (without adjusting seeding rate).
- Trial area should be placed in a relatively uniform portion of a field, avoiding major landscape changes and headlands
- Legal Land Description and GPS Coordinates of first plot to be set to MCGA no later than **June 15th**.

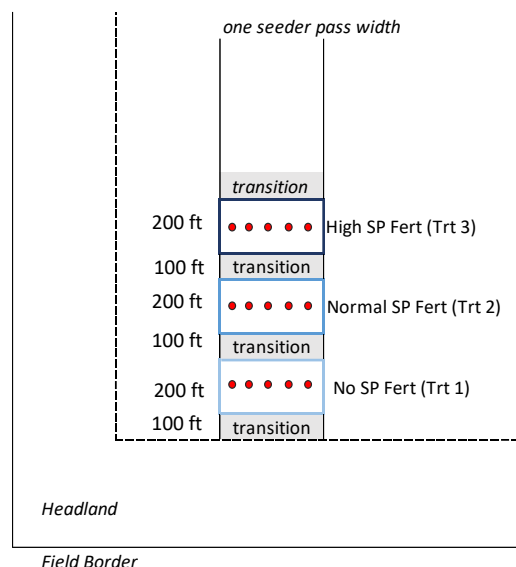


Figure 1. Plot map, red dots indicate plant count locations.

Data Collection (Excel Data Collection File provided by MCGA)

1. Crop Management Data
 - a. Previous crop,
 - b. Tillage system
 - c. Soil Moisture and Temperature at seeding
 - d. Seeding date
 - e. Seeding Rate
 - f. Seeding Equipment – Type, Row Spacing, Opener Type and width
 - g. Variety – Name, TKW and seed treatment
 - h. Additional Fertilizer applications – Products, rates, timings and placements.
2. Soil Sample
 - a. One composite sample in the spring from entire trial area (min 15 cores)
 - b. 2 Depths: 0 - 15 cm (0-6") + 15 - 60cm (6-24")
 - c. All soil samples sent to Agvise Laboratories:
 - i. Label with Contractor Name and Trial ID

- ii. Analysis: **F2 (Complete) AND Soil Texture**
 - iii. Billed to MCGA Account (**MA1258**)
 3. Plant Counts
 - a. Plant counts from 5 locations in each plot at 3-4 leaf stage.
 - i. Count all plants present in **1m row length at each of the 5 locations per plot.**
 - ii. Record row spacing along with count data in excel data file.
 4. Environmental Conditions
 - a. Rainfall in the period between seeding and plants counts.
 5. Observational Ratings
 - a. Flea Beetle Ratings: Rating from 1 – 5 on flea beetle pressure in the field (1= no pressure, 5= re-seed)
 - b. Weed Pressure Ratings: Ratings from 1 – 5 on pre-in crop herbicide weed pressure (1=clean field, 5=complete ground cover)
 - c. Spring Soil Moisture Rating: Rating from 1 – 5 on spring moisture at field (1=below normal, 3=normal, 5=above normal)

General Trial Management

Seeding

- The same variety from the same seed lot should be used throughout the entire trial.
- Use a consistent seeding rate, seed depth, and seeding speed for the entire trial

Fertility

- All nutrients other than seed-placed fertilizer must remain at a similar rate/sources for the entire trial to avoid confounding factors

Pesticide applications

- Spray pest control products (herbicides, fungicides, and insecticides) across the entire trial as needed similar to the remainder of the field.

*****All Data must be returned to MCGA by July 1*****

Payment: See Research Agreement for Payment Schedule and Invoicing Information for Agronomist Research Contractors.

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