

Project F:



Manitoba Crop Alliance FLAX SEEDING RATE



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Replicated Strip Trial Protocol

OBJECTIVE:

The purpose of this project is to quantify the agronomic and economic impacts of three different flax seeding rates in alternating strips across the field – 4 sites.

BRIEF SUMMARY:

- The grower will seed their normal seeding rate in 4 strips, alternating with 4 strips each of a lower and higher seeding rate.
 - An example is shown on the right using a target flax seeding rate of 35 plants/ft² and a higher and lower rate of 45 plants/ft² and 25 plants/ft², respectively.
- The width of a strip must be at least as wide as the combine pass, preferably wider. Harvest length should be not less than 1,000 feet.
- The alternating strips of the flax seeding rate can be planted by using GPS to plant every other strip with one seeding rate and then filling in the skipped passes with the second seeding rate.
- Take a seed sample from planter (about ½ an ice cream bucket).
- Harvesting must ensure at least one “pure” combine pass from each treatment (no mixing of yields from two different seeding rates).

| |
|---------------------------|
| 35 plants/ft ² |
| 45 plants/ft ² |
| 25 plants/ft ² |
| 45 plants/ft ² |
| 35 plants/ft ² |
| 25 plants/ft ² |
| 35 plants/ft ² |
| 45 plants/ft ² |
| 25 plants/ft ² |
| 25 plants/ft ² |
| 35 plants/ft ² |
| 45 plants/ft ² |

GROWER REQUIREMENTS:

- Supply information (if unknown at seeding) on location, planting date, variety, fertility, cropping history, etc. by June 30.
- Areas containing waterways and headlands should be avoided. All other factors in the trial area must be managed the same (planting date, variety, fertility, etc.).
- If possible, accurately record where all the treatments were applied using GPS mapping equipment.
- All strips must be harvested on the same day.
- Allow the Manitoba Crop Alliance to use the collected data for research, educational, and informational purposes.
- Must be a member in good standing with MCA.**

MCA AND PARTNERS AGREE TO:

- Attempt to collect aerial images from each field and provide them to the grower at no cost.
- Set up trial with growers in field, soil sample, weigh individual strips with weigh wagon, do plant counts after seeding but before harvest, take a harvest sample.
- Provide a report analyzing the statistical and economical treatment differences.
- Keep data in a confidential manner that cannot be linked back to the individual producer by other parties.

Benefits to Growers:

- Access to the latest research which can be adapted to your farm.
- Creating a crop production database for your local area.
- Higher quality of data – multiple evaluations across numerous farms under different management styles, soil types and cropping history.

If you are interested in doing a trial or have questions, please contact:

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FLAX SEEDING RATE
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Calculating Seeding Rates:

$$\text{Seed Rate(lb/ac)} = \frac{\text{Target Plant Stand/ft}^2 \times 1000 \text{ Kernel Weight(grams)}}{\text{Expected Seedling Survival}^* \times 10}$$

*Includes percent germination and seedling mortality

Example:

Target Plant Stand = 35 plants/ft²

1000 Kernel Weight = 6.0 grams

Germination = 95%

Assumed Mortality = 40%

Expected Seedling Survival = (0.95 x (1-0.40)) = 0.570

$$\text{Seed Rate (lb/ac)} = \frac{35/\text{ft}^2 \times 6 \text{ g}}{0.570 \times 10} = 36.8 \text{ lb/acre}$$

General Note: Seedling mortality can vary in the range of 35-50% for flax. 35% at the lowest seeding rate up to 50% for a high seeding rate.

Data to be Collected by Contractor or MCA (2024 Trials):

- ✓ Plant Stand – plants/ft² – after emergence but prior to harvesting
- ✓ Plant Height – recorded in inches – after flowering but prior to harvesting
- ✓ Lodging – 1=no lodging; 5=flat – just prior to harvest or before swathing
- ✓ Harvest Sample – 1 composite sample/seeding rate for quality analysis
- ✓ General Observations – e.g., General weed control; maturity

Conducting Plant Stand Counts (per metre row):

$$\text{Plants/m}^2 = \frac{\text{\# of Plants per metre row} \times 100}{\text{Row Spacing in cms}}$$

1" = 2.54 cm

ft² = m² / 10.76

Example:

45 plants per metre row

6" row spacing (15.24 cms)

$$\text{Plants/m}^2 = \frac{45 \text{ plants} \times 100}{15.24 \text{ cms}} = 295 \text{ plants/m}^2 \text{ (27 plants/ft}^2\text{)}$$