

Project J:



Manitoba Crop Alliance WHEAT - ENHANCED EFFICIENCY FERTILIZER USAGE (UREA)



Replicated Strip Trial Protocol

OBJECTIVE:

The purpose of this project is to quantify the agronomic impacts of enhanced efficiency fertilizer usage on wheat for yield and grain quality.

BRIEF SUMMARY:

- The grower will apply blends of urea fertilizer + enhanced efficiency fertilizer (EEF) at seeding time in alternating strips. All fertilizer treatments will be applied at the time of seeding.
- An example is shown on the right where the check fertilizer treatment is applying 100% urea fertilizer; then treatment 2 is a blend of 75% urea + 25% EEF; then treatment 3 is a blend of 50% urea + 50% EEF.
- The width of a strip must be at least as wide as the combine pass, preferably wider. Harvest length should not be less than 1,000 feet.
- The alternating strips of the fertilizer blends can be planted by using GPS to plant every other strip with one fertilizer blend and then filling in the skipped passes with the second fertilizer blend.
- 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 treatments).

75% urea+25% EEF
50% urea+50% EEF
100% urea
50% urea+50% EEF
75% urea+25% EEF
100% urea
75% urea+25% EEF
50% urea+50% EEF
100% urea
100% urea
75% urea+25% EEF
50% urea+50% EEF

GROWER REQUIREMENTS:

- Supply information (if unknown before 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.
- Make this minimum work for the grower.

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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Important Notes:

- ✓ EEFs often have less N per pound of product as compared to urea. Typically, urea is 46% N while ESN is 44% urea. Total N rates will remain the same, but pounds of N product will differ between the blends.
- ✓ Use this protocol with Urea fertilizer and either Agrotain or ESN blends

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
- ✓ Yield – bushels/acre – adjusted to 14.5% seed moisture
- ✓ Seed Moisture - % taken at time of harvest
- ✓ Bushel Weight – lb/bu – taken at time of harvest
- ✓ Harvest Sample – 1 representative sample per strip for quality analysis
- ✓ General Observations – e.g., Differences in height, lodging, maturity