



**Plot2
Farm**

W004 - Enhanced efficiency fertilizer use in spring wheat

Objective: Compare the yield, protein and quality of utilizing enhanced efficiency fertilizers (EEFs) at seeding on spring wheat.

Research support

Previous research conducted in Alberta has indicated that EEFs may impact protein and yield. However, research has also indicated that results can be inconsistent and sometimes lead to decreased yield in drier conditions. This trial looks to determine if blending nitrogen (N) fertilizer sources at seeding (urea and EEF blends) will impact yield and protein of CWRS or CPSR wheat. Multiple N fertilizer blends can be compared at the same overall N fertilizer rate.

This on-farm research protocol will help determine the value of EEFs on yield, quality and protein of CWRS or CPSR wheat on your farm under typical management.

Field Layout and Selection

Field layout will depend on the number of treatments selected. Review the Research Guide for the best practices on treatment design, choosing your trial and how it should be laid out.

Treatments

To follow good experimental protocol, treatments should be both replicated and randomized. For example, if you are testing 2 treatments, the order of those treatments change in each replication. For example, in replication 1, treatment one precedes treatment 2, but in the second replication, treatment 2 precedes treatment 1. This reduces the effects of field variability on results. Take detailed notes to remember the order of treatment applications.

Treatment 1:

All nitrogen applied as urea at time of seeding. Desired nitrogen rate is calculated based on the yield goal soil available nitrogen.

Treatment 2:

All nitrogen applied as a blend of 75% urea and 25% EEF at the time of seeding. Total N rate is the same as Treatment 1.

Treatment 3:

All nitrogen applied as a blend of 50% urea and 50% EEF at the time of seeding. Total N rate is the same as Treatment 1.

Please indicate type of EEF nitrogen used in the application form section 'App Section B'. The same EEF nitrogen source must be used for all of the treatments.

Replication 1	Treatment 1
	Treatment 2
	Treatment 3
Replication 2	Treatment 2
	Treatment 3
	Treatment 1
Replication 3	Treatment 3
	Treatment 1
	Treatment 2
Replication 4	Treatment 2
	Treatment 3
	Treatment 1

Additional Notes:

1. All treatments will receive the same cultivar, seed treatments, herbicide, fungicide, pre-seed and harvest treatment.
2. EEFs often have less N per pound of product compared with urea. For example, urea is 46% N while ESN is 44% urea. Total N rates will remain the same, but pounds of N product will differ between treatments 1 and 2.
3. EEFs often have less N per pound of product compared with urea. For example, urea is 46% N while ESN is 44% urea. Total N rates will remain the same, but pounds of N product will differ between treatments 1, 2 and 3.
4. N fertilizer placement must be the same for all treatments.
5. Always read and follow label directions.