2018 On-Farm Research Summer Protocol

# Variable Rate Nitrogen on Wheat

## Choosing the Right Field

- Fields with variability within the field will benefit most from a variable rate application (topography, soil type, etc.)
- Plots typically run the full length of the field and must be wide enough to allow for at least one full combine pass through the plot that avoids sprayer tracks (usually 100-140 ft). Harvesting with a guidance system is also easier with wider plots.
    - If sprayer tracks cannot be avoided, then each strip should include sprayer tracks. The important thing is that all blocks are treated the same.

## Data that Research Coordinator Will Collect

- Precipitation
- NDVI
- Yield, moisture, test weight, protein

## Variable Rate Application

- Preferably include a N-rich strip in the field with at least a 2x rate of N applied to aid optical sensing
- Prescription maps for variable rate strips will be made in conjunction with the producer or a consultant using their standard methods
- Applications should be either 100% fall applied or 100% spring applied
- The two treatments will be a blanket N rate compared to a variable rate N application
- Preferably include at least four replications of the two treatments (8 plots)
- The blanket N rate is decided by the producer and should be typical for the operation
- The variable rate plots will use the blanket rate as the 100% optimum N rate
- Please notify the Research Coordinator before the application is made so that the plots can be flagged during the fertilizer application.

## Harvest

- MN Wheat will be present at harvest with one weigh wagon to measure plot yields. The combine will need to either unload into the weigh wagon or into a grain cart, and then into the weigh wagon. Grain will be sampled from the weigh wagon to test moisture, test weight, and protein.
- The producer will need to supply MN Wheat with the yield map of the field for statistical and economic analysis after harvest.

Call us anytime to discuss further: Thank you - Lauren, 218-556-3174; Melissa, 952-738-2000