Nebraska On-Farm Research Network
AnnGro®-R Fertilizer Additive (ANNGRO USA)

Protocol developed by: Laura Thompson and Keith Glewen, UNL Extension Educators

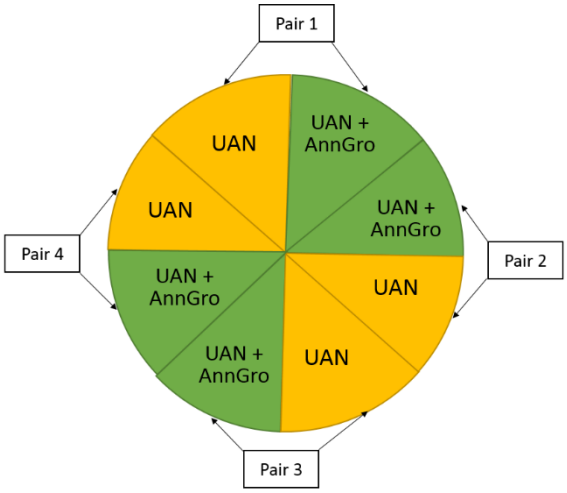
Objective: AnnGro-R is a bio-based product claiming to enhance the uptake and transport of plant nutrients. The objective of this study is to evaluate the effects of AnnGro-R Fertilizer Additive applied with UAN fertilizer in-season versus UAN fertilizer applied in-season with no additives. The product will be evaluated based on corn grain yield.

Study Design:

Treatments
A: Grower's in-season UAN Rate (should be around 40 lbs N/acre) (check)
B: Grower's UAN Rate + AnnGro-R

For AnnGro-R Treatment use 1 qt per ton of UAN. The mixture should be agitated for **at least one hour** prior to application to pack fertilizer into AnnGro-R vesicles.

Experimental Design: Irrigated Pies



UAN and AnnGro-R product is supplied via fertigation. The fertigation system must be able to record the GPS location of each of the pie shaped treatments. Product should be applied between V3 and V12. Pivot treatment diagram is shown at left. If multiple applications of UAN are made throughout the year, AnnGro-R can be applied each time to the designated wedges (preferred but not necessary). Buffers between treatments will be created during yield data analysis.

Comparisons will be made using yield monitor data at harvest, therefore the combine must be equipped with yield monitoring capabilities.

Herbicides should not be mixed with AnnGro-R product during fertigation. The entire study area must be planted to one hybrid.

Data to be collected

UNL extension personnel will work with the growers to collect all data below.

1. Stand counts for each strip at harvest.
2. Yield for each strip via weigh wagon or yield monitor.
3. Site rainfall records will be obtained from interpolated radar estimates.
4. Other information including soil type as defined by USDA, previous tillage conditions, hybrid planted, tillage system, residue type, planting depth, and others will be required to be provided by the grower.

Responsibilities:

ANNGRO USA will:

1. Provide AnnGro-R product sufficient to meet specifications of the experimental design.
2. Compensate grower for their efforts. Please inquire for more information.

Nebraska On-Farm Research Network will:

1. Assist with site design adjustments and flagging plots as needed.
2. Collect stand count data, process yield files, and assemble background agronomic information for each site.
3. Return a statistically analyzed report of treatment differences to growers and ANNGRO USA.

Grower Requirements:

1. Flag or **mark** GPS location of each treatment wedge. Ideally as-applied maps should be shared with UNL Extension.
2. Provide all necessary **inputs** for crop production.
3. Complete a **background** agronomic form about site and practices.
4. Collect **yield data** and **grain moisture** with yield monitor. Separate regions or loads should be used in the yield monitor to identify each strip of untreated and AnnGro-R® treatments. Yield monitor must be **well calibrated**. Contact UNL Extension if assistance with this process is needed.
5. Collect **stand counts** at harvest. Each treatment in all replications should have a stand count recorded. It is recommended that at least 3 counts be averaged together for each reported stand count. Contact UNL Extension for assistance with stand counts.
6. Submit harvest data to UNL Extension within 30 days of harvest or by Dec. 15 of the harvest year.
7. Allow UNL Extension to use submitted and collected data for research, educational, and informational purposes.

For assistance with studies, please contact the Nebraska On-Farm Research Network Coordinators:
Keith Glewen: kglewen1@unl.edu or 402-624-8005
Laura Thompson: laura.thompson@unl.edu or 402-472-8043