

Iowa Soybean Association On-Farm Network® Ultimate Nitrogen Replicated Strip Trial Protocol

Objective:

The purpose of this project is to identify which portions of the field need more or less nitrogen. This is achieved by using two uniform rates that vary by 25 pounds of nitrogen per acre in alternating strips across the field. The areas with differences in yields identify areas needing more nitrogen.

Brief Summary:

Growers with yield monitors equipped with GPS will compare two rates of N with 25 lbs. per acre difference in alternating strips across the whole field. Based on past replicated strip trials an optimum N rate will be determined and two application rates of 12.5 lbs. above and below the optimum will be applied. Each rate must be uniformly applied. A field with straight rows is preferred having variability of soil type, topography, etc. An example of a trial is shown on the right for a field with a historic optimum N rate of 112 lbs. The width of a strip must be at least as wide as the combine pass and preferably wider. Harvesting must ensure at least one “pure” combine pass from each treatment (not mixing yields from two different treatments). Mixed passes are acceptable when the application width is wider than individual combine passes, but the grower must be able to harvest at least one pure pass from each treatment. Loads or regions should be used in the yield monitor to identify each N rate separately and any mixed passes.



Grower Requirements:

1. Contact Matt Sweeney at 515-669-9157 to confirm intent.
1. Complete and submit a replicated strip trial registration form by June 10, 2011 along with a field boundary in shapefile format (.shp, .dbf, .shx, & .prj) or FSA map with the field clearly outlined.
2. Apply a minimum of 10 replications as shown in the diagram above with alternating strips of N rates with a 25 lbs N difference with the rows. The length of the replicated strips should be a minimum of 1,320 feet. Areas containing waterways and/or point rows should be avoided. All other factors in the trial area must be managed the same (planting date, variety, etc).
2. Accurately record where all treatments were applied using GPS mapping equipment and submit as-applied data within 30 days in the following format: raw files from the memory card or exported shape file (.shp, .dbf, .shx, & .prj).
3. Provide management information relevant to this trial.
4. Trial must be harvested with a calibrated yield monitor equipped with GPS. If possible, harvest the entire trial area on the same day. Complete yield card backup must be submitted within 30 days of harvest or no later than December 1, 2011.
5. Allow ISA to use submitted and collected data for research, educational, and informational purposes.

ISA Agrees to:

1. Cover any yield loss caused by the lower rate treatment in the replicated strip trial. The price of corn is preset at \$6.00/bu and is limited to the lower rate treatments of the field. In addition, the savings from applying less nitrogen will be deducted from the yield loss payment due to extended amount of acres in an ultimate N trial.
2. Pay the producer a \$200 trial hassle fee after the successful completion of the project.
3. Attempt to collect aerial images and stalk nitrate samples from each field and provide them to the grower at no cost.
4. Return a report analyzing the treatment differences.
5. Keep data in a confidential manner that can't be linked back to the individual producer by other parties.

