

Nebraska On-Farm Research Network: Project SENSE Protocol

www.crowatch.unl.edu/farmresearch

Objective:

- To demonstrate the crop canopy sensor method for improving NUE.
- To collect necessary data to validate and refine sensor N recommendation algorithms.

Treatments:

- Grower's normal N management - **blue**
- High N reference (N applied at non-limiting N rate - 250 lbs of N/acre is suggested) - **white**
- Project SENSE N Management: Base rate of 75# of N plus in-season application using the Ag Leader® OptRx™ System and built in algorithm - **pink**

Layout: The plot has been designed to have 6 replications of the producer and project SENSE N rates, plus 2 strips of the high N reference. The plots are randomized to allow for statistical analysis to determine confidence in results. The layout at right shows how these studies should be implemented.

12 Rows of Producers application rate
12 Rows of Project SENSE application
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12 Rows of Producers application rate
12 Rows of High N reference (Greater than 250 lbs of N/acre)
12 Rows of Project SENSE application
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12 Rows of High N reference (Greater than 250 lbs of N/acre)
12 Rows of Project SENSE application
12 Rows of Producers application rate
12 Rows of Producers application rate
12 Rows of Project SENSE application

Other Guidelines:

- Row spacing must be 30".
- Grower must have yield monitor and capacity for yield mapping.
- Treatment strips may vary from grower to grower but must be at least 8 rows in width.
- Site must be irrigated with center-pivot, but not fertigated. If 0.5" of rain does not occur within a week of the Project SENSE application, grower must irrigate (0.5").

Grower Responsibilities:

- Planting, harvest, and all other management involved with producing the crop.
- Calibration of yield monitor and submission of harvest data files to Nebraska Extension.
- All N applications EXCEPT the Project SENSE in-season application must be done by the grower.
- The N required for the Project SENSE in-season application must be provided by the grower and delivered to the field on the day of application.

UNL Extension Responsibilities:

- Assist with plot layout, flag the field and mark GPS of each treatment.
- Apply in-season N application to Project SENSE strips
- Assist with yield monitor calibration, analyze raw yield data using statistical analysis, and provide a report to the grower.
- Collect other data including: soil OM, deep soil nitrate, and Veris OM, pH, and EC.