



On-Farm Trials 2024 Corn Nitrogen Rate Protocol

Objective:

The objective of this study is to evaluate corn yield response to a range of nitrogen (N) application rates across Mid-Atlantic conditions. Cooperators will also be asked to participate in an end-of-season debrief with our research team.

Varieties:

Cooperator preference; any commercially available corn variety but it must be reported to the On-Farm Trials (OFT) Coordinator.

Field Selection:

Any N responsive field site. Please provide a copy of your most recent soil test report, targeted seeding population at planting, and at least five years of yield monitor data to OFT Coordinator

Treatments:

Five rates of N will be determined as a percentage of the cooperator's status quo N application rate for the selected field. Rates will be 0, 30, 60, 90, 120, 150% of the status quo N rate. The 0 and 30% treatments will be satisfied with pre-plant N application, while the 60-150% treatments will be split between preplant and sidedress applications to corn. The treatments will be replicated 5 times within the field. We prefer cooperators use commercial-scale equipment for treatment application but UMD Agronomy Trials Center personnel can be available to sidedress if necessary. Plot length may be decreased to accommodate smaller scale University equipment.

Plot Size:

Plots should be sized such that they are at least one combine width wide. Plots should be at least 300' long or the length of the field.

Harvest:

Grain weight should be measured with a weigh wagon OR in a grain cart using calibrated truck scales OR export of yield monitor data so long as cooperator's combine is calibrated with a weigh wagon prior to harvesting strips.

Data to be collected by OFT Coordinator:

- Weather data
- Grain yield, moisture, test weight

Expectations for Cooperators:

For this protocol, all planting, treatment application, and harvest will be carried out by the Cooperator using their equipment (or equipment procured by the Cooperator). UMD personnel can provide small-scale equipment to apply treatments if absolutely necessary, but we prefer to use commercial scale equipment.

We expect the Cooperator will clearly communicate with OFT Coordinator about their plans for planting, treatment application, and harvest as soon as possible to allow OFT Coordinator to be present to assist. We ask that participants consider joining an end-of-season debrief session with our research team that can be scheduled in the winter at the participant's convenience, either virtually or in-person. Additional monetary compensation will be provided for participation in the debrief session.

Timeline:

ASAP but prior to April 1 – Indicate your interest in participating through Google Form

Early April – meeting with Dr. Fiorellino and OFT Coordinator to discuss trial location, execution of protocol, determine plot layout, mark field location of trial (if applicable)

April-May – Cooperator communicates with OFT Coordinator their plans for planting such that OFT Coordinator will be present for planting, if necessary.

June-July – Cooperator communicates with OFT Coordinator their plans for sidedressing as soon as possible such that OFT Coordinator will be present for treatment application

May-August – OFT Coordinator visits trial periodically and collects weather data; begins planning for data collection logistics at harvest

September-October – Cooperator communicates with OFT Coordinator their plans for harvest, OFT Coordinator is present for harvest and data collection

Cooperator Report:

Cooperators will receive a preliminary statistical analysis of all harvested trials as soon as possible. Cooperators will receive a copy of the final On-Farm Trials Summary Report when completed.

Data Use:

Data collected will be aggregated prior to reporting, with no identifying information or location shared publicly. General farm location (region or area of county) may be identified on a map, but individual field locations will not be shared.

Compensation:

Cooperators will be compensated from University of Maryland for participation in the field protocol as well as an end of season debrief with researchers from University of Maryland and University of Delaware. Participants in this trial are eligible to receive \$2,066 for participation. We require a current W-9 to provide payment to the cooperator.

Contact:

Mr. Gene Hahn, On Farm Trials Coordinator, can be reached via email at ghahn@umd.edu or (301)514-8569.