Nitrogen Optimization Pilot Grant Program

Request for Proposals
FY 2023

Application Form

https://datcp.wi.gov/Pages/CommercialNitrogenOptimizationPilotGrantProgram.aspx

Deadline

January 31, 2023

Electronic submissions only to:

DATCPNOPP@wisconsin.gov

Questions can be directed to:

Susan Mockert: 608-224-4648, Susan.Mockert@wisconsin.gov

The Department of Agriculture, Trade & Consumer Protection (DATCP) provides funding to agricultural producers to focus on commercial nitrogen optimization activities through the Nitrogen Optimization Pilot Program (NOPP).

Agricultural producers will collaborate with the University of Wisconsin (UW) System scientists to conduct research projects that enhance understanding of and refine new methods that optimize commercial nitrogen applied to agricultural fields.

The pilot project is anticipated to cover two grant cycles, or a total of four years. DATCP will meet with participants and collaborators over the course of the grant cycles to discuss potential paths forward.

Funding priorities

Funding priorities are set in statute and include:

- Projects located in different parts of the state to incorporate data from differing soils and geological characteristics.
- Innovative projects not currently funded by other state or federal programs.
- Multi-year projects, with a minimum of two years required.

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Introduction

The NOPP provides funding to agricultural producers to perform on-farm research pertaining to commercial nitrogen application. DATCP will collaborate with the UW System to manage the program; with DATCP as administrator and UW providing technical and data support. This formal partnership fulfills the statutory collaboration requirement, with up to 20% of each grant award being designated for UW.

The NOPP has the following stipulations:

- The maximum award per agricultural producer is $50,000 over two years. Of the amount awarded to a producer, up to 20% ($10,000) will be awarded to UW for their monitoring and research assistance. Multiple agricultural producers may work together to submit a single application; each agricultural producer who is part of the application is eligible to receive up to the $50,000 maximum award.
- Successful applicants are required to submit the following:
    - A progress report for year 1 followed by a final report for year 2 using a DATCP provided template.
    - Data collected using established criteria and requirements set by the project's chosen research design, in the format requested from UW. More details of the required data collection will be available upon contracting.
- No funding commitment is final until the contract is signed by all parties. No activities are reimbursable until a signed contract is in place. Activities such as soil testing or cover crop planting in the fall of 2022 that will act as a baseline for the project may be reimbursable with appropriate explanation and documentation, including receipts for project related expenses. Such activities should be identified in the work plan and budget sections of the application. DATCP will retain 10% of the grant award until the final report has been submitted.
- An agricultural producer and the UW System institution collaborating with the agricultural producer in implementing a project under this subsection may not be held civilly liable and may not be subject to any remedial action or other administrative or enforcement action from the department or the Department of Natural Resources for any discharge of environmental pollution from the land involved in the project, if the actions were taken in good faith by the agricultural producer and the institution and conformed to the project specifications proposed to the department in the grant application. (s. 92.14(16)(f), Wis. Stats).

Definitions

Agricultural producer *is an individual farmer or a group of farmers each who operates an eligible farm, as defined in s.91.86(1), Stats.*

Applicant *is a person or persons who submits an application.*

Eligible farm *means a farm that produced at least $6,000 in gross farm revenues during the taxable year or total of at least $18,000 in gross farm revenues during the preceding three years.*

Grant recipient *is any person(s) or their authorized agent who has been awarded a grant.*

Nitrogen Optimization *is a process with the potential to use nitrogen in a manner that will sustain soil fertility and crop production.*

Nitrogen Use Efficiency (NUE) *refers to the ratio of the crop nitrogen uptake to available soil N that could include applied nitrogen fertilizer and/or manure plus residual mineral nitrogen in the soil. A high NUE indicates the amount of nitrogen remaining following a crop cycle is low.*

UW and Other Project Collaborators

On behalf of all applicants, DATCP will enter into an agreement with UW to fulfill the requirement to collaborate with the UW System institutions. This agreement will give the funding and authority to UW to provide the planning, data management and monitoring support to grant recipients, as required by the statute.

The University of Wisconsin-Madison Division of Extension will dedicate two positions to the coordination and support of this program. One position will serve as a connection point among partners, participants, and scientists to achieve NOPP goals. A second position will be dedicated to protocol development and management, data collection and stewardship, technical assistance for partners, and data analysis. In addition, these positions will collaborate with University of Wisconsin colleagues within Division of Extension, the Nutrient and Pest Management Program and across campus to develop and conduct educational programming to implement activities in service of the goals of the NOPP.

Outside of this grant agreement, if an agricultural producer would like to collaborate with a UW researcher or another entity, such as an agricultural service provider, non-profit association, or Producer-Led group, they are welcome to do so. The project budget should include any expenses not accounted for in the DATCP contract with UW.

Eligibility Requirements

The project application must be from an agricultural producer and meet **all** the following criteria:

1. The project design must be for at least two years, with priority given to longer-term projects. Awards will be for a two-year project unless otherwise specified in the contract.

2. The producer must collaborate with the UW as detailed in this RFP and allow both DATCP and UW project personnel farm access throughout the project duration.

3. The project should be innovative. This should be a new project for the agricultural producer or the agricultural producer's land. The project should include current and emerging crop management techniques that are able to be evaluated through simple protocols and contribute to data generated by the network of on-farm trials being conducted through this program.

4. The project should not currently be funded through other state or federal programs.

5. The producer agrees to voluntarily conduct commercial nitrogen optimization field studies and agrees to plan and manage on-farm research or has chosen to partner with consultants or other farmers to plan and manage the on-farm research.

6. Grant recipients agree to use the same commercial nitrogen fertilizer products and other inputs consistently throughout the study and for each N treatment and replicate. Producers may select the commercial N fertilizer for their study. Variants or exceptions to this that may be necessitated by crop type or planned crop rotation should be discussed and approved by UW collaborator.

7. Producers agree to keep all other agricultural management factors constant in the study area for the project duration, to the extent possible. Any known divergences of management factors, including those due to crop type or planned crop rotations, must be included in the project summary.

8. Producers must supply current year detailed crop plans, including planting data, crop protection, nutrient application, yield data, etc.

9. Participating producers agree to implement a zero lb N/acre test strip or treatment (as detailed in the "Nitrogen Use Efficiency: A guide to conducting your own assessment" page 3). The zero lb N/acre rate is needed to determine the soil's natural N-supplying capacity and to understand the magnitude of potentially leachable nitrogen. Any deviation for Option 3 must be approved by the cooperating UW researcher. Agricultural producers may include a stipend for anticipated yield loss within zero lb N test strips in their project budget. Producers should include evidence of the anticipated yield loss. For example, the justification may consist of the size of the plot (acres) x projected typical crop production with normal fertilizer x average commodity price x 2.

Project Study Overview & Application Guidance

During the first round of the NOPP, agricultural producers will take part in one of the three optimization field studies detailed below. Study option 1 is a nitrogen rate trial. Study option 2 is a management practice evaluation with a nitrogen rate trial. Study option 3 is a self-design option for producers who have completed previous nitrogen evaluations within their systems.

Reducing nitrogen application rates while maintaining yield is one of the first things producers can do to address optimization. Reducing N application rates can result in cost-savings and less N leaching into groundwater. The project designs follow standard research approaches, such as randomization and replication. Each study in each field is a standalone study that uses accepted statistical approaches to address the study question.

Optimization Field Study Options

Option 1: Nitrogen Rate Field Study: The goal of this study is to identify the optimum N rate on a specific field that sustains soil fertility and crop production. This is the entry point to participation in the NOPP program, providing both information relative to the field, but also collectively contributing to greater knowledge of factors that might impact N rates. Required in the suite of rates is one zero N rate (as described by the NUE guide) and the UW Maximum Return to Nitrogen (MRTN) recommended rate. The applicant will maintain other variables such as the commercial source of N, current timing, and current N placement. This is the "core" of the on-farm research approach of the NOPP.

Extension UNIVERSITY OF WISCONSIN-MADISON	Link to Google Doc – Nitrogen Rate Field Study

Option 2: Management Interactions with N Rate Study: The goal of the study is to compare how to different management practices influence the optimal N rate. Applicants choosing Option 2 will implement the basic N rate study described in Option 1, and add a single management practice of their choosing to the study design, in consultation with UW scientists. Applicants are free to study any management practice they believe will change the optimal N rate including, but not limited to:

- Tillage
- Use of cover crops
- Use of manure
- N Placement – surface vs. injection
- Managed grazing
- N application timing
- N source, N additives, or alternative products
- Irrigation impacts
- Alternative crop/forage systems not in A2809
- Grazing cover crops

The applicant must explain why they believe the management practice they propose to study will change the optimal N application rate. The applicant is also responsible for describing the method they will use to test how a management practice influences the optimal N rate. Applicant should include in their application any technology being incorporated into the study, including but not limited to precision agriculture practices, drone photography, or GIS. Producers should work with UW and review the guide linked below for assistance in establishing a research project.

Extension UNIVERSITY OF WISCONSIN-MADISON	Link to Google Doc – Management Interactions with N Rate Study Guide

Option 3: Advanced Self-Design Option: Agricultural producers who have completed a NUE project or a MRTN study, or have an established nutrient management plan, are eligible to propose a nitrogen optimization study of their own design. Eligible studies must include a detailed work plan and budget and meet the data collection requirements established by this RFP. Applicants may also choose to expand the nutrient data collection requirements of their study to include edge of field runoff, groundwater or lysimeter monitoring, or monitoring of nitrogen uptake in natural, restored, or constructed wetlands. Applicant should include in their application any technology being incorporated into the study, including but not limited to precision agriculture practices, drone photography, or GIS. **Self-design study options must be reviewed and approved by a UW scientist prior to application submission.**

Extension UNIVERSITY OF WISCONSIN-MADISON	**Contact Jerry Clark with assistance finding UW support.**

Data Collection for All Studies

The information below is **the minimum level of information required** from each applicant to collect and report. To achieve the goal of expanding knowledge of commercial nitrogen optimization, we need to collect data across all projects that can be combined and contrasted to ascertain differences as well as similarities across the state. The more detailed information we receive from applicants, the more robust the analysis and subsequent communication of our efforts can be. **A full explanation of data requirements will be included in contracts and during a late winter or early spring 2023 pre-growing season meeting with grant recipients.**

Project Cycle

1. Apply for grant (Year 1). Concurrently take soil samples and put cropping practices into place to set up for the upcoming project. Retain receipts and records to submit for reimbursement consideration. Include these activities and expenses in your work plan and budget within the application. Soil samples can also be taken in the spring after grants are awarded, but prior to planting.

2. Upon contracting, the grantee will complete background information data collection (Year 1) for each agricultural producer involved in the project. The following measurements and information will be required for every study from each study plot (collected and provided by the applicant):
   - Routine soil analysis (pH, OM, P and K) – analysis must be from DATCP certified lab.
   - Soil texture – directly measured or from Soil Survey.
   - Soil test nitrate (0-12 and 12-24 inches), collected prior to N application, and at pre-sidedress timing, for entire research area
   - Management history (a survey will be provided)
   - Previous years' management (a survey will be provided)
   - Current year management, including detailed cropping plans, planting data, crop protection, nutrient applications, yield data, etc. (a survey will be provided)
   - Soil map from NRCS Web Soil Survey, including GPS coordinates

- Economic data (e.g. unit cost of fertilizer, price per bushel, etc.) (a survey will be provided)

3. Implement project as detailed in the approved work plan (Year 1 and 2)
4. In-season data collection on all treatment plots (Year 1 and 2)
   - Crop yield
   - Crop quality (if applicable)
   - Plant tissue testing during growing season (especially for projects with vegetable or specialty crops) and cover crop sampling for total nitrogen at termination at applicable.
   - In-season soil testing (if applicable)
   - All electronic data, including N application maps and yield monitor data
   - Weather data for the growing season (daily highs, daily lows, daily rainfall) if available
5. Final data collection after harvest (Year 1 and 2)
   - Soil test nitrate (0-12 and 12-24 inches)
6. Submit progress report (Year 1) or final report (Year 2), per contract requirements.

Eligible and Ineligible Costs

Examples of Eligible Costs

- Groundwater or surface water monitoring and analysis.
- Routine soil analysis (pH, OM, P and K) and soil test nitrate collected prior to N application. Soil analysis completed prior to contracting may be eligible if the information garnered informs the project moving forward. Please address the specifics.
- Stipend payment for inclusion of zero-N strips into project, as calculated by applicant.
- Incentive payments for participation in study, not to exceed $2,500 per producer.
- Consultant or producer costs for coordinating project including expenses for contract and consulting services, and mileage. The maximum reimbursable amount for any type of labor expense is $25/hour. Mileage reimbursement is set by the state and is currently $0.51/mile. This is capped at 10% of total project costs.
- Materials and supplies directly associated with the project including inputs ONLY for the test strips/areas. Limited expenses incurred prior to contracting may be eligible for reimbursement if the activity and costs can be directly associated with the early stages of the project.
- County staff time at a rate of $25/hour is an eligible cost under this grant as long as the county staff position is NOT already funded by DATCP SWRM.
- Equipment purchases directly associated with the research project. **DATCP preapproval is required for equipment purchases over $2,500,** if not itemized on the grant budget application.
- Rental costs for equipment directly associated with research projects. **DATCP preapproval is required**, if not itemized on the grant budget application
- Other costs deemed as consistent with the purpose of this grant program. DATCP preapproval is required, if not itemized on the grant budget application.

Examples of Ineligible Costs

- Real estate purchases
- Repayment of loans or mortgages
- Rent or contract payments for time periods extending beyond the term of the grant contract
- County staff time that is already funded by DATCP SWRM grants
- Lobbying activities
- Inputs (e.g. fertilizer, seed) and management costs not associated with the research project
- Other costs deemed by DATCP as not consistent with the purposed of this grant program

Grant Administration Requirements

Funding

$1.6 million is available for grants in this funding cycle. Funding for grant reimbursement will be available once both parties sign the contract and no earlier than January 1, 2023. Contracts will be for a minimum of two years. The grant recipient may submit a written request to DATCP to extend the contract one additional year if they have funds remaining.

As noted previously, activities performed in the fall of 2022 that provide a baseline for the spring 2023 on-farm study may be eligible for reimbursement provided sufficient information pertaining to how the activities are necessary to move forward with the project is provided, and receipts retained. All these activities and expenses must be a part of the grant application.

Submitting a Proposal

Extension
UNIVERSITY OF WISCONSIN–MADISON

Jerry Clark
Interim UW NOPP Contact
715-726-7955
Jerome.clark@wisc.edu

Prior to proposal submission, all applicants should contact Jerry Clark, Chippewa County Agricultural Educator, serving as the interim UW contact for the DATCP NOPP. Jerry will connect you to other relevant UW resources like Extension Regional Crop and Soils Educators, Regional Nutrient and Pest Management Outreach Specialists, and Regional Agricultural Water Quality Outreach Specialists.

The application form can be found on the DATCP website:
https://datcp.wi.gov/Pages/CommercialNitrogenOptimizationPilotGrantProgram.aspx

- Submit applications to DATCPNOPP@wisconsin.gov.
- Applications must be submitted no later than January 31, 2023 by 11:59PM

Receiving a Grant: Expectations

Reporting Requirements

Grant recipients are required to file an **annual report** using the DATCP form, which will be made available on the DATCP NOPP webpage. Content to be included in the report will be outlined in the grant contract between the agricultural producer and DATCP. Annual reports will be due no later than March 1, 2024. Grant recipients will be required to provide quantitative information detailed in the annual report form as well as provide all required data, in the format requested, to the UW System institute. DATCP staff, in partnership with UW, will complete a program report.

Funding Distribution and Reimbursement Information

Awards will be distributed through a reimbursement process upon receipt of the reimbursement request(s), required receipts and other supporting documentation. Reimbursement may only be requested for activities completed after the signing of the grant contract, with the following exceptions:

- Soil tests completed in the fall of the prior to contracting
- Installation of cropping practices one season prior which are demonstrably necessary for the project baseline.

A detailed invoice of expenses including **all** receipts, purchases made or services provided will be required at the time funding reimbursement requests are made. Reimbursement requests must use the DATCP reimbursement request form and submit all receipts and invoices associated with their reimbursement request.

Conservation Compliance

Grant Recipients must comply with all federal, state, or local laws, ordinances, regulations or formal guidelines, including but not limited to those related to soil and water conservation requirements, licensing fees or taxes, in effect during the period of your contract. Any information received regarding violations or non-compliance may be considered when evaluating applications.

Open Records

Applications submitted along with all related contracts and reports are subject to disclosure under the Public Records law. If the grant applicant or recipient requests any information be deemed a trade secret, the document should be labeled using "trade secret" and the requested status should be noted to DATCP when the document is submitted. Such information may be kept confidential by DATCP only as authorized by law (see s. 19.36(5), Wis. Stats.).

Other Considerations

All applications submitted in response to this RFP become the property of DATCP. The agency reserves a royalty-free, nonexclusive and irrevocable license to reproduce, publish, otherwise use, and to authorize others to use materials produced under this grant agreement. Statistical summaries and general information about the overall project will be used in presenting research findings and in reports back to the grantees and other interested parties, but **no individual farm data will be released without the consent of that farm**.

DATCP also reserves the right to:

- Post content from funded applications to the DATCP website.
- Use photos, outreach materials and publications generated as part of the projects or taken by DATCP staff, project collaborators or others to promote program successes and activities.
- Reject any or all applications received based on eligibility, funding available and scoring.
- Waive or modify minor irregularities in applications received, after prior notification and agreement of applicant.
- Amend program specifications after their release, with appropriate written notice to potential applicants.
- Require a good faith effort on the part of the applicant to work with DATCP after project completion to develop or implement project results in Wisconsin.
- Withhold any payments if contract conditions are not met.

Application Tips

As you develop your grant application and work to create the strongest application possible, consider the following tips and suggestions.

- Be clear and concise. Members of the review panel may not work with you directly and will need background information on your project to fully understand the intentions of your project.
- Review the evaluation criteria listed on page 11 of this RFP to make sure you are addressing all applicable criteria in your application.
- Ensure you included all the items listed in the Application Checklist (below).
- Include a clear and realistic budget and budget explanation so reviewers can understand what each line item will be used for and how it relates to the overall project.
- Have an industry partner review your application before you submit.
- Consult with UW on all projects and obtain pre-approval from UW if choosing Option 3.
- Keep receipts for approved activities such as soil sampling that may occur prior to the contract start.

Applicant Checklist

A complete application includes:

- ☐ Application form with all required fields completed and fully signed
- ☐ Detailed budget
- ☐ Detailed two-year work plan.
- ☐ Map of project area

For grant management:

DATCP Home Commercial Nitrogen Optimization Pilot Grant Program (wi.gov)

For study project design and data collection:

UW NOPP Reference Documents

Evaluation Criteria

DATCP staff and advisors to the NOPP including UW staff will review and score submitted proposals on a competitive basis.

EVALUATION CRITERIA

Completeness of Proposal (statutory requirements)	
Proposal includes all required documentation and fulfills program goals and priorities.	
Proposal meets all program eligibility requirements.	
Project demonstrates a plan to incorporate new practices and/or testing methods to analyze nitrogen use.	
***All above requirements MUST be met in order to rank application.*	
Project plan	**20**
Two-year research project design is detailed and complete.	5
Project demonstrates innovative approach to Nitrogen optimization.	5
Project offers adequate replication	5
Project incorporates technology into design	5
Anticipated Results/Metrics Provided	**30**
Project demonstrates that it will contribute to commercial nitrogen optimization knowledge.	10
Data points are defined and correlate with UW's requirements, including a zero N strip or plot. Applicant acknowledges how project data will be shared with the UW entity and accepts responsibility for this task	10
Project takes place on a specialty crop farm.	5
Groundwater collection and analysis is a part of the project plan.	5
Organization/Commitment	**25**
Applicant is partnered with a cooperating group to complete the research project (e.g., Producer-Led group, watershed group, agronomist) or has demonstrated expert level of on-farm research.	15
Efforts by the agricultural producer/group are complementary to other local and state programs rather than duplicative.	5
Research project coordinator demonstrates acceptable knowledge and experience with on-farm research.	5
Budget	**10**
Justification exists for each budget item. Budget items are clear, specific and meet the program requirements.	5
Budget items and work plan tasks are clearly linked.	5
Total Points	**85**
Priorities	**15**
Project is related to or located in an area with known data gaps related to commercial nitrogen optimization for the commodity type, soils and/or water.	5
Length of the study is projected to be greater than 2 growing seasons.	5
Match is provided	5
Total Points	**100**