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MEMO TO: NREC Potential Project Investigators

FROM: Dale Hadden, NREC Research Committee Chair

RE: **REQUEST FOR 2017 NREC PROJECT PROPOSALS**

We are pleased to announce the solicitation of projects for the calendar year 2017 for the Illinois Nutrient Research & Education Council (NREC).

NREC's priority is funding projects that examine, test and measure the effectiveness and economic viability of farming practices that will reduce losses of nitrogen and phosphorus to water without being detrimental to agricultural production or yield. Research based projects should be designed and implemented with the goal of producing a published, peer reviewed paper on the findings. We also encourage education based projects that bring research findings and effectively promote and assure implementation of best management practices to the farmers and crop advisers in the industry.

In 2017, NREC is focusing on the following key areas of investigation that farmers have identified as needs based upon the goals outlined in the Illinois Nutrient Loss Reduction Strategy. Included in the list are questions that have arisen from results of existing projects funded by NREC. When considering new projects, the Council will give preference to funding projects in these areas:

Nitrogen and Phosphorus Management Projects

1. Continue/expand studies testing the impact of N management systems on efficiency of N use.
 - a. Expand the work on optimum N rate to include more Illinois soil types, especially in Southern Illinois.
 - b. Evaluate the efficacy of combinations of method and time of application on N efficiency. For example, combination of preplant N and late N application using conventional application methods (UAN injected preplant and Y drop method for late application) for corn.
 - c. Evaluate the efficacy of fertilizer additives that claim to enhance the efficiency of N fertilizer use. This would include but not be limited to nitrification inhibitors and urease inhibitors.
2. Determine factors impacting release and/or tie-up of organic and fertilizer nitrogen (mineralization immobilization, nitrification, denitrification, leaching, and plant uptake). This research will require the use of N¹⁵ as well as established tile system.
3. Cover Crops: Evaluate the feasibility, economics and best management practices of growing cover crops to address nitrogen and phosphorus loss as well as crop productivity. Best management practices should look at all aspects of cover crops from crop selection and seeding through crop termination. NREC is particularly interested in funding research on projects that:

- a. Identify the best combination of cover crop species to use depending on crop to follow and geographic location within the state.
 - b. Provides options for farmers to consider when selecting product and times to use to kill cover crops.
 - c. Identify factors that effect when and how much N is released from cover crop to the following year crop.
 - d. Identify what pool of inorganic N was used by cover crops.
4. Evaluate the utilization of N from DAP and/or MAP in comparison to Triple Superphosphate (TSP) for both fall and spring application.
 5. Evaluate the agronomic and environmental benefits of tillage and the placement and timing of phosphorus applications.

Tile and Conservation Systems

6. Tile Drainage: Evaluate drainage water management practices such as managed drainage (controlling flow) and the impact of tile spacing and depth on nutrient loss from a field
7. Bioreactors, Buffers and Saturated Buffers: An evaluation of practical approaches to installing these systems in areas where drainage ditches are the conduit for tile drainage. Focus should be on ways to utilize these systems to provide the most practical benefit while limiting the amount of land taken out of production.

In addition, we ask that all projects, both new and continuing, contain an economic cost/benefit analysis as to the practicality of the adoption or utilization of these practices in a farming operation. NREC will entertain requests for supplemental funding to employ other scientists to conduct the economic analysis.

While these study areas will be viewed as a priority for the funds available, NREC also welcomes other innovative proposals for consideration.

We encourage you to submit well defined proposals that will endure peer review (for research based proposals) and that will also be useful to crop producers and the agribusiness industry in their quest for higher yields, while minimizing the environmental impact of crop production practices in Illinois. In addition to detailed mid-year and year-end project reports, we also require that each project identify at year-end any critical observations learned from the study that can be shared with the industry and the general public.

NREC is currently funding 26 projects and many of these will be considered for continued funding in 2017. Please go to www.illinoisnrec.org to view a summary of these projects as well as the 2015 Annual Report.

Attached is an outline for submitting a project to NREC, a standard cover sheet and the project budget template. Please limit your proposal to ten pages total and the synopsis to one page. You can modify the budget template accordingly to best reflect your project's unique or specific budget items. Please be succinct but descriptive with your project titles and include an email and telephone number where the lead investigator can be reached.

Please submit your proposals in PDF format via email to the NREC Executive Director Julie Armstrong at julie.armstrong@illinoisnrec.org by September 30, 2016. Julie will acknowledge receipt of your proposal. The NREC Council will consider the proposals and will announce in December 2016 the projects NREC will fund in the 2017 calendar year. If you have questions, please direct them to Julie, who can also be reached at 309-212-0047.

Thank you for your interest in NREC and helping us pursue research and educational projects to advance Illinois agriculture and better protect our natural resources.