

5-21-2014

## NHAES Researchers Receive \$482,500 Grant to Study Nitrogen Loss in Soils

Lori Wright

*NH Agricultural Experiment Station*

Follow this and additional works at: <https://scholars.unh.edu/news>

---

### Recommended Citation

Wright, Lori, "NHAES Researchers Receive \$482,500 Grant to Study Nitrogen Loss in Soils" (2014). *UNH Today*. 4499.  
<https://scholars.unh.edu/news/4499>

This News Article is brought to you for free and open access by the Administrative Offices at University of New Hampshire Scholars' Repository. It has been accepted for inclusion in Media Relations by an authorized administrator of University of New Hampshire Scholars' Repository. For more information, please contact [nicole.hentz@unh.edu](mailto:nicole.hentz@unh.edu).

## Media Relations

May 21, 2014

### NHAES Researchers Receive \$482,500 Grant to Study Nitrogen Loss in Soils

DURHAM, N.H. – Researchers at the NH Agricultural Experiment Station, College of Life Sciences and Agriculture at the University of New Hampshire have received a \$482,500 USDA grant to study the loss of environmental nitrogen in agricultural systems. A critical macronutrient that all plants need, nitrogen is an important part of plant growth and reproduction.

“Agricultural systems are highly susceptible to environmental nitrogen losses. These losses cost producers money, pollute groundwater, and contribute to the atmosphere nitrous oxide, a potent greenhouse gas. A better understanding of the plant-soil interactions that regulate nitrogen availability is needed to solve this problem, even in heavily fertilized agroecosystems,” according to NHAES researcher Stuart Grandy, assistant professor of natural resources and the environment.

Other scientists on the project are NHAES researcher Kirk Broders, assistant professor of plant pathology, Erik Hobbie, research associate professor of terrestrial ecology, and NHAES researcher Richard Smith, assistant professor of agroecology, all at UNH.

According to the researchers, plants can enhance nitrogen availability by providing soil microbes with an easily metabolized carbon source. If researchers better understood how plants coordinate this microbial “priming” process to coincide with plant’s demand for nitrogen, they believe agricultural nitrogen losses could be reduced.

Specifically, the NHAES researchers will look at the interactions between plant roots and soil microbes, including a type of symbiotic fungus that lives with roots called arbuscular mycorrhizal fungi, which influence soil nitrogen availability. They then will look at how these processes can be managed to maximize crop nitrogen availability while minimizing environmental nitrogen losses.

“Our work will advance understanding of plant-microbe controls on the nitrogen cycle, enabling agricultural systems that match nitrogen inputs more closely to plant demand, thereby reducing environmental nitrogen losses and creating more efficient, productive agricultural systems,” Grandy says.

Founded in 1887, the [NH Agricultural Experiment Station](#) at the [UNH College of Life Sciences and Agriculture](#) is an elemental component of New Hampshire's land-grant university heritage and mission. We steward federal and state funding to provide unbiased and objective research concerning diverse aspects of sustainable agriculture and food systems, aquaculture, forest management, and related wildlife and natural resources. We operate and maintain the [Woodman](#) and [Kingman](#) agronomy and horticultural farms, the [Macfarlane Greenhouses](#), the [Fairchild Dairy Teaching and Research Center](#), and the [Organic Dairy Research Farm](#). Additional properties also provide forage, forests and woodlands in direct support to research, teaching, and outreach.

The [University of New Hampshire](#), founded in 1866, is a world-class public research university with the feel of a New England liberal arts college. A land, sea, and space-grant university, UNH is the state's flagship public institution, enrolling 12,300 undergraduate and 2,200 graduate students.

**VIDEO**

University of New Hampshire NHAES researcher Stuart Grandy examines how soil organisms interact with their environment to regulate ecosystem processes such as nutrient cycling, organic matter turnover, trace gas emissions, and productivity.

[https://www.youtube.com/watch?v=Wq4tv\\_ibEoU#t=31](https://www.youtube.com/watch?v=Wq4tv_ibEoU#t=31)

-30-

Media Contact: [Lori Wright](#) | 603-862-1452 | NH Agricultural Experiment Station

---

Copyright © 2018, The University of New Hampshire • Durham, NH 03824 • UNH main directory: (603) 862-1234.

[Media Relations](#) is a unit of [Communications & Public Affairs](#) which is a division of University Advancement.

[ADA Acknowledgement](#) | [Contact the Webmaster](#) | [UNH Today](#) | [UNH Social Media Index](#)