

## UNH Organic Dairy Research Farm Research Field Day

Wednesday November 4<sup>th</sup> the University of New Hampshire's NH Agricultural Experiment Station held a Research Field Day for the public at the UNH Organic Dairy Farm. Researchers at UNH shared their ongoing studies that take place right at the UNH Organic Dairy Research Farm in Lee, NH. All of the studies are experiment-station funded projects that cover a variety of topics. The day ran from 9 am to 12 pm and was organized so that you could come and go as desired, visiting any projects that may have been of particular interest to you.

The following studies were featured and presented at the Field Day:

- **The Role of CNN1 in Building Blood Vessel Network in the Ovarian Follicle** –Dr. Paul Tsang and Joey Miseirvitch
- **UNH Organic Dairy Farm Agroecosystem Study: A Closed System, Energy Independent Organic Dairy Farm for Northeastern United States** –Dr. John Aber, Dr. Ted Howard, Matt Smith, and Allison Leach
- **Preliminary Results of Using Annual Forage Crops as Alternative Sources of Dairy Forage** –Dr. Andre Brito
- **Controls of Nitrogen Delivery from Agricultural Watersheds to Coastal Zones** –Dr. Will Wollheim, Chris Cook, and Allison Price
- **Understanding Water Quality Impacts of Farm Practices in Groundwater and Stream Water** – Dr. William McDowell, Jody Potter, Richard Brereton, and Michelle Daley Shattuck
- **Silvopasture as a Management System for Forest Products and Livestock** –Dr. Rich Smith, Dr. Heidi Asbjornsen, and Dr. Alix Contosta
- **Climate, Carbon and Land Use Interactions in a Mixed Agricultural, Residential and Forested Landscape** –Dr. Scott Ollinger, Dr. Andy Ouimete, and Dr. Alix Contosta
- **Diversity Assessment of Native Bees** –Dr. Sandra Rehan

To highlight a few of the studies, the **Silvopasture as a Management System for Forest Products and Livestock** experiment is a fairly new study that received funding for the next three years. Its purpose is to explore the option of agriculture intensification in New Hampshire by looking into different options for creating pastureland. One option is to clear-cut trees into the desired pasture size and gradually develop it into a field for vegetable or animal production. The alternative is to create a novel management system—silvopasture, which is the management of trees and livestock. This system is growing in popularity in this area, but little research has been conducted to understand the effects it has on important ecosystem services. The hope for this study is to be able to better understand the implications of silvopasture as a management system and be able to suggest to farms the best way to use this system when looking into agriculture expansion.

### **Diversity Assessment of Native Bees**

Another new study that is being conducted is the Diversity Assessment of Native Bees. With the decline of many bee species in agricultural landscapes across the United States it is surprising to know that long-term data on bee populations is scarce. Dr. Rehan and her lab is conducting the first diversity assessment of native bees in the region and is also studying the implications of different farm areas (conventional, organic, and naturalized) on pollinator diversity and sustainability. The results of this study will hopefully raise awareness about pollinator health and better interpret how humans are impacting pollinators and in turn our food supply and local ecosystems.

If you are interested in helping the pollinator movement you can participate in the Bumble Bee Watch which is a collaborative effort to track and conserve North America's bumble bees. You can register at [www.BumbleBeeWatch.org](http://www.BumbleBeeWatch.org) to upload photos of bumble bees to start a virtual bumble bee collection. You can also identify the bumble bees in your photos and have your identification verified by experts, help determine the status and conservation needs of bumble bee, learn about bumble bees, their ecology, and ongoing conservation efforts, and connect with other citizen scientists.

### **Understanding Water Quality Impacts of Farm Practices in Groundwater and Stream Water**

Finally, as the UNH Organic Dairy Farm works towards developing practices that minimize nutrient runoff this study is observing what impacts it will have by sampling numerous wells around the farm. The study is using real-time water quality sensors to help them monitor the changes in nitrogen concentrations. So far from 2008 to 2013 there has been a decline in nitrogen concentrations and they expect to continue to see a decrease in concentrations in the future. The researchers will continue to monitor the creek near the UNH Organic Dairy Farm to see if the nitrogen concentrations decline as a result of improved farm practices.