



## Northern New York Agricultural Development Program News

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### Double Cropping Research Helps Northern NY Dairy Farmers

Northern New York – Research conducted on Northern New York farms by Cornell University researchers with funding from the farmer-driven Northern New York Agricultural Development Program (NNYADP) is helping farmers enhance their production of forage crops for their dairy cows.

Eight farms in Northern New York participated in on-farm double cropping trials from 2011 to 2013. The research specifically refines nitrogen fertilizer management guidelines for fields that will be used for double cropping - the practice of planting two different crops on the same field in which the second crop is planted after the first has been harvested.

By using the same land to plant two crops that can be fed to dairy cows, farmers can offset previous-year dairy cow forage inventory losses due to drought, excess water, or other causes.

Growing winter cereal crops, such as cereal rye, triticale or wheat in a double-cropping system can also help with on-farm manure use, reduction of nutrient loss to the environment, and increased production per acre.

The complete report of the NNYADP double-cropping nitrogen management trials titled [Winter Forage Small Grains to Boost Feed Supply: Not a Cover Crop Anymore](#) is now posted at [www.nnyagdev.org](http://www.nnyagdev.org).

Profiles on growing 70 acres of triticale as [a double crop with corn at Brandy View Farm in Madrid, NY](#), and a [cereal rye trial at BCS Dairy in Peru, NY](#), are also posted on the NNYADP website.

The Northern New York Agricultural Development Program is a small grants research and technical assistance program helping farmers in Clinton, Essex, Franklin, Jefferson, Lewis and St. Lawrence counties. The NNYADP receives funding through the New York State Legislature.

### MORE INFORMATION

'Our research platform addresses a primary question identified by Northern New York (NNY) farmers, that is, how to manage nitrogen application for double-cropping, particularly at dormancy break in the spring,' says project leader and Cornell Nutrition Management Spear Program Director Dr. Quirine M. Ketterings.

The objective of the ongoing NNYADP-funded research is to calibrate the most precise optimal nitrogen application rate to achieve high-yield, high-quality crops in a double-cropping system. More precise N application may reduce production costs as well as the environmental loss of nitrogen not taken up by the crops.

Project results to-date include data from seven trials conducted on farms in Northern NY and more than two dozen other farms statewide. In 2013, forage yield of double crops averaged 2 tons/acre statewide and 1.8 tons/acre in NNY.

Soil fertility and the need for nitrogen varied widely by site in the NNY trials, e.g, three sites of the seven NNY sites showed no yield response to additional applied N while three others needed 75 to 90 lbs. N/acre to reach optimum yield.

This research continues in NNY and statewide in 2014 to determine how planting date, manure application history, soil type and other factors might impact the differences in yield, in crude protein content of the crops, and optimum N rates across the different sites.

An additional NNYADP-funded field trial compared cereal rye, oats and radishes planted as cover crops at Thunder Lane Dairy in Lewis County.

The results of the trials at Thunder Lane Dairy indicated that radishes had the greatest root, shoot, and total biomass accumulation of the three species, but nitrogen accumulation was limited to 28 lbs. N/acre by radishes vs. 17 lbs/acre for cereal rye, and 11 lbs. N/acre for oats. However, because radishes and oats typically winterkill in Northern New York and will not accumulate more N into the spring season, cereal rye becomes the more feasible choice. Cereal rye typically overwinters and accumulates additional biomass in the spring, typically averaging 1.5 times the total N accumulated in the fall, based on field assessment over the past several years.

Northern New York producers and NNYADP committee members are now interested in answering the questions: What are the costs and benefits associated with incorporating double crops into cropping systems, and what yield levels are needed to ensure that the adoption of double crops will be a profitable change for farms in the northern region of New York State.

In addition to the regional farmers, NNY double-cropping project collaborators include the Cornell PRO-Dairy Program, Cornell Cooperative Extension, the Lowville Farmers Co-op, and independent crop consultants.