



NNYADP Project Success Story

Practical Research & Results for
NY Farms, Economy & Communities
*in Clinton, Essex, Franklin,
Jefferson, Lewis & St. Lawrence Counties*

NNY Growers Use Harvest Season Tests as Indicator for 2013 Corn Crop

This October 3, 2012 Empire State Farmer article is reprinted for educational-use only.

As farmers approach corn harvest time, they are already thinking about next year's crop. **Northern New York Agricultural Development Program-funded research conducted on regional farms** by the Cornell Nutrient Management Spear Program and its Cornell Cooperative Extension, W.H. Miner Agricultural Research Institute, and farmer collaborators **has developed recommendations for using two testing tools to help farms optimize nutrient use over time with their corn crops.** Those tools are the late-season Corn Stalk Nitrate Test (CSNT) and the Illinois Soil Nitrogen Test (ISNT).



Photo: Brian P. Whattam

Dan Reed (left) and his son Andrew with a beautiful crop of NNY-grown corn at Reed Haven Farms, Adams Center, NY.

Research was conducted in Northern New York as part of a 2008-2011 statewide project to answer the question can on-farm manure resources replace the need for purchased starter nitrogen fertilizer for corn production. The results evaluate how best to apply the CSNT and ISNT to better use manure resources, conserve soil value, reduce costs, and enhance agricultural stewardship.

"I often have questions from farmers on how to better utilize manure and reduce fertilizer costs. With corn as a major forage crop on dairy farms, any work to enhance the usefulness of manure on farms is a big benefit to the farm," Cornell Cooperative Extension of Lewis County Field Crops Educator Joe Lawrence says.

Certified Crop Advisor Peg Cook routinely encourages the farmers she advises to implement NNYADP research results into their cropping and dairying practices.

"One of the farmers who has applied the results of the manure value studies has said that were it not for the recommendations based on that research he would not be in business. He has not purchased fertilizer in four years and that adds up to thousands of dollars of savings," Cook says.

St. Lawrence County dairy farmer Mary Kelly agrees, "We use soil testing on every field. What we learn from that can add up to significant savings."

Learn more about the Northern New York Agricultural Development Program and its' research, outreach and technical assistance projects online at www.nnyagdev.org



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NNY farmers are using research-built testing tools to save thousands of dollars and enhance environmental stewardship

How the CSNT and ISNT Tests Work

The late-season CSNT evaluates the success of nitrogen (N) application decisions over the course of that growing season. The ISNT is a soil analysis that estimates if there is enough potentially mineralizable nitrogen in the soil to feed a new corn crop. While the soil can be sampled for ISNT-N at any time of year except within five weeks of manure application, the recommendation is to test right after corn harvest for results to guide the following year's decision-making.

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— St. Lawrence County dairy farmer Mary Kelly

decide whether the farms' manure supply can replace, or eliminate, the need for the purchase of starter nitrogen fertilizer for 2013 corn crops.

"During seasons with serious drought conditions, plants stressed by lack of water are not able to take up nitrogen to the full potential of a crop grown under more optimal conditions. If it rains later in the season, this nitrogen can still accumulate in the lower portion of the corn stalk resulting in high CSNT values without causing a yield increase in the crop," says Lawrence.

Cornell Cooperative Extension of Jefferson County Field Crops Educator Mike Hunter cautions, "Growers need to be careful with CSNT in a dry year as results can be skewed due to the accumulation of nitrogen in the corn stalk in abnormally dry years. The CSNT is meant to be used over multiple years on the same field to fine tune nitrogen management, not as a one-time indicator."

Agronomist and Soil Scientist Eric Young at W.H. Miner Agricultural Research Institute, Chazy, NY, praises the project identified by the farmer-driven NNYADP for research, saying, **"The starter N project offers convincing evidence that we can substantially improve nitrogen use efficiency on dairy farms by proper soil testing and manure management."**

Links to Cornell Agronomy Fact Sheets on the CSNT and ISNT-N, how to fine tune N use on corn crops, and "Can Manure Replace the Need for Starter N?" are posted in the Field Crops: Manure Management section of the NNYADP website at www.nnyagdev.org.

The Northern New York Agricultural Development Program is a farmer-driven small grants program that funds critical on-farm research with real-world results to ensure the long-term viability of Northern New York's agricultural industry in Clinton, Essex, Franklin, Jefferson, Lewis and St. Lawrence counties.

The Northern New York agricultural industry contributes nearly \$600 million in farm product value to the regional economy. Approximately 4,200 farms support a regional payroll of \$52.9 million in jobs.

Learn more in the Field Crops section at www.nnyagdev.org.

Harvesting corn research trials at Miner Institute, Chazy, NY.



Photo: Miner Institute