Northern New York
Agricultural Development Program

FACT SHEET

#1 in a series on Phosphorus

Cornell University researchers have conducted a variety of studies to determine how P interacts with farm soils and with nearby waters. The results of these studies are detailed in a series of Northern New York Agricultural Development Program Fact Sheets that are available from your local Cornell Cooperative Extension office.

The titles available are:

- **Why is Phosphorus an Issue for New York Farms?**
- **Limiting Phosphorus Use for Corn Growing in NNY Without Sacrificing Yield**
- **Developing a P Index for NNY Soils**
- **The Impact of Starter P on Corn Silage**
- **Trends in Soil P Status**
- **P Runoff: Rainfall Simulation Experiment Results**

Why is Phosphorus an Issue for New York Farms?

Principal Investigators: Dr. Quirine Ketterings, Professor of Crop & Soil Science, Cornell University; Karl Czymmek, Senior Extension Associate, ProDairy, Cornell University; Jason Kahabka, Extension Associate, Crop & Soil Sciences , Cornell University

Phosphorus (P) is an essential element for the growth and development of both plants and animals. Farmers have long known this, and have applied phosphorus fertilizer to their lands to increase crop yields and they have added it to rations to make sure that livestock have an adequate supply to rations to make sure that livestock have an adequate supply of phosphorus in their diet. Animals are unable to use all the nutrients in their feed and excess nutrients along with other unusable material pass through their digestive systems and end up in manure.

Until recently conventional wisdom held that agricultural lands could absorb a seemingly infinite amount of phosphorus. Today we know that soils with very high levels of phosphorus are more likely to lose some of this fertility to neighboring surface waters through runoff and leaching.

The addition of phosphorus into lakes, ponds and streams is a form of nutrient pollution that can cause a population explosion of algae. The result is called "eutrophication". When phosphorus is added to surface water, it can cause algae and aquatic plants to grow very quickly, overwhelming aquatic ecosystems. As these plants die and decompose they consume oxygen from the water and cause fish kills, foul smelling water and floating mats of dead plant matter.

There are many causes of eutrophication besides agriculture but farmers, regulators and community members are increasingly taking steps to control farmland runoff and keep nutrients in the fields where these steps are needed.

Phosphorus Research Sponsors

Several of the phosphorus use studies in New York State have been funded by the Northern New York Agricultural Development Program. Federal and state grants have also supported various projects. Please see individual project fact sheets for specific sponsors.

Principal Investigators

Dr. Quirine Ketterings, Assistant Professor, Nutrient Management Spear Program, Department of Crop and Soil Sciences, Cornell University; Karl Cyzmmek, Senior Extension Associate, Pro-Dairy, Department of Animal Science, Cornell University; and Larry Geohring, Senior Extension Associate, Department of Biological and Environmental Engineering, Cornell University.

Project Coordinators: Jason Kahabka, Extension Associate, and and Sheryl Swink, Program Support Specialist, Nutrient Management Spear Program, Department of Crop and Soil Sciences, Cornell University.

Participating Farmers

Many farmers throughout the Northern New York region have participated in on-farm trials. Others have hosted field days and demonstrations. Without their support, this research would not be possible and would not be available to help farmers throughout the region.

Participating CCE Educators

Cornell Cooperative Extension educators from all six Northern New York Counties have provided support and expertise to phosphorus research projects throughout the region. Their support has been vital to the success of these projects.

For more information on the P project, contact: your local Cornell Cooperative Extension office; Dr. Quirine Ketterings, Nutrient Management Spear Program, Cornell University, qmk2@cornell.edu, 607-255-3061, http://nmsp.css.cornell.edu/publications/pindex.asp; or Karl Czymmek, kjc12@cornell.edu, 607-255-4890.

The Northern New York Agricultural Development Program selects and prioritizes research the results of which can be practically applied to farms in the six-county region of northern NY: Jefferson, Lewis, St. Lawrence, Franklin, Clinton and Essex Counties.

To learn more about the Northern New York Agricultural Development Program, contact Co-Chairs Jon Greenwood, 315-386-3231, or Joe Giroux, 518-563-7523; or R. David Smith, Cornell University, 607-255-7286. ◆

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Northern New York
Agricultural Development
Program
162 Morrison Hall
Cornell University
Ithaca, NY 14853
607-255-7286
www.nny.org