

Bay Farms

Finding Solutions to Nutrient Challenges

Summer/Fall 2006

Project Update

The *Lancaster Farms* project has grown steadily, from 22 farmers in 2004 to 55 farmers in 2006, working with interested farmers to improve nitrogen use efficiency by using the results and recommendations from the Presidedress Soil Nitrate Test (PSNT) and the Cornstalk Nitrate Test (CSNT). Beginning in 2005, a key component of the project has been a special EQIP project for nutrient use efficiency offered by PA NRCS in Lancaster County. The project involves both Plain Sect and English farmers.

The project is set to expand significantly over the next 3 years, increasing the number of farmers in Lancaster and has expanded into Chester County, PA and Cecil County, MD under the names *Chester Farms* and *Cecil Farms*. Collectively, the three projects are called the Bay Farms project. By 2009, project partners hope to grow this innovative collaboration for nutrient use efficiency from the current 55 farmers managing 12,000 acres to about 300 farms managing more than 40,000 acres.

The project is also expanding its toolbox of economically viable nutrient use efficiency tools. In 2006, partners added the chlorophyll meter test. In 2007, partners will begin piloting an innovative, GPS-based variable rate technology from the Mosaic Corporation that uses satellite imagery to develop maps detailing the variable nutrient needs of different parts of individual fields, which farmers can then use to apply nutrients more efficiently and cost effectively. The project is also helping farmers adopt other nutrient use efficiency and conservation tools, such as cover cropping, no-till, and other beneficial practices.

For more information about the expansion of the project, please contact Suzy Friedman, Center for Conservation Incentives, at 802-878-7530 or sfriedman@environmentaldefense.org.

EQIP 2007 – Enrollment to Open Soon

In October, NRCS in Lancaster and Chester Counties will begin officially accepting applications from farmers for enrollment in the Nutrient Use Efficiency Special EQIP Project for 2007. Enrollment for EQIP in Cecil County, MD will open in November. In all three counties, farmers enrolled in EQIP can receive incentive payments for implementing nutrient use efficiency tools, including the PSNT, chlorophyll meter, CSNT, and other beneficial practices offered by NRCS.

Farmers not interested in enrolling in EQIP can also participate in the project, which will provide, at no cost to the farmer, results and recommendations for the PSNT or chlorophyll meter test in the spring and the CSNT in the fall. Participation in this private side of the project will be on a first-come first-serve basis, as in past years. There is no incentive payment offered for farmers who participate outside of EQIP.

Farmers interested in enrolling in the project in EQIP 2007 should contact their district NRCS office: Lancaster (Brad Michael – (717) 299-1563 x3), Chester (Sam High -- (610) 696-0398 x 104), or Cecil (Lindsay Tulloch -- (410) 398-4411). For participating in the project outside of EQIP, please contact Chris Sigmund of TeamAg Inc (PA farmers) at (717) 721-6795 or Charlie Hayes of the Cecil Soil Conservation District (MD farmers) at (410) 398-4411 ext.3.

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So What Have We Done So Far?

Results for Year 1 – 2004

Twenty-two farms enrolled 3,708 acres in the program in 2004. There were 400 fields tested using the PSNT and 421 fields tested using the CSNT. Field-by-field manure and fertilizer applications and previous crop histories were collected and summarized for each farmer. A winter meeting was held with one group of dairy farmers.

Results for Year 2 – 2005

Twenty-seven farms enrolled 8,600 acres in the program in 2005. There were 694 fields tested using the PSNT and 685 fields tested using the CSNT. Winter meetings were held with four groups of farmers. The groups were organized by the type of livestock and size of farm to enhance discussion and build trust in the group. The four groups were: large dairy, small dairy, hog and poultry. Farmers with two years of data received field summaries based on similar management history that showed the PSNT and CSNT results for the two years.

Overall Results

The farmers who have participated for two years are slowly gaining confidence in the new nitrogen management tools. Some farmers have changed their manure and nitrogen management. The farmers who participated for one year are in the beginning stages of evaluation of the new information they received about the nitrogen status of their fields. This program will result in greater implementation of Nutrient Management Plans on participating farms.

The results from the CSNT show interesting results for two practices. Fields that receive recommended amounts of separated liquid manure by overhead irrigation have large and

consistent excesses of nitrogen. One possible explanation is that the amount of ammonia volatilizing during irrigation is much less than predicted. The other interesting result is that fields in a rye silage-corn silage rotation consistently show low or deficient nitrogen status based on the CSNT results. Discussion of these types of results across numerous farms builds confidence in the tests and the Lancaster Farms' program.

For more information on the results of the project thus far, please contact the Lancaster Farms technical leaders Tom Morris (860- 486-0637) or Chris Sigmund (717-721-6795).

P-Based Planning and Nitrogen Testing – How Are They Linked?

A question often put to the leaders of the Lancaster Farms project is what value there is to spring and fall nitrate testing if a farm is limited based on high soil phosphorous levels. The simple answer is very valuable, especially given the high price for nitrogen fertilizer.

More and more often, farmers find they must balance their manure or litter applications based not on nitrogen, but on phosphorous, as required by the shift to P-based planning in Maryland, Pennsylvania and many other states. Soil test levels for phosphorous will determine application rates for manure and litter. On many farms with elevated soil P levels, producers will not be able to apply as much manure as before. This reduced manure or litter application will have two key impacts

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P-Based Planning and Nitrogen Testing – How Are They Linked?

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(besides needing to find another use for that excess manure and litter) – first, it will increase the farmer's uncertainty about the nitrogen supply to the crop, and second, it often will mean the farmer must purchase commercial nitrogen to meet crop needs. The PSNT or chlorophyll meter and the CSNT can both reduce the uncertainty about how much nitrogen fertilizer to apply and enable farmers to use commercial nitrogen as efficiently as possible. The economic bottom line is that using a PSNT or chlorophyll meter, plus the CSNT in the fall, will benefit the farmer – it will verify that the crop is getting enough nitrogen and enable farmers to avoid unnecessary purchases and applications of commercial nitrogen.

For more information on the links between P-based planning and nutrient use efficiency tools like PSNT, chlorophyll meter, and CSNT, please contact the Lancaster Farms technical leaders Tom Morris (860- 486-0637) or Chris Sigmund (717-721-6795).

Breakfast Ag Discussion to Feature Lancaster Farms

On October 12, 2006 at 7:30am, the Lancaster Farms project will be the topic of discussion at the Ag Issues Forum, a monthly breakfast discussion of key agricultural topics and issues in Pennsylvania. All Lancaster Farms farmer partners are invited and encouraged to attend at no cost. Other farmers interested in participating in 2007 are also invited and encouraged to attend at no cost.

For more information, please contact Mike Brubaker at (717) 627-0440.

Excess Manure – What to Do?

A key goal of the Lancaster Farms project – and now the Bay Farms project -- is to find and advance economically viable options for excess manure and litter. Project partners are excited to begin making real headway on this challenge this fall through collaboration with Terra Gro, a composting facility in Peach Bottom, PA. In partnership with the Lancaster Farms project, Terra Gro will be expanding their capacity to take in manure and litter from participating farms by 50% this winter by adding an additional hoop barn for composting. Interested farmers, on a first come first serve basis, can send their excess manure to Terra Gro. Terra Gro will then compost the manure and litter and sell the finished product to the turf industry and park managers, as they do currently. In upcoming years, the Lancaster Farms project will collaborate with Terra Gro to further expand their capacity to take in manure and litter by expanding to a second site in Salisbury, PA. These sites will help more and more farmers find an economically viable use for manure or litter they can no longer apply to fields they manage. Farmers will not be charged a tipping fee. They can either transport their excess manure to the Terra Gro site themselves or have Terra Gro come pick up the excess manure or litter for a reasonable fee.

For more information about the compost effort, please contact Chris Sigmund of TeamAg at (717) 721-6795.

Commitment to Data Confidentiality – Looking At Next Steps

Farmer data confidentiality has always been of utmost importance to the Lancaster Farms project and its partners, and continues to be as the project expands into new counties. The data collected through this project belongs to the farmer to be used to benefit that farmer. Careful use of aggregate data (revealing no names of individual farmers or any individual farm data) would be of enormous benefit to other farmers and stakeholders interested in the progress being made through this project. The primary use of the aggregate data would be for outreach and education in the farm community as a way to document to other farmers the value of nutrient use efficiency tools and the information these tests provide. Chris Sigmund of TeamAg Inc and other consultants participating in the project will raise this issue with farmers this fall and winter, and we will use or not use the aggregate data based on this feedback to the project. If you have questions or concerns regarding potential future use of aggregate data, please contact Chris Sigmund of TeamAg at 717-721-6795.

Winter Meetings – The Dialog Continues

The *Lancaster Farms* farmer winter meetings for the 2006 crop year are tentatively set for January 29-31, 2007. Informational meetings for those participating or interested in participating in the *Cecil Farms* project will be held in mid January for the *Chester Farms* in early to mid March. Chris Sigmund of TeamAg Inc and other consultants working with the project will be contacting participating Lancaster county farmers in the upcoming months with the specific dates and times for your discussion group meeting. These meetings have proven very productive and engaging every year, giving participating farmers a valuable opportunity to come together in small groups to discuss the project, aggregate results (and if the farmer so chooses, his individual farm data), and what this all means for farm management. For more information, or if you have topics to recommend for the winter meetings, please contact Chris Sigmund of TeamAg at 717-721-6795.

Partners and local advisors are what make this project successful

These include: the Center for Conservation Incentives at Environmental Defense; USDA Natural Resources Conservation Service in PA, MD, and CT; Brubaker Consulting; PennState, University of Maryland, and University of Connecticut Cooperative Extension; TeamAg Inc.; Lancaster, Chester, and Cecil County Conservation Districts; Lancaster Farmland Trust; Little Britain Ag Supply; AET Consulting; and others. The farmers themselves – all kinds and all sizes – are the core of the project.