

## Natural Resources

# PSNT saves money, aids environment

By NATALIE RECTOR



PEOPLE ask me how I became involved in studying manure. It all began with pre-sidedress nitrate soil testing. After the 1988 drought, farmers began asking Extension agents if the nitrogen that is applied to corn wasn't used due to the poor yields, would it be available for the '89 crop?

## Key Points

- Pre-sidedress nitrate soil testing measures value in manure applications.
- Nitrogen management consistently saves producers money.
- Manure applications build phosphorus and generate nitrogen credits.

The Crops and Soils Department at Michigan State University began working with Extension agents to see

how PSNT might perform in the state. It quickly became obvious that manured soils were worth looking into more closely.

Some livestock producers began to take notice. While taking the PSNT, they also decided to have soil tested for general nutrient status. A consistent pattern emerged. Manure applications were building phosphorus and generating considerable nitrogen credits.

With fertilizer costs at an all-time

high, hauling manure has become one of the highest profile jobs in the neighborhood. If you haven't used PSNT before, this would be a good year to start.

## A moneymaker

The practices that retain and recycle manure nitrogen are the same practices that keep the ammonium from volatilizing and manure from running off with surface erosion.

Injecting or incorporating manure within a day retains up to 90% of the ammonium nitrogen in manure, decreases odors, and keeps manure from running off the field.

Some producers don't believe that spring-applied manure will be available by the time corn and other crops need it. The ammonium form or nitrogen in the manure is readily available to plants. As soon as the soil warms above 50 degrees F, the ammonium form converts to the nitrate form, which also is available to plants. This nitrate form is what the PSNT measures.

Based on today's fertilizer prices, manure applications may be supplying up to \$60 per acre of readily available nitrogen to plants, plus the value of the phosphorus and potassium.

## Tips for taking PSNT

**Timing:** Take the soil test about five to 14 days ahead of sidedress. Samples taken too early will not be as accurate because the soil is releasing nitrate continually in the spring.

**Priority fields to test:** Test fields that will be planted with corn or other high-nitrogen demand crops. Test fields that have been manured this year or last year, and fields that had alfalfa, clover or beans in 2004.

**Cautions:** PSNT will not be accurate in measuring soil nitrate if fertilizer nitrogen has already been applied, such as plowed down and large amounts (less than 40 pounds) broadcast at planting or with preemergence herbicides. Nitrogen placed in a starter band can be avoided during sampling whereas broadcast applications cannot.

**Taking the sample:** Soil samples should represent no more than 20 acres. The sampled area should be consistent for past crop, soil types and manure applications. Probe the soil 12 inches deep if possible, taking 15 to 20 cores per field. Indicate the sampling depth on the lab's soil forms.

**Handling samples:** Air-dry samples as soon as they are taken. Do not put damp samples in plastic bags. If the samples cannot be dried right away, keep them cool (less than 45 degrees F).

**Delivering samples to the lab:** Deliver samples to a soil-testing lab or express-mail air-dried soil.

**Using the MSU lab:** Cost for nitrate soil samples is \$9 per sample, plus \$1 if the results are faxed rather than mailed, which is encouraged. The fee must accompany the samples. The lab is open 8 a.m. to 5 p.m., Monday through Friday. For sample bags and forms, contact your local MSU Extension office.

Visit [www.rootzone.msu.edu](http://www.rootzone.msu.edu) for more information on manure nutrient recycling.

Rector is a MSU Extension nutrient/manure management agent.

## FFA Brings "LifeKnowledge" to Classrooms Across America



With LifeKnowledge, leadership lessons can be seamlessly integrated into the technical classroom. With this strategy, all students can develop as leaders.

Students inevitably pick up a little "life knowledge" as they pursue an education. The FFA recently introduced a program to ensure that all agricultural students attain key life skills such as leadership, personal growth and career success. These components are the cornerstone of "LifeKnowledge," created by the FFA and supported by Monsanto and other founding sponsors for providing agricultural students with "real lessons for real life."

Through its \$500,000 gift to The LifeKnowledge Center for Agricultural Education, Monsanto became one of five corporate Founding Partners, joining the ranks of John Deere, The National Pork Board, Chevrolet and Cargill.

"The LifeKnowledge Center takes a unique approach to leadership education," says Dennis Sargent, FFA Foundation division director. "This program was designed to bring a new level of skill and leadership to the youth who will someday join our workforce and lead the agricultural industry for decades to come. We're dedicated to helping every student, every day, in every classroom learn leadership."

The LifeKnowledge program will touch the lives of more than eight million agricultural students over the next decade and will also strive to create professional growth opportunities for teachers. Already, 11,000 teachers have been trained on how to integrate LifeKnowledge lessons into their curriculum.

Although it has been less than three years since its inception, LifeKnowledge has already begun to enhance the academic lives of agricultural students across the country.

For more than 50 years, Monsanto has been active in backing FFA programs to benefit American youth in agriculture. A sampling of such programs includes the National Agricultural Sales Career Development Event, National Dairy Production Placement Proficiency Award, AgriScience Student Recognition Program, Commitment to Agriculture Scholarships and DEKALB Agricultural Accomplishment Awards.

## At a Glance

- Monsanto is one of five corporate Founding Partners of the FFA's LifeKnowledge program.
- LifeKnowledge is designed to bring leadership, personal growth and career education to agriculture students around the country.
- The program is expected to impact more than eight million students over the next decade.

"We're receiving positive feedback from students and teachers alike," says Andy Armbruster, FFA Education Specialist. "Teachers are seamlessly integrating LifeKnowledge into their lesson plans. They may be teaching a class on agriculture, but an emphasis on leadership or diversity may be included."

## Positive First Year Feedback

More than 800,000 students are expected to participate on an annual basis, and feedback has been positive so far. "The result has been students that I feel are more responsible, with an understanding that they are accountable for their actions and for the success they can achieve," says Leah Schwachtgen-Clarkfield, a Minnesota teacher who has incorporated LifeKnowledge into her classroom. To date, 89 percent of teachers polled say they prefer teaching with the LifeKnowledge curriculum, and 91 percent say it improves their students' academic performance.

In addition to developing and strengthening life skills and building confidence, the program is structured to make youth feel involved in and connected to their communities.

"Monsanto is proud to be involved in this program, which will combine academics and LifeKnowledge skills to prepare agricultural students to solve problems, think critically and realize unique classroom experiences," says Glenn Stith, Vice President, U.S. Branded Business, Sales & Marketing. "As a company focused solely on agriculture, Monsanto has a personal interest in supporting the education of our future agricultural leaders." Stith has a long involvement with the FFA, from serving as state officer in his youth to serving as Chair on its national sponsors board for 2007.



Photos courtesy of FFA.



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