



Starter P Project a Win-Win

Jeff Miller, Cornell Cooperative Extension agronomist in Oneida County, has collaborated with Cornell University researchers on field trials for 17 years. So to say he is an “old hand” at on-farm research is no stretch. But what he and area farmers learn from local research trials, such as the New York Starter Phosphorus (P) Project, isn’t “old hat.”

This project was initiated to evaluate and demonstrate the value of P starter application on soils testing high or very high in soil P. Cornell University’s Nutrient Management Spear Program (NMSP) faculty and staff, PRO-DAIRY staff and Cornell Cooperative Extension educators collaborated to conduct 65 on-farm and 13 research station trials between 2001 and 2003.

Miller and Mike Dennis (CCE Resource Educator) were motivated to participate in the Starter P Project because it would generate a robust set of data from farms across NY State that would provide good information to area farmers.

“The fact that information is coming from farms within our own region lends a lot of credibility to the results,” Miller says. “If anything, it bolstered people’s confidence in the recommendations and also in using Cornell soil tests.”



Jeff Miller (second from right), Oneida County Cornell Cooperative Extension Educator, discusses phosphorus fertilizer use with producers and consultants.

Miller and Dennis involved six Oneida County producers in the Starter P Project. It “strengthened the connection (with producers) because we’re getting onto their farms and helping to answer some questions,” he says.

Rob Williams, one of the cooperating farmers, grows 240 acres of corn and alfalfa, plus 10 acres of soybeans, on his Waterville dairy where he milks between 60 and 70 cows. He soil tests fields when they’re to be seeded down in a five-year rotation. Results show medium to high P.

Williams has been working down the nitrogen (N) and P levels in his fertilizer applications for years, he told farmers at one of five field meetings Miller organized as part of the project. “I already had P levels as low as I could,” Williams says.

Working with Miller, Williams had been applying 75 lbs/acre of a urea MAP blend in a band at corn planting. All told, he applies 3.5 tons of fertilizer on 100 acres of corn.

Williams, a seed corn salesman, does side-by-side corn trials and hasn’t seen his yields suffer from lower rates of N and P, he says. This year one field yielded 198 bushels, compared to its usual 148 bushels. Well-timed rains and high growing-degree-days contributed to high yields.

Local benefit

Williams is not alone in changing practices. Miller collected research data and anecdotal evidence showing that Oneida County producers benefited from the Starter P project. Most of the participating producers now test their soils and herds’ manures. They base their phosphorus fertilizer applications on test results, Miller says.

Williams, for example, didn’t apply any P last year, and also the other producers reduced the amount of P starter on high and very high P cornfields to 20 pounds of P₂O₅ or less. None saw any negative impact on silage yield or quality. Miller also saw other producers change their fertilizer blends.

The field meetings where producers discussed yields and fertilizer rates and blends helped create a “networking effect” for farmers to connect with other farmers, Miller says.

At a large-herd discussion group held in the county, producers who hadn’t participated in the Starter P Project asked a participating producer about his results from lowering starter P. “Finding that there was no response to additional P each year the trials were conducted on his farm lent more

credibility to the recommendations that the other farmers were getting through their CAFO plan," Miller says. "And I think it just gave them more confidence that they could back off on P fertilizer."

Agribusiness takes notice

The Starter P Project helped increase the awareness of farm consultants and fertilizer dealers about opportunities to create new blends, rather than rely on the traditional "triple" blends, 19-19-19, 15-15-15, etc. "I think our local consultants and fertilizer dealers are working on this issue with farmers and trying to fine-tune the P rates for them," Miller says.

At Cropware workshops held in the county, three fertilizer dealers saw firsthand the results of the Starter P Project and learned of opportunities to offer different fertilizer blends, or to eliminate P. "Under criteria of having high and very high levels of P, dealers know that rates could and should be reduced," Miller says.

When Jeff Case, manager of sales and operations with Growmark FS in Sangerfield, attended the workshops, he was reassured to learn that no one was recommending the elimination of starter. The solution isn't to eliminate fertilizer but to use it better to benefit the environment, farms and farmers, Case says. "We can be better stewards and still sell fertilizer."

Case helped one customer meet the nutrient needs of different fields. The farmer applied straight N and micronutrients, but no P, on fields nearest the farmstead that received manure and were high in P. On fields farther away from the farm that didn't receive manure applications, this farmer had another tank with P for application, Case says.

"I go to the Cornell dealer meetings each year and realize that what we're trying to do is work with dairies to help them manage P," Case said. "I've found there are opportunities to work within the P standard that's coming. It's really been useful."

Team work

Through a team approach, the Starter P Project benefited the whole state, Miller says. "The whole idea of a team of people throughout the state pulling together in a collaborative effort to come up with some good answers from solid research is encouraging. And because of our effort, there was a great amount of data pulled together and

information was provided to all the people in the state because of that."

The statewide team effort brought diverse sites, soil types and climates into the project, thus providing more useful recommendations, Miller says.

Team member Greg Albrecht, Extension Associate in the Department of Crop and Soil Sciences at Cornell University, helped Kristen Stockin and Miller present Cropware workshops for dairy producers and their advisers. As part of his instruction in the use of Cropware, a nutrient management software developed by Cornell, Greg covered the basis for the recommendations, including the new information on reduced P rates generated by the Starter P project.

The hands-on workshops took research from the abstract and made it real, Albrecht says. "We can't just do research and expect it to be broadly adopted, unless it comes from local involvement and has local appeal." With a network of local trials and results throughout the state, producers and their advisers are more likely to understand the message – in this case, that reducing P applications on high and very high P soils is possible, profitable and good for the environment.

"When producers looked at their nutrient management plans for their own fields and considered the Starter P results from their area, they became confident that the results would work," Albrecht says about the Cropware workshops. Having farm advisers in the Cropware session was a bonus, he says. It made for valuable discussion among key decision makers on farms.

Hallmarks of the team effort were good communication between all the participants and work done in a timely way. "All along the way we got feedback from Quirine Ketterings," Miller says. "She is both a good leader and a team player."

"Participating in the Starter P Project was a very satisfying experience, and I think the biggest part of it was the team effort," Miller concludes. "And any project that has the kind of impact this one did on the farmers in New York State, I want to be part of."

By Eleanor Jacobs



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The **New York Starter Phosphorus Project** was initiated to evaluate and demonstrate the value of P starter application on soils testing high or very high in soil P. Cornell University's Nutrient Management Spear Program (NMSPP) faculty and staff, PRO-DAIRY staff and Cornell Cooperative Extension educators worked together to conduct 65 on-farm and 13 research station trials between 2001 and 2003. The project was funded by a NESARE research and education grant (LNE02-173) and contributions from New York State Natural Resources Conservation Service, Agway, Carovail, Pioneer Hi-Bred International Inc., AgriCulver Seeds and the Northern New York Agricultural Development Program. Based on the results of these three years, we conclude that on sites that test *high* in P and have no manure applications planned for the season, no yield penalty is expected when P starter levels are *reduced* below 25 lbs P₂O₅ per acre. On sites that test *very high* in P or when manure is applied to high testing sites, there is a low probability of a starter P response, and P could be *eliminated* from the starter without a yield or silage quality penalty. For more information, visit: <http://nmsp.css.cornell.edu/projects/starterp.asp> or contact Quirine Ketterings at gmk2@cornell.edu or (607) 255-3061.