Starter P Project Met a Need in Cayuga County

**The Starter P Project** couldn’t have come at a better time, according to Shawn Bossard, a field crops Extension educator in Cayuga County, N.Y., at the time of the research. There was increasing public attention to environmental issues and growing concern about phosphorus reaching the county’s lakes, said Bossard, who is now the executive director of Seneca County Cooperative Extension. “I knew of farms putting on more P than they needed.”

That has changed for some farms. Bossard, who established on-farm trials each year of the three-year **Starter P Project**, saw a 15% decrease in overall P use over the life of the project. “I thought that was neat,” he said.

Cutting phosphorus couldn’t have come at a better time, given increasing fertilizer costs. “The Starter P Project reinforces the value of cutting rates,” Bossard said. “Economics will help drive fertilizer tailored to individual field, and farming by the field, not by the farm.”

The **Starter P Project** was started with the first 10 field trials in 2000 funded by the Natural Resources Conservation Service (NRCS). Its purpose was to evaluate and demonstrate the value of P starter application on soils testing high or very high in soil P.

“This project had a different style,” said Bossard. “It was derived from pretty serious questions of Extension on what we needed.”

The Starter P Project was field driven from the start. “Producers and their advisers asked us how much P they really needed for optimum crop production, and they were specifically interested in answering this question for soils that are classified as high or very high in P based on their soil test,” said Quirine Ketterings, leader of the Nutrient Management Spear Program (NMSP) and a faculty member in the Cornell Department of Crop and Soil Science, College of Agriculture and Life Sciences.

“It is our mission in the Nutrient Management Spear Program to do applied research that addresses producer and industry questions about environmental management of farms. We also aim to extend the knowledge we gain through our research and have an impact. We want to work with the industry to achieve implementation of best management practices that increase farm profitability and protect environmental quality.”

**Widespread cooperation**

“I was skeptical at first,” said Jon Keller about lowering or eliminating P. But the head of the Carovail sales force in a four-county region contributed ammonia sulfate to the project anyway. “When I saw the results of what Shawn did in the fields, I rethought how much P was needed,” he said.

Fertilizer dealers at first thought the project would cut into their income, Bossard said. “But they began to see that if they developed a custom blend and charged for that, it could be a win-win, and they converted.”

Keller continues to recommend phosphorus, just not as much. “I still feel you need some starter P but not nearly as much as recommended in the past. I backed off on my recommendations.’

He presents the idea to his customers this way: “I tell my farmers they can cut their rate and go a lot farther on a good planting day. It’s a win-win. Farmers are cutting rates but not affecting yields. Yes, we’re in business to sell fertilizer, but we want to be there for the long term. We won’t be if we sell farmers something they don’t need.” Keller also emphasizes soil testing. “We’ve probably done more now than ever before,” he said.

**Farmer adoption**

Bill Kilcer, a Cayuga County dairy farmer, ended up dropping P completely out of his planter. “I had a question on whether I needed phosphorus in the starter,” said the Genoa farmer who grows 120 acres of corn. “Before the project, I used a P-based starter for corn. I’ve changed to N-based.”

Shawn Bossard, field crops educator at Cornell Cooperative Extension of Cayuga County at the time of the Starter P Project, worked with producers on on-farm research in each of the 3 years of the project. Shawn is currently the Executive Director of Cornell Cooperative Extension of Seneca County.
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 (NMSP) 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 qmk2@cornell.edu or (607) 255-3061.