



## *Cobleskill Student as Cornell Intern*

*By Kate Birchenough*

Wayne Berry, a State University of New York at Cobleskill student, has hopes of working side by side with the Maine Natural Resource Conservation Services, and with his recent internship with Cornell University's Nutrient Management Spear Program, his dreams may become a reality.

When the Maine native came to SUNY Cobleskill, he wasn't quite sure where his college career might take him. Once he began working with Dr. Ted Bruetsch, Cobleskill professor of agronomy, Berry decided to obtain his Bachelor of Technology in Plant Science.

The Cobleskill curriculum requires students do a 15-week internship. Bruetsch knew about the Nutrient Management Spear Program (NMSP) at Cornell University's College of Agriculture and Life Sciences, where Cobleskill alumnus and a former advisee Joe Lawrence, was working on his master's degree. The NMSP focuses its work on developing and implementing practical approaches to agricultural and environmental challenges. Its missions include applied research, extension and teaching and almost all projects undertaken by the NMSP involve collaborations with local Cornell Cooperative Extension educators throughout the state. With Berry's interest in environmental management, Bruetsch suggested he contact Dr. Quirine Ketterings, Associate Professor of Nutrient Management and team leader of the NMSP.



*Cobleskill-Cornell intern Wayne Berry (right) and Ted Bruetsch, Cobleskill Professor of Agronomy (left).*

"We try to have the students educated with a good practical background and Cornell Cooperative Extension deals with just that - good practical applied agriculture," said Bruetsch. "We've got a good marriage with Cornell. We are preparing our students with the hands-on type of experiences, and Cornell Cooperative Extension and the NSMP offer that."

Berry joined the NMSP in May of 2007. His internship included working with different experiments and learning laboratory techniques including being trained on the Illinois Soil Nitrogen Test, a new test that was being tested for use in New York State as part of Lawrence's graduate research project. "I helped with the trials by collecting soil samples and analyzing those in the laboratory, as well as sidedressing, and then harvest in the fall," said Berry.

The research provided comprehensive data from 34 different field trials over the past couple of years, helping producers realize there is more to their sod than meets the eye. "Wayne was great to work with, whether we were in the lab or in the field he worked very hard and showed great attention to detail, which was particularly important for ISNT lab analysis," says Lawrence.

After the initial months working as a team member on projects led by other students or staff members, Berry took the lead for three projects.

Ketterings explains, "My work with students succeeds when I see them successfully lead a project from the development of the idea to the delivery of the final product. All our projects in the NMSP are done in teams and it is tremendously rewarding to see students graduate from our program with not only a better understanding of and skills in research and extension, but also with team and leadership skills, an ability to give and receive criticism, and an enthusiasm for applied research and extension. Those soft skills are important for the success of our projects here and could help students in their professional lives once they join the work force as well."

The three projects that Berry undertook were: (1) development of an agronomy fact sheet on soil texture; (2) a stand-alone powerpoint presentation on the End-of-Season Stalk Nitrate Test; and (3) a greenhouse study on the impact of manure treatment on nitrogen and phosphorus dynamics with brown midrib sorghum x sudangrass as the test crop.

For the soil texture fact sheet, Berry worked with Dr. Renuka Rao, Director of the Cornell Nutrient Analysis Laboratory. "We needed a fact sheet that could be handed out with the results of soil texture analyses done by the laboratory," Rao explains. Berry received input from staff from the New York Natural Resources Conservation Services as well. The final fact sheet was released in August 2007.

Berry developed a powerpoint presentation on the End-of-Season Stalk Nitrate Test that was shown to an audience of about 240 people during the 4-day Field Crop Dealer Meetings in October 2007. "Wayne took pictures for the powerpoint slides, put a draft together, received feedback from NMSP team members, incorporated the feedback, and developed the final version that we displayed during the Field Crop Dealer Meetings," Ketterings added.

Most of Berry's time went to a greenhouse project. "I did a greenhouse study to study the effects of alum and aluminum chloride addition to liquid dairy manure on nitrogen and phosphorus availability with sorghum x sudangrass as test crop," said Berry.

After initial discussions with Ketterings and NMSP staff members Greg Godwin and Kevin Dietzel, Berry developed the research protocols and set up the project. He worked with Pete Barney from St Lawrence County Cornell Cooperative Extension to locate a site from which to collect soil for the study. He set up the experiment, measured plant height, took soil samples over time, and harvested the sorghum x sudangrass on the final day of his internship.

Ketterings explains, "Wayne could unfortunately not complete the entire project within his internship as we decided to add a second cutting to the project, but we keep in

touch with him as we get the plant and soil analysis back and work on the report and publication for the study."

Berry attended weekly team meetings, the summer 2007 Field Crops Retreat, and other field crops extension events. He also attended the 2007 Northeast Regional meetings of the American Society of Agronomy, the Soil Science Society of America and the Crop Science Society of America that was held at Penn State this summer. "This was a great way to see applied research and extension that other states are doing," Berry said.

The internship was a positive experience for all involved. "The internship showed me the need for the different research that is being done now and the reason why it is being done and how it is being done," Berry said. "I'm more in tune with things. The internship gave me a better understanding of how things are going now, what it all entails."

"Quirine Ketterings was the right kind of person I was looking to have Wayne work with," said Bruetsch. "If a student gets dirty knees and hands, they've got a good internship. The internship was thorough and diversified - that's what I liked about it. He got to work with organizations, and attend meetings, and get involved, he wasn't just a worker."

"For our program, it is great to have Cobleskill students like Wayne join for their internships. These students have a solid background and great work ethics, and it is really nice to see them learn, develop skills in applied research and extension, become valuable team members and team leaders," Ketterings added. "For me these Cobleskill-Cornell internships fall under the category of 'things you just need to do because they are right.'"



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The **Nutrient Management Spear Program (NMSP)** is an applied research, teaching and extension program for field crop fertilizer and manure management on dairy and livestock farms. It is a collaboration among faculty, staff and students in the Department of Crop and Soil Sciences, Cornell Cooperative Extension and PRODAIRY. Our vision is to assess current knowledge, identify research and educational needs, facilitate new research, technology and knowledge transfer, and aid in the on-farm implementation of strategies for field crop nutrient management including timely application of organic and inorganic nutrient sources to improve farm profitability while protecting the environment. An integrated network approach is used to address research, extension and teaching priorities in nutrient management in New York State. For more information on NMSP projects and extension/teaching activities, visit the program website (<http://nmssp.css.cornell.edu>) or contact Quirine Ketterings at [gmk2@cornell.edu](mailto:gmk2@cornell.edu) or (607) 255-3061.