



SUNY Cobleskill B.T. Student John Weiss Participates in Cornell's Nutrient Management Research

By Lisa Fields

SUNY Cobleskill Plant Science B.T. student John Weiss had previously studied Business Administration at a junior college and planned to enter the restaurant business. Restaurant work experience, however, turned his interests to growing food rather than cooking and serving it. A summer job on a small organic vegetable farm instilled in him a love for field labor and the complexities of working with plants and soil. This inspired Weiss to choose a major in horticulture when he enrolled in SUNY Cobleskill. His plans changed when he took "Forage and Seed Crops" with Dr. Douglas Goodale in his second semester. In that class he learned about nutrient cycling and the relationships between forage crops and the animals who consume them. The connection between the source and the end product got Weiss enthused about agronomy and he changed his major. He explained, "I wanted to make my college experience purposeful."

John's academic performance and desire to learn more about applied research and extension led his major advisor, Dr. John Kowal, Chair of Plant Science, to suggest Weiss inquire about an internship with the Cornell Nutrient Management Spear Program (NMSP) under leadership of Dr. Quirine Ketterings. Two other Cobleskill students had completed their internships with the NMSP these past two years, working directly with research projects both in the laboratory and the field.

"Addressing the challenge faced by farmers to use nutrient resources in a manner that is both economically and environmentally sustainable is central to our program's mission," Ketterings explained about the various NMSP's research and extension initiatives. "Our work has to benefit the agricultural community and protect the environment".

This summer, the NSMP housed four interns, two Cornell undergraduates and two Cobleskill graduates. "The interns are an important part of our team. We benefit from working with them, as by teaching them it

helps our staff and students communicate what we do and how we do it, and we learn from them too. They all bring something unique to our team and together we can ensure we stay diverse, open-minded, enthusiastic, and relevant."

Kowal recommended Weiss apply for the internship, adding "John is a strong student academically who has a very thoughtful approach to subject matter." Weiss added, "I've always enjoyed working outdoors doing physical labor and I also wanted the involvement with current research work."



John Weiss (left) with fellow Cobleskill student and NMSP intern Hillary Bundick (second from left), Dr. John Kowal (second from right), and Dr. Quirine Ketterings (right).

One of these projects of the NMSP investigates the need for potassium fertilizer for alfalfa at the Musgrave Research Farm in Aurora, NY. Under the direction of Greg Godwin, NMSP's Research Support Specialist, Weiss learned about forage management and

participated in harvest and soil and tissue sample collection. He also participated in a new potassium project of Chang Lian, Cornell Agricultural Sciences student and summer intern. Lian is conducting the project as his honors thesis. Early in his internship Weiss joined Lian and other team members to set-up the plots on two commercial dairy farms. The study involved setting up four 10' x 20' plots on sixteen alfalfa fields of two farms. Each field was harvested three times. To avoid interference with the busy schedules of the farmers, the plots had to be hand-harvested shortly before harvest of the rest of the field and usually on short notice. Weiss experienced the teamwork and coordination of effort required for successful plot harvest. Ketterings' work philosophy sums it up: "We have an expectation in our program that all team members help and share in responsibility for each individual's project. Students learn to be leaders for their projects and team members for most other projects."

Weiss learned about laboratory analysis as well. Together with fellow Cobleskill intern Hillary Bundick, Weiss conducted the Illinois Soil Nitrogen Test, a relatively new soil test that estimates soil nitrogen mineralization potential.

Weiss also gathered data for SUNY Cobleskill graduate Anne Place's "Manure Application Study". Place is a graduate student with the NMSp, working on her Master's degree in soil science. The project includes work on ten farms located throughout NY.

Place's project is designed to determine the effects of shallow incorporation of manure with an aerator versus more aggressive incorporation with a chisel plow on corn yield and quality, compaction, nitrogen dynamics and crop residue conservation. For Weiss, this meant extensive soil sampling, taking readings with a soil compaction meter, and harvesting corn stalks for the late-season stalk nitrate test. The project showed Weiss how extension and research occur together through on-farm projects. This new experience instilled him with

a great appreciation for the impetus behind the field research. An enlightening part of Weiss's work on this project was interviewing participating farmers to learn about manure management. Weiss summarized his experience; " I gained greater exposure to the various aspects of a farm business. I learned directly from the farmers what their business challenges are and the issues they face regarding environmental regulations."

A culmination of Weiss's direct involvement in Extension outreach was the development of an agronomy factsheet entitled "Nitrogen Fertilizers for Corn." He wrote about the basic properties of each fertilizer material, its characteristics, plant availability, and effect on the surrounding soil. Weiss wrote the article with editorial input and feedback from several field crops Extension educators. This collaborative interaction exposed him to professional camaraderie and the benefits of constructive criticism. He noted that "it was a really valuable learning experience to get feedback from professionals and work together with them."

Weiss's experience with forage crops, farm producers, research staff and educators truly inspired him. "I would like to have a farm some day and be directly involved in research projects." Meanwhile, he is seeking employment in the agricultural industry. He hopes to start his agricultural career working with field crop research and is applying for jobs. Weiss's summer of learning experiences is summed up by his advisor, "Typical of our NMSp interns, John solidified his career direction. It shows how this collaboration between educational institutions benefits our students and in the long run, the future of the ag industry." Kowal said.

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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 Animal Science, Cornell Cooperative Extension, and PRO-DAIRY. 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://nmsp.css.cornell.edu>) or contact Quirine Ketterings at qmk2@cornell.edu or (607) 255-3061.