



Testing Soils and Students

By Kate Birchenough

Jonathan Klapwyk, agronomist at Pride Seeds, has positive memories of his time as a graduate student working with Cooperative Extension at Cornell University. He chose Cornell for his Masters of Science program after obtaining his undergraduate degree in agronomy from the University of Guelph in 2003.

"My degree program at Cornell helped me improve my understanding of corn silage testing and quality, statistical and research methodology, nutrient management, and weed ecology," he said. "Furthermore, working on an applied research project with Cornell Cooperative Extension field crops educators improved my communication, collaboration and organization skills."

Klapwyk chose the Nutrient Management Spear Program (NMPS) at Cornell because he was interested in nutrient management in the Northeast with a practical research focus. The NMSP is an applied research and extension program for field crops nutrient management in the College of Agriculture and Life Sciences, and a collaboration among faculty, staff and students in the Department of Crop and Soil Sciences, Cornell Cooperative Extension (CCE) and PRODAIRY.

"I was looking for a graduate program that would allow me to conduct a meaningful applied research project; a good team to work with; and a well-funded applied research and extension program with lab and field resources to complete quality research," he said.

Growing up on a farrow-to-finish hog farm near Elora, Ontario, Klapwyk was not exposed to CCE, but during his time at Cornell, he quickly learned why CCE educators and graduate research are so important to farmers.

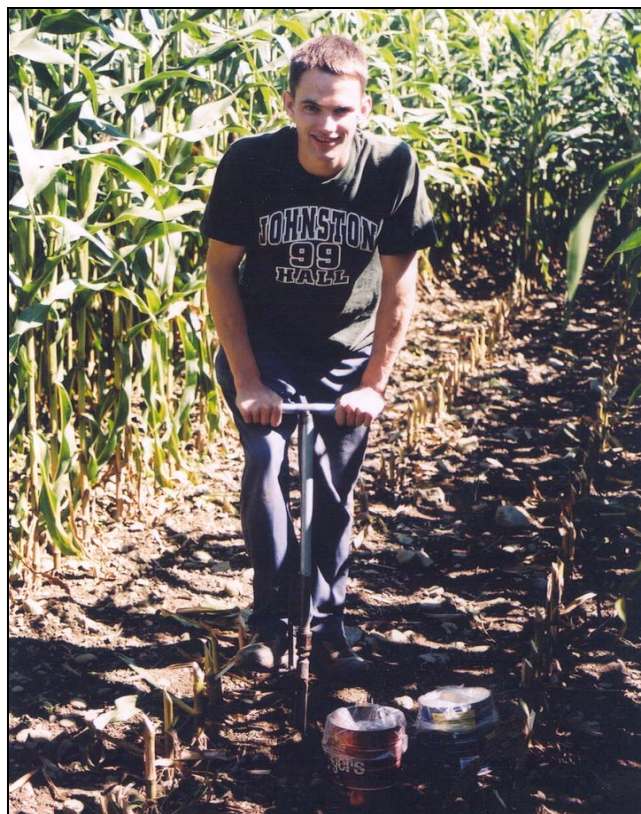
"Working with CCE educators was a very positive experience. I learned a great deal about the process, and challenges of conducting replicated on-farm research," said Klapwyk of his experience. "The CCE educators provided an avenue for me as a graduate student to work with farmers."

Klapwyk noted working with farm cooperators takes time and good connections

with the farmers, which the CCE educators helped foster.

"The CCE educators we worked with were always very keen to be involved in looking into new opportunities that would benefit the growers," said Klapwyk.

In the research Klapwyk evaluated a new soil organic nitrogen test, the Illinois Soil Nitrogen Test (ISNT), as a possible replacement for the pre-sidedress nitrogen test (PSNT). The PSNT has practical challenges where timing and depth of sampling is concerned. The ISNT could potentially allow for soil samples to be drawn at the regular soil sampling depth (6-8 inches) and at various times during the year, giving more flexibility to the producers.



Jon Klapwyk takes soil samples for his MS degree applied research project on nitrogen management for corn.

"We were able to test the performance of the ISNT on-farm due to the willingness and commitment of CCE educators to the on-farm research approach. Their enthusiasm for the

project was the reason why I had a tremendously positive experience both with the educators and farm cooperators," said Klapwyk.

Quirine Ketterings, Associate Professor in the Department of Crop and Soil Sciences, and Klapwyk's advisor for his Master's degree program concurs, "In the end, Jon's project included 33 field trials throughout New York State, enough to calibrate the new soil test and to publish three peer-reviewed journal articles based on the work. This would have been impossible without the field crops extension educators."

Not only did the on-site research help Klapwyk with his graduate project, it also gave the CCE educators a chance to remain in the loop with the latest technology.

"These projects give us an insight to what is cutting edge stuff," said Tom Kilcer, Field Crop Extension Educator with CCE of Rensselaer County in Troy. "The more information we have on the newest technology, the better. When a farmer asks us about it, we can talk intelligently about it. It's a win – win situation."

Pete Barney of St. Lawrence County CCE in Canton agrees, as he is often a one man show. He enjoys doing the research, but finds he is short handed at the office, so it is helpful for him to join these projects.

"On-farm research is a great way for the students to apply what they are learning at college. The projects are useful for us locally, and these kinds of research projects are fun to do," said Barney. "You take something you don't know very much about and you are trying to get it to work in this state. You are trying to get all of the information you don't have."

Barney noted how Klapwyk wasn't afraid to get his hands dirty, come out to the field to pull soil samples or hand harvest corn plots.

"He is a bright young man," Barney said. "It's a joy for me to work with people like this."

"I think it's important for students to work with CCE so that they learn how to effectively perform on-farm agricultural research and understand the challenges of replication, field variability, and keeping the research goals and

plot design simple," said Klapwyk. "I also think it is important for students to understand how important it is to the farming community to have research done on farms with farm-scale equipment. I was able to gain a real appreciation for the extension system that exists in New York. I had an opportunity to really experience and benefit from the accessibility that New York farms have to CCE staff throughout the state. Being from a farm, and farming myself in the future, I appreciate the importance of accessibility for the farm community to agriculture extension."

While the text books may have answers, Kilcer and Barney agree, it is the hands-on approach that helps the information sink in.

"It gives them a real dose of reality," Kilcer said. "Theoretical things that work in books and a lab, may not work that way out in the field."

"It's where the rubber hits the road," said Barney. "There's a lot of theory and good information, but how the theory and information is utilized in the field, is done through on-farm research. The students learn the mechanics of doing farm tasks as well as working with people and the public, giving them a well rounded experience."

Ketterings agrees, "I think it is important to engage both undergraduate and graduate students at Cornell in CCE and applied research. It allows students like Jon to gain experience in on-farm research, and enhance communication, presentation and leadership skills at the same time. And, it benefits the CCE offices and New York State agriculture too."

"I hope the college continues to encourage students to get practical experience in their discipline," said Barney. "I'm a believer in the students getting into the field and understanding what they are learning from the book and how it actually does apply in the every day life of the farmer."



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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 plant nutrient management including timely application of organic waste (manure and composts) and inorganic fertilizers 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 gmk2@cornell.edu or (607) 255-3061.