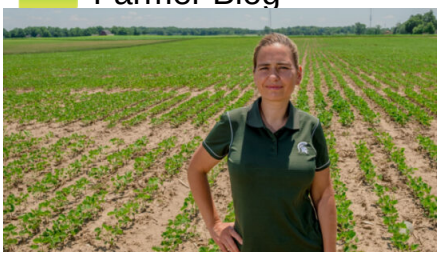
SOYBEAN RESEARCH PRINCIPAL INVESTIGATOR PROFILE – MARISOL QUINTANILLA

Farmer Blog



Marisol Quintanilla, Assistant Professor and Applied Nematologist, Michigan State University

Why did you decide to pursue a career that includes soybean research?
My family has a farm in Chile, growing table grapes for export. We also grow corn, soybeans and vegetables on other parts of the farm. I studied agriculture in Chile and wanted to finish my degree in the United States. I attended Andrews University in Berrien Springs, Michigan. Unbeknownst to me, Andrews faculty contacted professors at Michigan State University and recommended me for graduate school. While working on my master's and Ph.D. at MSU, I studied under Dr. George Bird, a nematologist who worked with soybeans.

What research topic have you completed in the past or are working on now that could have or has had the most significant impact on soybean production?
I was part of research on the rotation of different soybean varieties, and we found if we rotate PI88788 with Peking, there is significantly more yield and fewer nematodes. Peking does very well in the first year, but with time, if planting Peking back-to-back, there is significant reduction in yield and increases in nematode numbers. We recommend to farmers that they should use Peking as a tool in rotation with PI88788.

My work on applying composts and manures to help reduce SCN numbers in the soil is showing promise. I'm also working on trying to improve soil health and changing the environment of the soil to make it less friendly for nematodes.

How has the soybean checkoff enhanced your ability to find answers to production problems for farmers?
The Michigan Soybean Committee has been amazing. They are so supportive, and they have provided advice and funding for many years. I am tremendously grateful for their support.

Within your area of expertise, what are the top two or three general recommendations you would offer farmers to improve their management practices?

1. *Check your SCN numbers in your soil.*
2. *If you have SCN, rotate crops with non-hosts. Also rotate sources of resistance — PI88788 with Peking.*
3. *There are other practices that play minor roles but are still important, such as using nematicide seed treatments and adding compost or manures, which seems to make some difference in SCN numbers.*

Within your area of expertise, what do you consider to be critical soybean research needs that can impact the profitability of famers in the future?
I think finding new, different sources of resistance so there are more options to rotate with Peking and PI88788 is critical. Adding sources that work with different mechanisms keeps the nematode guessing, and it has less chance to adapt, to develop resistance to the resistance.

Also, developing more effective chemicals is important, which is a challenge. I think part of the challenge is dosage. It's hard to find something so miraculous and that can last for a long time, considering it is just a powder coating on a seed. Even when it works well, it's only effective for the first few weeks.

We need to better understand the soil environment that SCN prefer. We could modify the soil environment with amendments to make it less friendly to SCN. There may be currently unknown products or management practices we can use.

SRIN articles:

Exploring Management Practices to Reduce SCN Numbers

SOYBEAN RESEARCH & INFORMATION NETWORK

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