Soybean Cyst Nematode: A New Threat to Soybean Production and Profitability in the Northeast

NE Extension Risk Management Grant

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Introduction

The soybean cyst nematode (SCN) is the #1 pest of soybeans causing $1.2 billion losses in North America annually. SCN was not considered a northeast pest of concern until it was first discovered in NY in 2016. Since then, it has been confirmed in 32 counties. SCN is a significant risk, and our farmers need to understand it's time for active management, before it becomes our #1 soybean pest.

We conducted trainings across NY to educate farmers on the biology, epidemiology, sampling and testing, impacts, and management of SCN to help farmers reduce risk to losses from this pest by making the best and most economical management decisions. Most sessions were virtual (due to COVID), open to surrounding states, and recordings made publicly available. Each training session reached about 20–200 stakeholders each, and 664 farmers in total.

Participating producers did 1) understand the importance of testing and implement regular testing of their fields, 2) understand how to interpret test results and implement appropriate management actions according to results , and 3) understand all integrated pest management options available and implement the best strategy for their individual situations.

Methods and Objectives

We conducted trainings across NY to educate farmers on the biology, epidemiology, sampling and testing, impacts, and management of SCN to help farmers reduce risk to losses from this pest by making the best and most economical management decisions.

1. Understand the importance of testing and implement regular testing of their fields,
2. Understand how to interpret test results and implement appropriate management actions according to results
3. Understand all integrated pest management options available and implement the best strategy for their individual situations.
4. Complete post survey for understanding and adoption of IPM for SCN.

Adding SCN training sessions to existing, well-attended regional extension venues ensures that this programming reached a large targeted audience, and making recordings of these trainings publicly available will promote broader potential for reaching soybean producers throughout the northeast.

Results and Impacts

Regional Cornell Cooperative Extension field crop specialists included 10 educational trainings at extension venues in 2021-2022; we reached 664 NY soybean growers, crop consultants and agribusiness associates. The following are the meetings and number of participants.

Table 1: Meetings and number of participants

Meeting	Location	Type	Title	Participants	Date
Grower Meeting	CCE Cayuga County	Online	Soybean Cyst Nematode – Biology, Epidemiology and Management	26	1.20.21
SCNY Crop Congress	CCE SCNY	Online	Soybean Cyst Nematode – Biology, Epidemiology and Management	22	1.21.21
Oneida County Crop Congress	CCE Oneida County	Online	Soybean Diseases of Concern – Identification and Management	43	1.22.21
NWNY Soybean and Small Grains Congress	CCE NWNY	Online	Soybean Cyst Nematode – Biology, Epidemiology and Management	234	2.10.21
NNY Crop Congress	CCE NNY	Online	Soybean Cyst Nematode – Biology, Epidemiology and Management	68	2.25.21
CNY Crop Congress	CCE CNY	Online	Soybean Cyst Nematode – Biology, Epidemiology and Management	40	3.3.21
Dry Bean Congress	CCE	Online	Soybean Cyst Nematode – Biology, Epidemiology and Management	49	3.19.21
LainGro TiMac Agro grower meeting	CCE	online	Soybean Cyst Nematode – Biology, Epidemiology and Management	57	4/8/21
2021 Cornell Field Crops annual field day	CCE	In Person	Soybean cyst nematode in New York: What a grower should know and do	100	8/12/21
Cornell Western NY Vegetable Team	CCE	In Person	Soybean Cyst Nematode Updates for NYS and Utilizing Field Mapping as a Management Tool	25	9/8/2021

While we have only had 24 people respond to the retrospective survey their responses has showed that they learned the material. We asked the participants to indicate the level of understanding or knowledge they had before and after the training on SCN. We used a likert scale (1-5) to measure the understanding of SCN. The following is the scale used to measure their understanding:

1 = None – Have no understanding/knowledge of the content.

2 = Low – Have very little understanding /knowledge of the content.

3 = Moderate – Have basic understanding/knowledge; there is more to learn.

4 = Advanced – Have a working understanding/knowledge; can apply most of the content.

5 = High – Have complete understanding/knowledge and can fully apply the content.

In figure 1, shows a very low level of understanding of the SCN before taking the training but a high level of understanding after. Figure 2, shows that growers are adopting practices to help manage SCN in their fields. While the number of responses are low, it is most likely representative of the population that attended the trainings.

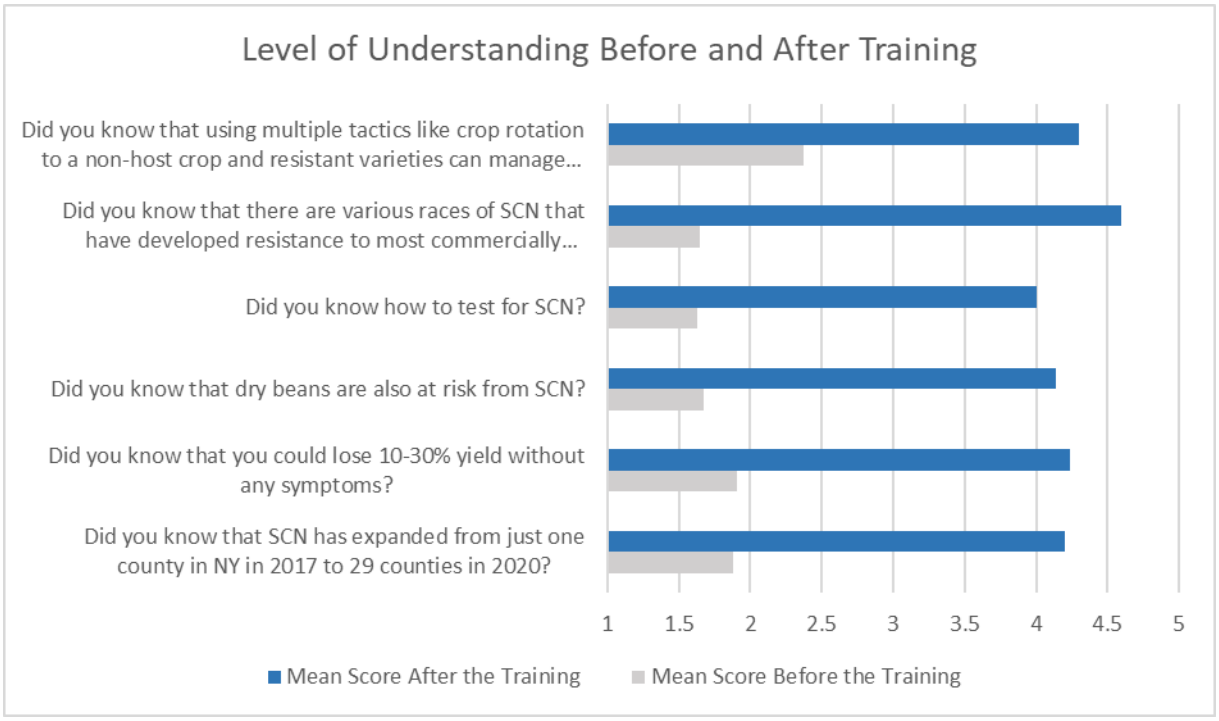

Figure 1: Knowledge of SCN before and after training

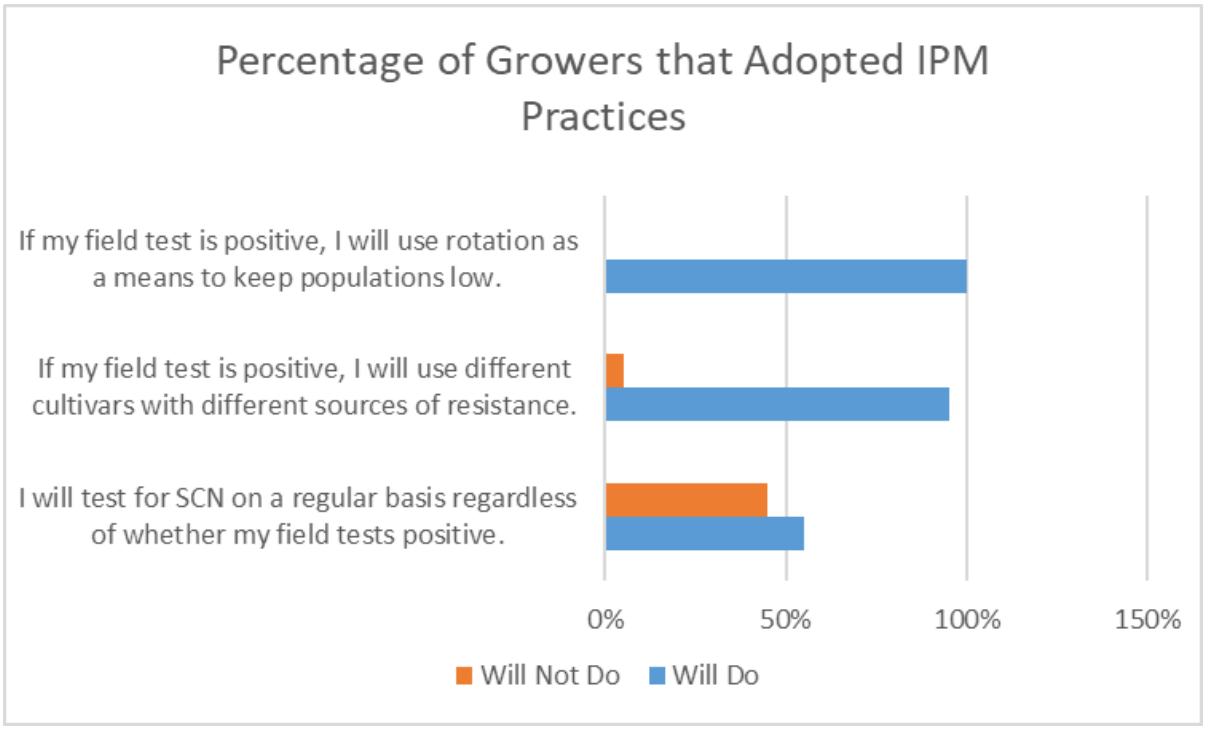

Figure 2: Adoption of practices for managing SCN

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