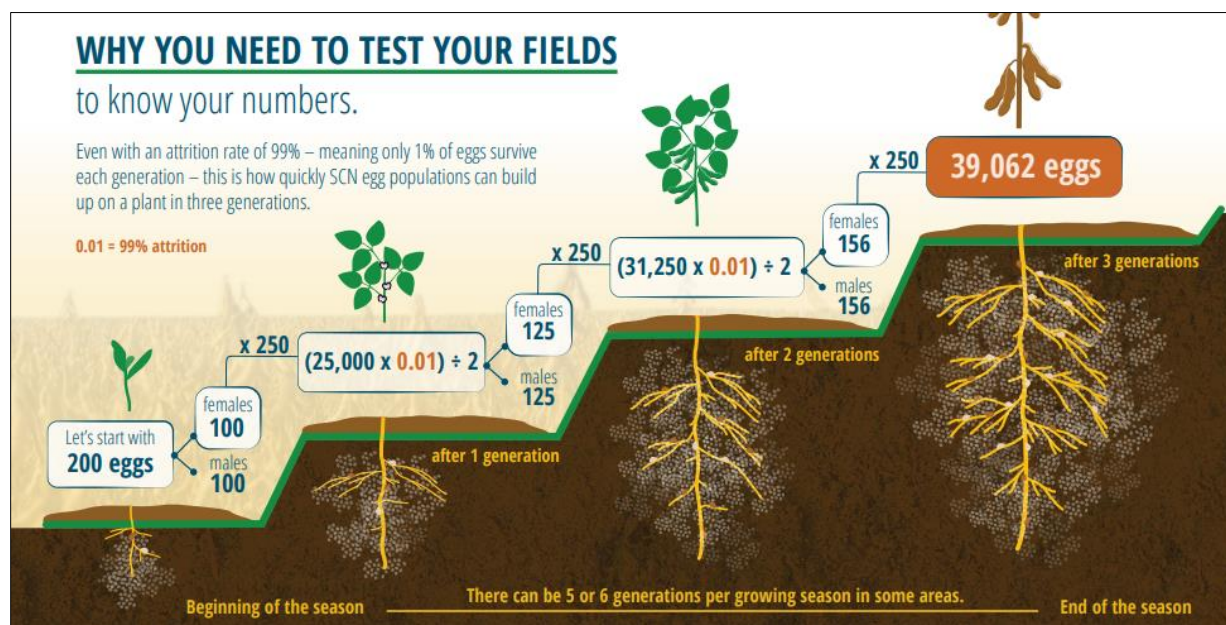


Hello [REDACTED],

Thank you for granting me access to your soybean field to test for the soybean cyst nematode (SCN). Lab results are back, and your field on [REDACTED] road was positive for the nematode. Fortunately, your positive result revealed an SCN egg count of only 125 eggs per cup of soil. That is considered a low population, and is easily managed with crop rotations and rotating the soybean varieties you plant in that field.

The soybean cyst nematode is considered to be the number one pest of soybeans globally and nationally. It was estimated to have caused 109 million bushels lost in the US alone in 2017. The nematode has not been considered a pest of concern to NY growers until it was first discovered in Cayuga County in 2016. Since then, the NYS Integrated Pest Management Program in cooperation with statewide extension specialists, with support from NYS Dept. of Ag and Markets and the NY Corn and Soybean Growers Association, has been leading efforts on surveying for this pest to determine how widespread it is, and at what levels so that we can help growers make the best and most economical management decisions. In 2019, we confirmed SCN in an additional six counties, and expect to find it in additional locations every year. That means it's time for our soybean growers to start actively managing for this potentially devastating pest, before it becomes our number one problem for soybean production in NY.

Figure 1. SCN populations can increase rapidly in one growing season.



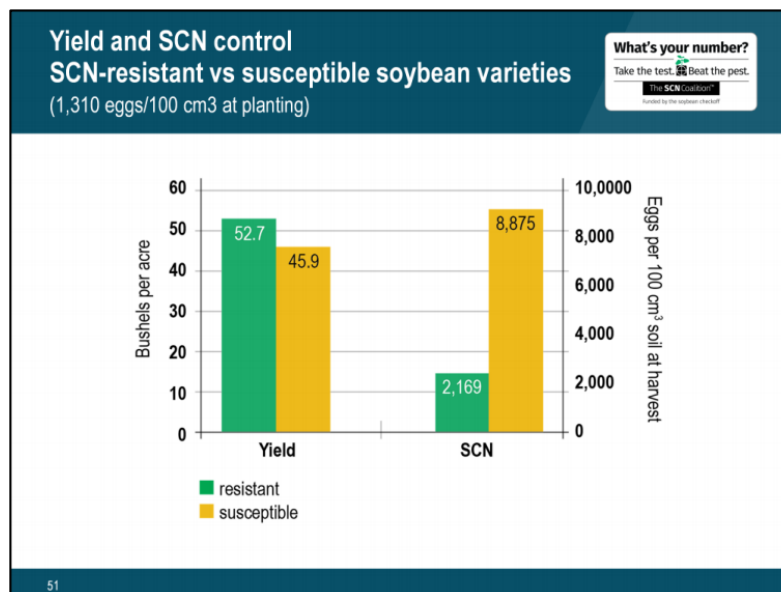
Once a field is infested with SCN, eradication of the pest is not an option. And, unfortunately, SCN populations can increase rapidly in a field due to multiple generations of this nematode within a single growing season (Figure 1). Fortunately, there are a few simple options to reduce or maintain SCN populations in your field. The best management practice is simple crop rotation to a non-host, such as corn for one year. As illustrated in Figure 2, the first year rotation to corn can result in up to a 50% decrease in SCN.

Figure 2. The effects of crop rotation on SCN populations.













The next important management option is to plant SCN-resistant varieties, and to rotate those varieties that you plant in the same field. Although plenty of SCN-resistant varieties are available on the market, the nematode has adapted to these genetics by developing a number of ‘races’ that can overcome some of the most widely available resistance genes in popular soybean varieties. Therefore, it’s important not to plant the same soybean variety repeatedly in any SCN-infested field. By planting and rotating SCN-resistant varieties, you’ll achieve higher yields and reduce SCN populations within the field.

Figure 3. The effect of planting SCN-resistant varieties on soybean yield and SCN populations



The other management tool for SCN involves including nematode-protectant seed treatments on SCN-resistant varieties that you plant. Results have shown that these seed treatments are most effective when SCN populations are high in a field, and that they may not be cost-effective in fields with low SCN populations. At this point, the vast majority of SCN egg counts in positive fields in NY have been in the 'low' range. According to Missouri State SCN Diagnostics Laboratory, "An egg count of less than 500 eggs is considered low. An egg count of 500 to 10,000 is considered moderate. An egg count greater than 10,000 is considered high". Therefore, depending on your egg counts, these seed treatments may have questionable value for your situation. There are a number of these nematode-protectant seed treatments available, and they are outlined below.

Figure 4. Nematode-protectant seed treatments. *Not all treatments may be labeled for use in NYS.*

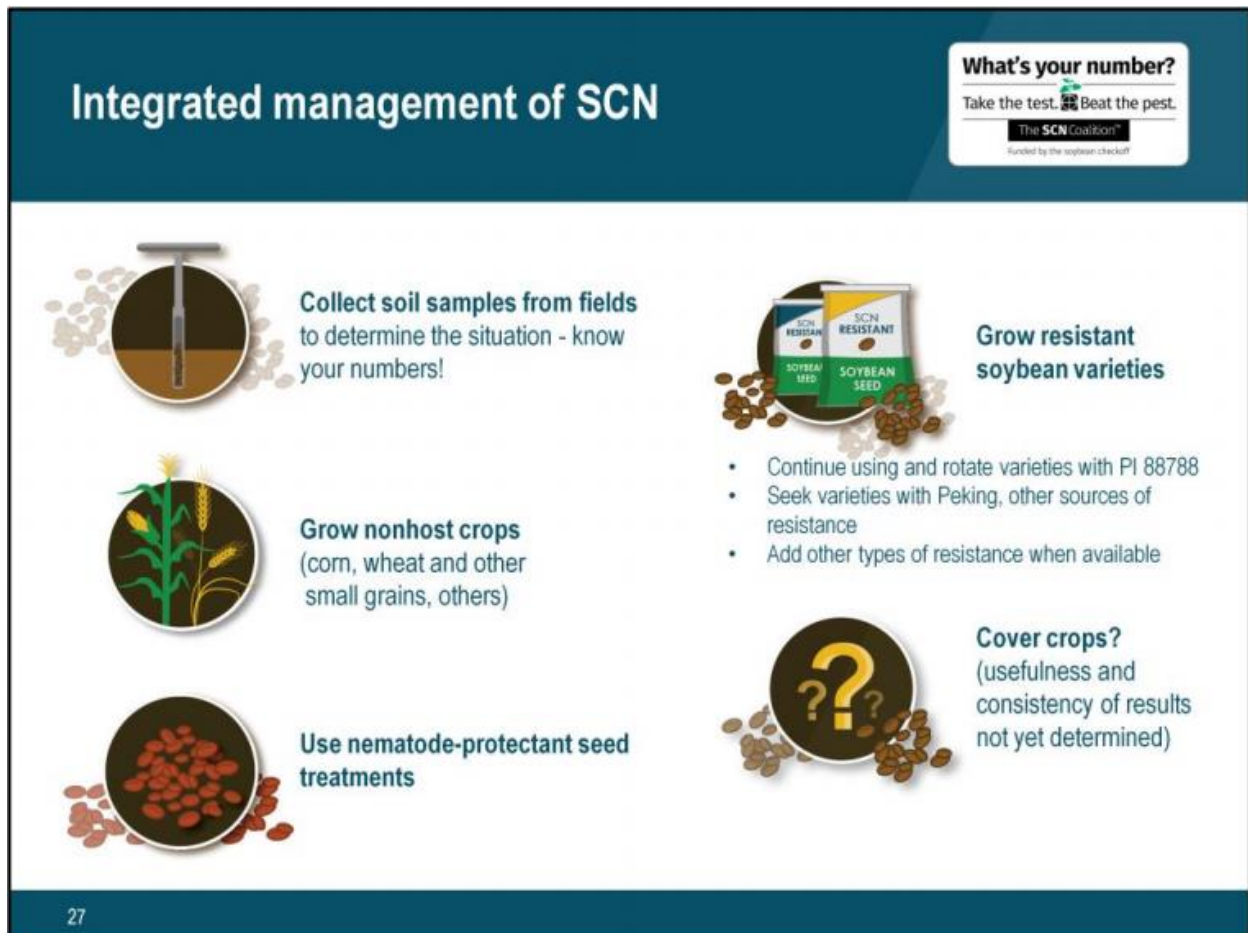
<div> <div> <h1>Nematode-protectant seed treatments</h1> <div> <p>What's your number?</p> <p>Take the test. Beat the pest.</p> <p>The SCN Coalition</p> <p><small>Powered by the soybean checkoff</small></p> </div> </div> </div>				
Brand name	Crop(s)	Targeted soybean nematodes	Active ingredient	Mode of action
 Syngenta	cotton, corn, soybean	all plant-parasitic nematodes	abamectin	inhibits nematode nerve transmission
 Direct Enterprises	all plants	all plant-parasitic nematodes	harpin protein	induces plant defenses
 BASF	cotton, corn, soybean	all plant-parasitic nematodes	<i>Bacillus firmus</i>	blocks infection, degrades eggs
 Syngenta	soybean	SCN	<i>Pasteuria nishizawae</i>	nematode parasite
 BASF	soybean	SCN, root-knot, reniform, lesion	fluopyram	inhibits nematode cellular respiration (SDHI)
 Valent	corn, soybean	SCN, root-knot, reniform, lesion, others	<i>Bacillus amyloliquefaciens</i>	paralyzes nematodes
 Beck's	corn, soybean	all plant-parasitic nematodes	heat-killed <i>Burkholderia rinjensis</i> and fermentation media	not stated
 Albaugh				
 Nufarm	cotton, corn, soybean	SCN, root-knot, reniform	<i>Bacillus amyloliquefaciens</i> and cis-Jasmone	induces plant defenses and systemic resistance
 Syngenta	soybean, other crops (not cotton, corn)	SCN, root-knot, reniform, lesion, lance	pydiflumetofen	inhibits nematode cellular respiration (SDHI)
<div> <div>24</div> <div>Products labeled current as of January 2020</div> </div>				

There has been some research on the efficacy of certain cover crops for managing SCN. Depending on the species and possibly even the variety within the species of cover crop, there have been mixed results on reducing SCN populations. There's a lot of effort underway to evaluate the role of cover crops as a tool for managing SCN, but it is unclear at this point how useful they will be.

In summary, you have three main tools for managing SCN: 1) crop rotation, 2) plant and rotate SCN-resistant varieties, 3) seed treatments if your SCN population is considered high. Now that you know you have SCN, it's important that you continue to monitor your fields for this pest and maintain records of your egg counts. It's recommended that you test infested fields every three years to keep track of how your SCN egg counts are changing. Keep in mind that you'll never eliminate it from the soil. But, the goal is to keep populations low, or reduce populations to the 'low' category (less than 500 eggs). For testing, we recommend the [SCN Diagnostics](#) Laboratory at the University of Missouri, where they

specialize in this testing with a very fast turnaround with results for \$25 per sample. Contact your local Cornell Cooperative Extension field crops specialist for questions or assistance.

Figure 5. An IPM approach to managing SCN.



All figures included herein are courtesy of the [SCN Coalition](#). We highly recommend that you visit their website for further information and resources. For additional information regarding the SCN surveys in NYS, funded by NYS Department of Agriculture and Markets CAP survey, or the general statewide SCN survey funded by the NY Corn and Soybean Growers Association, please contact Jaime Cummings (jc2246@cornell.edu).

Additional resources:

[Cornell SCN Web Page](#)

[SCN Now Confirmed in NY](#)

[Fall is the Time to Test for SCN](#)

[SCN Now Confirmed in 6 Additional NY Counties](#)

[Sudden Death Syndrome and SCN](#)

[Soybean CAP Survey](#)