

## **Monitoring for Soybean Cyst Nematode: Getting Ahead of the Pest (2021)**

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***KPI #1: Project investigators and collaborators will identify soybean growers willing to participate, and 5-10 soybean fields to monitor and sample for SCN testing.***

***KPI #2: Project investigators and collaborators will collect soil samples from 5-10 soybean fields at the end of the growing season and submit to SCN Diagnostics Laboratory testing facility.***

For this project, 8 total investigators and collaborators sampled 61 fields in 25 counties. Of these, 13 fields were positive in 6 counties, revealing 3 counties where SCN had not previously been recorded (Oneida, Schenectady, and Tioga). Of the fields that tested positive, 9 had what are considered low SCN egg counts (less than 500 per cup of soil), and the other 4 fields had what are considered moderate egg counts (500 – 10,000 eggs/cup). In contrast to last year, no fields in this study yielded high populations (greater than 10,000 eggs/cup).

Investigators attempted to target fields and counties that had not been surveyed in the past, though some fields were re-sampled in order to identify population dynamics. In particular, the field with the highest egg count in 2020 (Jefferson Co, >20k eggs/cup) was planted with oats this year and still yielded ~5k eggs/cup of soil. While this count is still higher than all other fields surveyed in 2021, this shows a ~75% reduction in eggs/cup through crop rotation.

Together with two companion studies also conducted in 2021 (soy and dry bean), SCN-positive soil samples were collected from fields in a total of 15 of 37 NY counties in 2021 (Table 1), including another two samples in the moderate egg range, and one in the high range (20,000 eggs/cup) (Table 2). Counting all available data from previous years, SCN has now been found in 34 of 45 counties sampled in NY since 2016 (Figure 1). We sampled four new counties this year, leaving only 7 upstate counties (north of Rockland and Westchester) unsampled. Of these four previously-unsampled counties, Schenectady (soybean) and Yates (dry bean) counties yielded positive samples.

Continued monitoring of this pest provides farmers with the information needed to mitigate yield loss based on SCN population levels. Low/moderate populations may be managed with crop rotation and SCN-resistant soybean varieties, while high populations may require more costly strategies such as nematicidal seed treatments.

***KPI #3: Results will be shared with growers and summarized for sharing via websites, extension meetings, reports, and articles.***

Results from this study and management recommendations were shared with hundreds of farmers, researchers and other stakeholders via presentations at 12 extension meetings across NYS this past winter, a poster presentation at the University of Colorado, and a presentation given during the Nematodes in Atlantic Soybean Production Webinar hosted by the University of Delaware. An article that will summarize 2021 results and promote the 2022 sampling efforts is being prepared and will be shared via Cornell's *What's Cropping Up?* and other online media. Individual farmers with SCN-positive

fields were contacted and given a document detailing management recommendations. The survey will continue in 2022 thanks to continued funding support from NYCSGA. Going forward, it will be important to both document new positive fields as well as the population dynamics in fields that have been previously identified as having high populations.

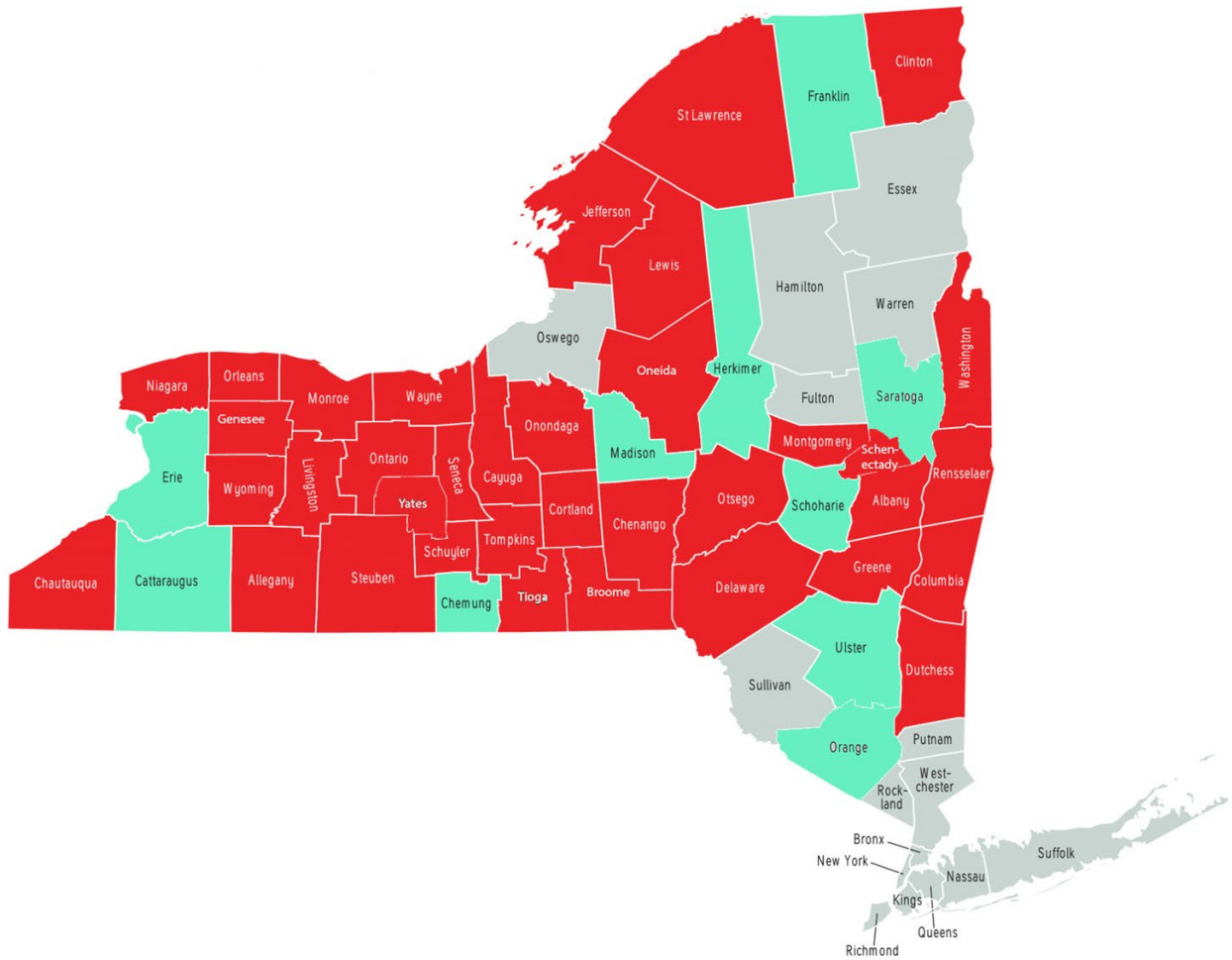
**Table 1. Detection of SCN in New York soybean fields in 2021 (all studies)**

	Fields	Counties
<b>Sampled</b>	98	37
<b>SCN+</b>	30	15
<b>Percent+</b>	30.61%	40.54%

**Table 2. SCN populations in sampled soybean fields in New York in 2021 (all studies)**

SCN population (eggs/cup of soil)	Fields
<b>Not detected*</b>	68
<b>Low (&lt;500)</b>	25
<b>Moderate (500-10,000)</b>	5
<b>High (&gt;10,000)</b>	0

\*SCN populations may be present at levels that were not detectable, or in areas of fields that were not sampled



**Figure 1. Confirmed detection of SCN in New York counties since 2016. Red = SCN detected in soil samples; Green = SCN not detected in soil samples; Grey = no samples tested.**