

## The SCN Coalition: Battling A Bug to Improve America's Soybean Profitability and Sustainability

What's your number?

Take the test.  Beat the pest.

The SCN Coalition™

Funded by the soybean checkoff

### SUMMARY

America's farmers are waging war against the soybean cyst nematode (SCN) to improve profitability and sustainability by harvesting more soybeans from less acres. These parasitic roundworms feed on soybean roots, robbing 23% of the plant's yield potential, requiring farmers to plant more acres to feed the world. Research showed many farmers were unaware of SCN's resistance to their management until The SCN Coalition, a public/private partnership, created a campaign to help farmers actively manage SCN. To date, this campaign has motivated up to 18% more farmers to actively manage SCN, enabling them to farm more sustainably – both economically and environmentally.

### 1. INSIGHTS AND ANALYSIS

**SCN is the No. 1 yield-grabbing pest in U.S. soybean fields** costing farmers over \$1.5 billion annually. Farmers' primary defense was using a seed variety that was resistant to SCN called PI 88788. That worked – for a while. Now this bugger has become resistant to PI 88788, which puts farmers in a pickle because they only have limited ways to manage this pest. Their best weapons going forward, in addition to non-host crop rotation, are to actively rotate PI 88788 with a variety with a different resistant source like Peking and/or to use a nematode-protectant seed treatment. Secondary research surfaced a recent, first-of-its kind quantitative study that was insightful to better understand farmer awareness and attitudes about SCN, its various treatment options and the influencers of farmer decisions. The 2015 study would later serve as a benchmark for follow-up primary research to measure farmer behavior change.

**Cost of the SCN Resistance War.** A literature review of university research concluded from 15 years of surveillance trials in farmers' fields that SCN is increasingly able to reproduce on the PI 88788 resistance source. And as SCN reproduction increases, yield decreases as much as 14 bushels per acre, representing a 23% yield loss.

**Farmers Underestimate Their Enemy.** In most cases, symptoms of SCN are not visible above ground, so many farmers aren't aware resistance is breaking down or that they're losing yield. Most farmers are simply planting a variety with PI 88788 resistance and assuming they're managing SCN. Primary research with 1,096 soybean farmers in 17 states showed farmers aren't fully aware of the impact SCN resistance can have on yield or active SCN management practices. While only 57% of farmers agreed SCN resistance is happening, their perception of the yield loss was only 5.1 bushels per acre versus the actual 14-bushel yield loss university research confirmed.

**Not Enough Actively Fighting.** Only 39% of farmers were actively managing SCN by rotating sources of resistance and only 22% were using a nematode-protectant seed treatment.

**One Shot to Change Behavior Per Year.** Farmers think in seasons, and soybeans are only planted once per year. As a result, the opportunity to influence decisions and drive behavioral change can take multiple years.

### 2. PLANNING

Armed in 2017 with a renewable \$300,000 grant each year from the farmer-funded soybean checkoff, the existing primary/secondary research and literature review finding, and technical direction from Iowa State University nematologist, Dr. Greg Tylka, and North Dakota State University plant pathologist, Dr. Samuel Markell, the coalition developed a four-year, comprehensive strategic communications plan of attack including:

**Goal and Objectives: Motivate more farmers to actively manage SCN by adopting the following practices as measured by these behavioral objectives:**

- 1) Increase 5% of farmers who are using nematode-protectant seed treatments, from 22% to 27% by 2021.
- 2) Increase 5% of farmers who are rotating genetic sources of SCN resistance, from 39% to 44% by 2021.
- 3) Increase 5% of farmers who name Peking as a genetic source of resistance, from 15% to 20% by 2021.
- 4) Increase 5% of farmers who are planting SCN resistant soybean varieties, from 59% to 64% by 2021.
- 5) Increase 5% of farmers who are rotating non-host crops, from 71% to 76% by 2021.

**Target Audience:** Farmers in the 17-state, primary research geography who plant 85% of the U.S. soybean acres.

**Strategy: Unify the industry influencers who farmers trust for agronomic solutions and then mobilize them as credible “message multipliers.”**

This industry activation engaged a 40-member public/private partnership (PPP) including the two national soybean check-off organizations, eight private industry partners and 30 universities in 28 states and Ontario, Canada; a Delta Force committed to help farmers actively fight this bug to win.

**Messages:** The first coalition action to unify the troops was creating messages. Drafts of active SCN management messages were sent to a feedback

loop of the entire SCN Coalition community until consensus was reached on these messages and a call to action:

- (1) Test your fields to know your SCN numbers,
- (2) Rotate SCN resistant varieties,
- (3) Rotate to non-host crops, and
- (4) Consider using a nematode-protectant seed treatment.

**Branded Call To Arms:** “Take the test. Beat the pest.”— which easily rolls off the tongue, is simple and memorable, and reinforces the farmer behavior and benefit from actively managing SCN.

### 3. EXECUTION

---

**Tools for the Troops.** Prior to launch, The SCN Coalition equipped its allied partners with an **online resource center, social media campaign** and a **comprehensive digital tool kit** that made SCN resistance, testing and management relevant to farmers and the advisors who serve them. Through collaboration with university Extension, the coalition created **downloadable training presentations** that included the latest SCN research and new data to help agronomists advise farmers. It also **mobilized university Extension education** efforts in the 17 states to extend these messages locally to farmers, while industry partners used their existing farmer communication channels and seed and crop protection dealer networks to take the messages direct to farmers.

**Launch and Refuel Events.** The SCN Coalition launched their attack at Commodity Classic (2018) – the largest convention/trade show event for soybean farmers – with an exhibit, press conference, SCN learning session and media interviews. Industry partners joined together to publish a 32-page insert in the farmer trade magazine, *Corn+Soybean Digest*,

telling the story of the evolving SCN problem. The coalition refueled the troops at the 2019 Commodity Classic, using a press conference, SCN learning session and media interviews to reinforce how farmers can actively manage SCN-resistance today while sharing how the allied checkoff-funded research is advancing new SCN management tools for the future. The coalition carried these messages to even more farmers.

**“Let’s Talk Todes” Video Campaign.** As COVID-19 continued, the coalition pivoted from a planned, multi-state “Tode Tour” (short for **nematode**) with in-person field demonstrations to an online, video docuseries called “Let’s Talk Todes,” showing farmers how to actively manage SCN and the research creating future tools. The docuseries was promoted through six-week, digital campaigns targeting farmers during 2020 harvest and after 2021 planting.

**Steady Promotion Drumbeat.** In addition, the coalition issued timely press releases, expert media interviews, a monthly e-newsletter, weekly Facebook and Twitter posts and quarterly updates with the coalition partners.

### 4. EVALUATION

---

**Behavioral outcomes.** In January of 2021, the original quantitative farmer survey was repeated with message recall questions added (n=950). **The survey showed the SCN Coalition moved up to 18% more farmers to adopt practices to actively manage SCN-resistance beyond the established behavioral objectives:**

- 18% increase in farmers using nematode-protectant seed treatments, from 22% to 40% (13% above goal).
- 10% increase in farmers rotating genetic sources of SCN resistance, from 39% to 49% (5% above goal).
- 10% increase in farmers naming Peking as a source of SCN resistance, from 15% to 25% (5% above goal).
- 7% increase in farmers planting SCN resistant soybean varieties, from 59% to 66% (2% above goal).
- 6% increase in farmers rotating non-host crops, from 71% to 77% (1% above goal).

**Message awareness outputs.** 28.1 million impressions by the end of 2021 and high message recall further demonstrate the success of this campaign: Over 76% of all farmers recalled “rotate to non-host crops,” 65% recalled “rotate resistant varieties,” 66% recalled “consider a nematode-protectant seed treatment” and 55% recalled “actively manage SCN,” further demonstrating the success of this campaign battle.