

Developing **BEST** **REMEDIES** for Soybean Diseases



SOYBEAN RESEARCH &
INFORMATION
NETWORK



Soybeans face health threats from top to bottom, all season long, year in and year out. Disease-causing pathogens can attack plant roots, stems and leaves, depending on their ability to infect, plant susceptibility and environmental factors. And they can take a toll alone or with other stressors. With funding from the soybean checkoff, a team of university researchers estimated national economic losses due to soybean diseases from 1996 to 2016 was more than \$95 billion.

Creating the right prescriptions to manage the ever-changing diseases that ail U.S. soybeans is one of the primary objectives of the NCSRP. Researchers address those diseases with consistent or the most potentially significant economic impacts across the North Central region.

TREATING THE TOUGH ONES

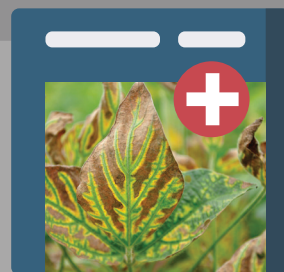
Soybean Cyst Nematode



Soybean cyst nematode (SCN) is an evolving, persistent problem. Current research includes finding ways to increase genetic diversity of SCN resistance in commercial varieties and to determine the most effective rotation practices to preserve known sources of SCN resistance. **The SCN Coalition is creating new tools for the fight** by also understanding other nematodes and diseases influenced by nematodes, such as sudden death syndrome and brown stem rot.

Sudden Death Syndrome

Researchers continue to find strategies to help farmers understand sudden death syndrome (SDS) and make informed best practice decisions. For example, scientists are **investigating management options to ensure resistant cultivars** will be as effective as possible in years when SDS risk is high and are exploring impacts of fungicide and nematicide seed treatments, in-furrow and foliar fungicides on the known interactions between SDS and SCN that cause significant yield losses.



Sclerotinia Stem Rot

The goal of NCSRP research into Sclerotinia stem rot, or white mold, is to develop a modern and highly integrated management control plan. That's because white mold requires a combination of cultural, chemical and biological control practices, including crop rotation with non-host crops, reduced tillage, planting resistant cultivars, modifying the soybean canopy through seeding rate and row spacing and applying in-season chemicals. Research is underway to **maintain fungicide efficacy through improved application timing** with use of the new Sporecaster prediction tool.



Keeping Fungicides in the Medicine Chest

Fungicide resistance is real. To maintain fungicide efficacy, the **Take Action Fungicide Resistance Management Initiative** recommends farmers scout and identify diseases correctly, be prepared for fungicide applications by understanding how environmental conditions affect disease development, use cultural practices like tolerant varieties and crop rotation for alternative control and confirm economic yield potential loss before choosing to apply fungicides.

13 NCSRP MEMBER STATES REPRESENT MORE THAN 355,000 SOYBEAN FARMERS



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The Soybean Research and Information Network (SRIN) is a joint effort of the North Central Soybean Research Program and United Soybean Board. The online resource contains checkoff-funded soybean production challenge research findings with direct links to the respective underlying scientific studies housed in the National Soybean Checkoff Research Database.