MESSENGER-INQUIRER

September 10, 2022

Soybean Cyst Nematode

Soybean cyst nematode causes greater annual yield losses in Kentucky than any other pathogen of soybean. Approximately 80% of soybean fields in the state are infested with some level of SCN. Although aboveground symptoms of stunting and yellowing caused by SCN can occasionally be observed, affected soybean plants generally appear to be healthy. Unfortunately, "healthy-looking" soybean plants that are infected by SCN can still have up to a 30% yield reduction. Sudden death syndrome is known to correlate with the presence of SCN in the soil and this year a lot of sudden death syndrome occurred across our area. This is the fall to test for SCN, especially in fields which expressed sudden death syndrome to determine if damaging levels of SCN reside in your fields.

Management has gotten more difficult in the last few years because SCN populations have adapted to the use of SCN-resistant soybean varieties. The primary source of SCN resistance used by commercial soybean breeding programs came from a soybean germplasm line known as "PI 88788". This source of resistance was highly effective in managing SCN for several years, but prolific use of soybean varieties with the PI 88788 background created SCN populations that are able to overcome this source of resistance. A University of Kentucky SCN survey discovered the PI 88788 source of SCN resistance was not very effective against

approximately 60% of the SCN populations in Kentucky, making management of this pathogen much more complex than before.

As complex as it is, management of SCN is possible, and is important for maintaining and increasing soybean yields. Below are the main steps for managing SCN. Test your fields to know the number of SCN eggs in your field. The best times to sample for SCN in your fields is in the fall soon after harvest or before planting in the spring. Sample the field in the same pattern as would be done for soil nutrient testing, but soil samples should be collected in a soil depth down to 8 inches, deeper than the 4-inch depth we recommend for soil nutrient test samples. Two sample buckets will be needed if soil nutrient testing in the same field visit. Although the University of Kentucky does not currently have an active SCN Laboratory, samples can be sent either to the University of Illinois Plant Clinic through the Extension office or to Waters Agricultural Labs.

Rotate resistant varieties; if varieties are available that utilize sources of SCN resistance other than PI 88788, such as Peking or Hartwig. Most of the soybean varieties adapted for planting in Kentucky utilize only the PI 88788 source of resistance, however it is still important to rotate to different resistant soybean varieties, even though they are utilizing the same source of resistance. SCN is good at adaptation, so switching soybean varieties will help.

Rotate to non-host crops. Rotating fields to a non-host crop, such as corn or grain sorghum, will help reduce SCN populations in a field. Wheat is another non-host crop that may help lower SCN populations by having it in the rotation. Several years ago, Dr. Don Hershman with the University of Kentucky evaluated the effect of wheat residue on SCN populations. His research found that planting soybeans into fields with standing wheat stubble reduced SCN populations at the end of the growing season.

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Consider using a nematode-protectant seed treatment. Several nematode-protectant seed treatment products are now available on the market. Although the effects of these seed treatments have not always been consistent in field research trials, they are additional tools that can be used along with resistant varieties and crop rotation to help manage this important pathogen.

A multi-state initiative funded by the Soybean Checkoff Program known as the SCN Coalition is helping to promote awareness of the damage caused by SCN and the importance in managing this pathogen. More information about the SCN Coalition is available on their website at https://www.thescncoalition.com/.

Think Safety

Harvest is about to begin. Please use caution and be an example of safety to family farming partners and employees during harvest. Only work in teams of two or more if you must enter grain bins. Don't trust working beneath hydraulic suspended loads that are not locked up. Use everything at your disposal to increase your visibility on the road when moving between farms.