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Cooperative Extension Service

Farm Update

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Soybean Cyst Nematode Management

Soybean cyst nematode causes more yield loss in Kentucky soybeans each year than any other pathogen. An ongoing SCN field survey that began in 2019 shows that approximately 75% of Kentucky fields are infested with SCN. Dr Carl Bradley, Plant Pathology Extension Specialist based at the UK Research and Education Center at Princeton, continues to stress the importance of this pest and discusses what you should know about SCN and how to manage it in the following article.

Risk of yield loss due to SCN can be estimated by the initial SCN egg count at the beginning of the season, where 0-499 eggs/100 cm3 (cubic centimeter) of soil is a low risk of yield loss, 500-1,999 eggs/100 cm3 of soil is a moderate risk, 2,000-9,999 eggs/100 cm3 of soil is a high risk, and at least 10,000 eggs/100 cm3 soil is a very high risk. Since 2019, 718 soil samples from over 45 Kentucky counties have been evaluated. Nearly 40% of the fields surveyed have populations that will likely cause yield loss. Although above-ground symptoms of stunting and yellowing caused by SCN can occasionally be observed, affected soybean plants typically appear to be healthy. Unfortunately, “healthy-looking” soybean plants that are infected by SCN can still have up to a 30% yield reduction.

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Management of SCN has gotten much more complicated in the last few years. Many SCN field 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 has selected for SCN populations that are able to overcome this source of resistance. In the 2006-2007 University of Kentucky SCN survey, the PI 88788 source of SCN resistance was not very effective against approximately 60% of the SCN populations in Kentucky. The current ongoing survey results have shown that the percentage of SCN populations in Kentucky in which the PI 88788 source of resistance is not very effective against has grown to at least 80%.

Test your fields to know the number of SCN eggs in your field. The best times to sample for SCN in your fields are in the fall or spring (before planting). The Kentucky Soybean Board is continuing to sponsor free SCN testing for Kentucky farmers. Samples must be submitted through the county Extension office.

Rotate resistant varieties. If varieties are available that utilize sources of SCN resistance other than PI 88788, such as Peking or Hartwig, then rotate the source of resistance every time you plant soybean in a field. Unfortunately, nearly all the soybean varieties adapted for planting in Kentucky utilize only the PI 88788 source of resistance. However, varieties that utilize Peking as a source of resistance are starting to become available in varieties in maturity groups grown in Kentucky. In addition, if Peking varieties are not available for production on your farm, then it is still important to rotate to different resistant soybean varieties, even though they

may be utilizing the same PI88788 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 fields. Wheat is another non-host crop that may help lower SCN populations by including it in the rotation.

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 of managing this pathogen. More information about the SCN Coalition is available on their website.