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Cooperative Extension Service

Farm Update

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AGRICULTURE & NATURAL RESOURCES EDUCATION
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Soybean Cyst Nematode Management

The soybean cyst nematode (SCN) causes greater annual yield losses in Kentucky than any other pathogen of soybean. Results from an ongoing SCN survey initiated in 2019 show that approximately 80% of Kentucky fields are infested with SCN, and nearly 40% of those infested have populations that may cause yield loss. Although above-ground symptoms (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.

Management of SCN has become much more complex in the last few years, since 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 continuous use of soybean varieties with the PI 88788 background has led to SCN populations that can 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, making management

of this pathogen much more complex than before. Preliminary results from the current on-going survey 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%.

As complex as it is, management of SCN is still doable, and is important for maintaining and increasing soybean yields.

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 in the spring before planting. Rotate resistant varieties. If varieties are available that contain 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 only have 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 fields. 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.

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.

Free Soybean Cyst Nematode Sampling

The Kentucky Soybean Board is continuing a program for free soybean cyst nematode testing for Kentucky soybean farmers. Use a soil probe to collect soil 6 to 8 inches deep from at least 20 locations within the sampling area and follow a "zig-zag" pattern when sampling. If you sample a field that has most recently been in soybean, collect the soil cores from the soybean root zone area. Once the sub-samples have been collected, mix the contents in a bucket and immediately place at least one pint in a soil testing sample bag or in a double-plastic bag and then seal the bag. Deliver samples to the Extension office and we will send them to the University of Illinois Plant Clinic.