

6. How do I sample soil for SCN?

Once you determine that a field is infested with SCN, soil samples do not need to be collected each year. Soil samples from these fields should be collected before SCN-susceptible varieties are grown, or once every three years of soybean if resistant varieties are grown in a rotation.

Although soil samples for SCN may be collected at any time, the ideal time to sample is as close to soybean harvest as possible. SCN numbers tend to be highest when the plants are almost mature to shortly after harvest.

Sampling near harvest allows sufficient time for the nematode laboratory to process the sample and provides you with information and enough time for selecting a variety or choosing alternative crops for the next year.

Soil samples collected for soil fertility analysis can be split into:

- One for fertility
- One for SCN analysis

However, remember to place the nematode sample in a plastic bag, not in a paper soil test bag, and keep the sample out of direct sunlight!

Large fields may be subdivided into sections and a single composite sample from the different sections submitted for analysis. If the soybean crop row is identifiable, place the soil probe within 2 inches of the row when collecting the soil core. Placement of the soil probe is not important for samples collected from cultivated fields, fields where soybeans were drilled or fields in which nonhost crops had been grown.

The importance of getting a representative soil sample of the area under consideration (whole field, section of field, area where plants show symptoms of crop injury) cannot be overemphasized.

How to deal with hot spots

Soil samples should be collected from the area between the most severely damaged plants and the “healthy” plants. Do not collect the sample from

the center of the hot spot because these plants usually have severely stunted root systems that cannot support SCN. A sample collected from dead or severely stunted plants may show that SCN numbers are low when in fact there are high numbers present in the areas where plants appear “healthy.”

How to sample fields that have never been checked for SCN

The first time a field is checked for SCN, sample areas where SCN is likely to establish first. This includes near a field entrance, along fence lines, areas that have been flooded, areas where weed control isn’t quite as good, areas of high soil pH (greater than 7) or areas where the yield was low the last time soybeans were grown.

Nematode diagnostic laboratories usually have special forms to be submitted with soil samples. Even if such a form is not available when you sample, you should provide the following information:

- Your name, address and phone number
- The location of the field
- The date when the field was sampled
- The number of acres represented by the sample
- Crop history (previous two to four years)
- The name or number of the field
- Pesticide applications for current and previous years

Results

Laboratories may report SCN sample results as the number of cysts, eggs or juveniles per 100, 250 or 500 cm³ of soil. Cyst and egg counts generally correlate well and both are indicators of the relative amount of SCN present in the soil, but juveniles typically are short-lived and their numbers are not as informative as numbers of cysts or eggs because they are subject to different hatching behaviors at different times of the year and under different soil conditions. When comparing SCN soil sample results from different laboratories or comparing results to published thresholds or research results, be sure the same volumes of soil and the same SCN life stages are being compared. A result of 200 cysts per 100 cm³ soil is a much higher SCN population density than 1,000 eggs per 250 cm³ of soil because each cyst may contain 200 or more eggs and 250 cm³ is 2½ times more soil than 100 cm³.

Procedure for collecting soil samples

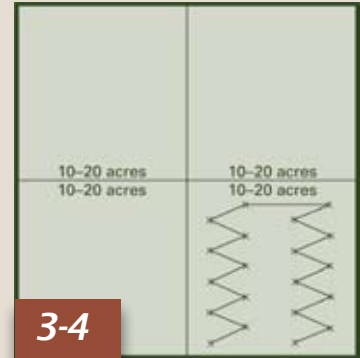
1. Use a cylindrical soil probe to collect soil samples.
2. Collect soil cores to a depth of 6 to 8 inches.
3. Collect 10 to 20 soil cores in a zig-zag or “W” pattern across the entire area to be sampled.
4. Collect soil cores from areas of similar soil texture and cropping history. If different soil textures occur in the same field, sample them separately.
5. Bulk the cores in a container (bucket) and mix.
6. Place approximately one pint of mixed soil in a plastic bag and label the outside of the bag with a permanent marker.
7. Store the sample away from sunlight in a cool area until it is shipped to the laboratory.



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Soil Probe

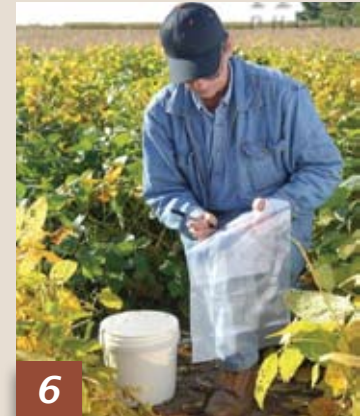
A 1-inch diameter cylindrical soil probe is ideal for soil sampling for SCN. (UIUC-ACES-ITCS: Riecks)



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Note: If you are sampling on a 2.4 or 2.5-acre grid, you can collect two extra cores from every eight or nine grid cells for SCN analysis.

Fall Sampling

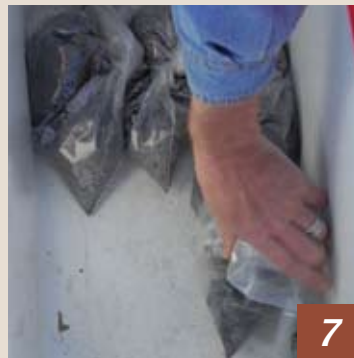
The ideal time to sample for SCN is in the fall, shortly before or after soybean harvest. (UIUC-ACES-ITCS: Riecks)

Mixing Cores

Mix soil cores in a bucket, and place about 1 quart of the mixed soil in a plastic bag labeled with a permanent marker. (UIUC-ACES-ITCS: Riecks)

Important

The quality and condition of the sample determines the reliability of the results.



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Place soil samples in a cooler to protect them from overheating and evaporation. (UIUC-ACES-ITCS: Riecks)



Don't allow soil samples to sit out in the sun before being transported to a lab. (UIUC-ACES-ITCS: Riecks)