

SAMPLING INSTRUCTIONS FOR SCN EGG COUNT

When sampling for SCN management purposes, take samples to represent the top 8 inches of soil directly at the root zone in the crop row. Soil should be collected over the entire field. Large fields should be subdivided into 10 acre sections. Collect 10 to 20 soil subsamples per section in a zig-zag pattern along the rows using a soil probe or shovel (Figure 1). Mix subsamples together, and send **one pint-sized** composite sample from each section to the laboratory.

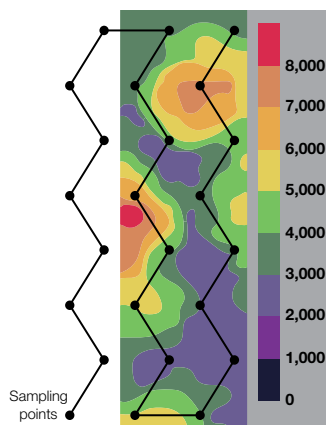


Figure 1. SCN is typically not evenly distributed throughout a field. Therefore, the zig-zag sampling strategy shown below is used to collect representative soil samples. Red = high levels of SCN; Blue = low levels

When sampling for diagnostic purposes (i.e., is SCN present), collect soil from either:

- The margins of the area where plants are showing symptoms/declining, and/or
- Directly at the root zone.
- Where the SCN is most likely to be introduced into a field such as field entrances, areas that flood, fencerows or places where waterfowl congregate.

SAMPLING INSTRUCTIONS FOR HG TYPE TEST

Soil samples for an HG type test should be collected according to guidelines for soil sampling for an SCN egg count. However, at least 40,000 eggs are needed to set-up the HG test. Therefore, a **one gallon-sized** soil sample should be sent to the laboratory. If an insufficient number of SCN eggs is present in the submitted sample, the SCN population will be increased on a susceptible soybean host in the greenhouse for one month to generate enough eggs for the test. For soil submitted November through April, this step is required to ensure a uniform, meaningful HG test. Soil submitted should be from fields where SCN-resistant soybeans have been grown, the SCN egg counts are increasing, and the field is highly infested. Our HG type test includes the indicator lines Pickett, PI 548402 (Peking), PI 88788, PI 90763, and PI 437654. Results are reported as both HG type and race.

WHEN TO SAMPLE FOR SCN

Soybean roots can be carefully dug up and examined for the presence of cysts throughout the growing season. The best time of year to take soil samples for SCN is in the fall right after harvest or before soybeans are planted the following spring. Nematode levels are highest following a soybean crop and at the end of the season. High population levels will increase the chance of detecting the nematodes in your field.

SAMPLING INSTRUCTIONS FOR OTHER NEMATODES

We also test soil and plant samples qualitatively and quantitatively for the presence of other plant-parasitic nematodes. Follow the sampling guidelines below to collect a soil sample. Check the box for a plant-parasitic nematode identification on the sample submission form.

Sampling instructions for specific plant types

- When sampling fields in row crops, take samples to represent the top 8 inches of soil. For pastures, lawns, and other others in sod, take samples to represent the top 5 inches of soil. For shrubs and trees, call the laboratory for instructions.
- When possible, sample directly in the root zone. You can also sample the margins of areas where plants are showing symptoms or declining.
- Roots of declining plants can also be submitted to determine if any plant-parasitic nematodes are in them.

When to sample for specific plant-parasitic nematodes

- Population levels are highest at the end of the growing season.
- Nematode population levels decrease when host plants are absent, which makes detection difficult and unreliable as a predictor of problems in the next growing season.

Root-knot nematodes:

- Look for galls or “knots” on the roots at the end of the season, which is an indicator of root-knot nematode presence.
- Sample soil in the root-zone of plants at the end of the growing season before plants senesce.

Golf green nematodes:

- Nematode levels are highest when the plants are under stress, typically July-August.
- Using a cup cutter or soil probe, take a soil sample to a depth of 4-5 inches.

Note: The lab checks only for presence or absence of certain plant-parasitic nematodes.

Pinewood nematodes:

- Sample branches greater than one inch in diameter or the tree trunk of symptomatic trees.

Foliar nematodes:

- Submit symptomatic foliage.

QUARANTINE SAMPLES

Please contact the lab at 573-884-9118 for information on sampling procedures and specific instructions. Sampling procedures will change depending on host and plant-parasitic nematode.

CARE OF SOIL AND PLANT TISSUE SAMPLES

Proper collection and care of samples is extremely important. Take samples when soil is moist. Put samples in plastic bags, with the label on the outside. Do not let samples dry out! Nematodes are sensitive to heat. Keep samples in a cool, dark place until they can be mailed. Do not leave samples in the sun or other areas of high temperature.

PACKAGING AND MAILING

1. Fill out the sample submission form as completely as possible.
2. Label the sample bags with the submitter's name and sample ID designation given on the sample submission form.
3. Place sample and submission form in a cardboard mailing box.
4. Mail samples to SCN Diagnostics:

SCN Diagnostics

1721 East Campus Loop
University of Missouri
Columbia, MO 65211-5315

For any questions, please call 573-884-9118 or send an email to scndiagnostics@missouri.edu

Figure 2. Soil texture triangle.

Indicate soil type as indicated by the following table.

Soil Type Code:

Sandy	1
Sandy loam	2
Silt loam	3
Clay loam	4
Clay	5

