

NEMATODES SAMPLES

Remember, the accuracy of the results is directly related to the quality of the sample.

1. The sample should be prepared from a mixture of 10 to 20 "cores" of soil. Cores are most easily taken with a soilsampling tube, auger, or trowel. A shovel may be used by cutting a 3 cm thick slice of soil through the soil profile, then collecting a 3 to 6 cm vertical band from the slice. It is often best to discard the top 3 cm from each core since nematode numbers may be very low there.
2. Where to sample. Because nematodes feed on plant roots, always sample from among roots of the plants for which diagnosis is needed. Sample only when soil moisture is appropriate for working the field; avoid extremely dry or wet soil conditions. For the safety of lab personnel who handle the soil, Do Not Sample for at Least 4 Weeks after a Nematicide Has Been Applied to give the nematicide sufficient time to dissipate.

Specific directions for collecting samples from different types of symptomatic plants are as follows:

- a. **Annual Crops** (most vegetables, annual ornamentals, and field crops) – take soil from root zones of 10-20 affected plants that are not yet dead. Include "feeder" or fine roots from several of them. Remove the surface of soil before taking each core 15-20 cm deep.
- b. **Fruit and Nut Trees, Perennial Shrubs and Trees** – if many plants are affected, include cores from several of them in the sample. If only one or a few are affected, take several cores from around each plant. Use a spade or shovel to dig within the "drip-line" (the area covered by the branches) to find fine feeder roots. Each "core" should consist of a few fine roots and soil from immediately around them. Discard roots and soil from the surface inch. On most trees and shrubs cores 16 cm deep should be sufficient. However, for burrowing nematode of citrus, collect roots and soil from below 30 cm deep.
- c. **Turfgrasses** - collect 10 to 20 cores from areas of declining but not yet dead turf. Collect cores 7-12 cm deep near the desired plant species, avoiding bare spots and weeds. The sample must consist of mostly soil with a few roots; discard foliage.

Advisory or predictive samples are taken to predict the risk of nematode injury to a crop to be planted, or later on in the season for turfgrasses and other perennial crops. For annual crops nematodes are most numerous and easiest to detect near the end of a growing season. Therefore, sample results are generally more meaningful when the samples are collected immediately following the previous season's crop rather than immediately preceding the crop to be planted. Predictive samples should be representative of the entire sampling area. Collect cores in a regular pattern over the area. One sample should represent no more than 4 Ha for relatively low-value crops such as corn and soybeans, and no more than 2.5 Ha for higher valued crops such as vegetables and tobacco. Areas which have different soil

types or which were planted to different crops (or varieties) during the past season should be sampled separately.

3. Place all the cores from each sampled area into a plastic bag. If more than one area is to be sampled, multiple bags will be required. The approximate soil volume for a properly collected sample should be 500 to 1000 grams. Include as many fine roots as possible (up to ½ cup) mixed in with the soil sample. Seal the sample in the bag with a twist tie. The soil should be handled carefully because rough handling will crush nematodes living among soil particles.
4. Label the outside of the bag with a name and sample number or other identification so that the lab cannot confuse your sample with that of someone else. Label the bag by writing directly on it with a permanent black felt-tip marker or with a permanent pen or pencil on masking tape stuck to the bag. The Nematode Assay Form downloaded in the website should be enclosed in the box with the sample or sent by email; do not use it to label the bag. Do not place a paper label in the bag with the soil - it may decompose rapidly and be unreadable in a few days.
5. Handling and Submission. Nematodes will die from overheating, freezing, or drying. Do not leave samples exposed to sunlight, or carry them in a hot car trunk or on the dashboard. Do not add water to the sample, even if it seems dry to you. Just package and send it so we get it in the same condition as when you collected it. If nematodes are killed in handling, they cannot be recovered in the laboratory, and you will receive false results.
6. Complete the Nematode Assay Form with All Requested Information. Print or write clearly. Be sure that your sample identification on the bag and the information on the form are correctly matched. Complete information about cropping history and plans, symptoms, etc. will help us make a more accurate diagnosis and recommendation. Accurate identification of the plant species (and variety, if possible) for which a diagnosis is needed is absolutely necessary to make a recommendation.
7. Mail, ship, or deliver samples to the Nematode Assay Laboratory as quickly as possible. The mailing address will be printed on the sample box and on the Nematode Assay Form. For those who prefer to deliver samples to the Main offices

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Please deliver samples between 8:30 and 13:30 h.

8. Services: We will determine the quantity of each kind of plant parasitic nematode recovered from the sample. These results and the appropriate recommendations will be written on the Nematode Assay Form. You will be sent a copy of the Assay Form no later than 5 working days after receipt of the sample in the laboratory. In some instances, identifying nematodes to species is necessary to select the best management program. We will try to identify pests to species when necessary and possible. This may require 2-3 months additional time to culture the organism in

question. When such a delay is required, the normal report will be returned within 5 days after sample receipt; a supplementary report will be provided when final results are available.