

## Collecting and Submitting Soil Samples for Nematode Analysis

Most nematodes are too small or transparent to be seen with the unaided eye but, under certain conditions, these microscopic organisms can build up to population levels that cause economic or aesthetic damage to plants. Most common effects of nematode damage are stunting, chlorosis (yellowing), nutrient deficiencies, wilting, root abnormalities, and reduced yield, but nematode damage cannot be ascertained merely from the generalized plant symptoms in the field. To correctly diagnose nematode damage, trained personnel are needed to extract from root or soil samples, identify and count the nematodes associated with the injured plants.

### Collecting Samples

**1. Where to sample.** Sample in locations in which plants do not grow properly (considering weather, soil fertility, and other conditions), could be an area of nematode damage. Such areas are often circular to oval in outline (Right), and occasionally in row crops poor growth may follow the rows. Soil samples therefore, should be taken from around the roots of plants that are not growing properly.

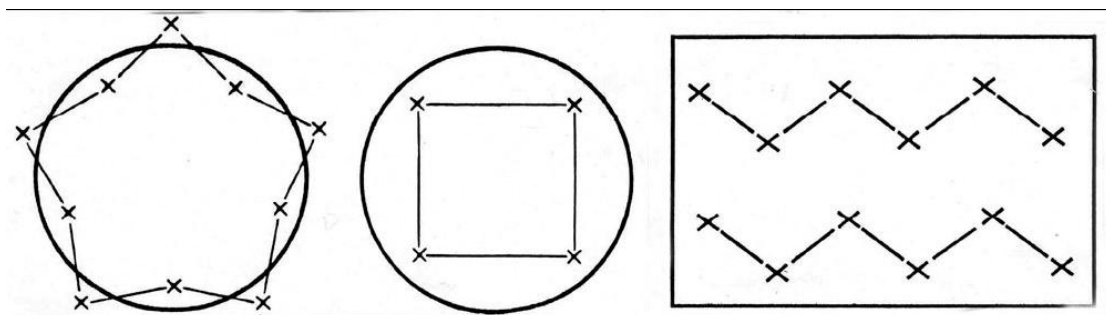


### 2. When to sample.

Soil samples can be collected at any time of year, as long as the sampling tool can be inserted into the ground to the proper depth. Avoid collecting excessively wet or dry soils, as it is difficult to prepare samples for analysis under these conditions. It is also good to sample before planting any crop as this can determine the crop to be planted in the following season.

### 3. How to sample.

Whenever possible, collect soil from the root zone (10-15 cm depth) of growing plants, where plant-feeding nematodes will be concentrated. The general sampling patterns are as shown in below. At each sampling point, scrap off the top 5 cm of soil where temperature and moisture extremes limit nematode populations. It is also advisable to include feeder roots in the sample, since many nematodes live within plant roots.



Sampling patterns. X = one subsample. Left, Star pattern for sampling from a damaged area. Center, circle pattern for sampling a shrub in an orchard. Right. Zig-zag pattern for sampling a fallow field or one with no obvious symptoms of the current crop.

### 4. Packaging soil samples.

Soil samples for nematode analysis must be handled delicately as nematodes are living animals and require moisture for survival. To be recovered and identified, they must reach the laboratory alive. All precautions must be taken to prevent the samples from drying out. Deliver or mail the package as soon as possible after collection.