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The Crop Doctor

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Plant Pathology and Nematology

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Selecting Samples For Laboratory Diagnosis

If the problem cannot be identified in the field, select a representative sample and send it to the Lab. When possible, send plants that are obviously infected but not completely dead. Dead plants are often so overrun with secondary organisms that the pathogens cannot be identified. The best samples are those that have the margin of death, the area between affected and unaffected. This is usually where we find pathogens most active.

Whole plants are best but this is often impossible. Large samples are helpful as smaller or less complete samples often do not show a sufficient range of symptoms to allow an accurate identification. We prefer soil, roots, and tissues be sent when possible. Root crown samples should include the cambium layer (just under the bark) and not be so large as to kill the plant.

Dig out the plant; do not pull it out of the ground. Roots and crowns are often the site of pathogenic infection and can be damaged or lost if the plant is pulled out. Nematode samples should be no less than a cup of soil and roots (more is really better here) and taken from the root zone. Do not rinse the plant or roots, do not shake off the soil from the root ball, and do not add ANY water or wet paper towels to the sample. Samples should be put in a sealed plastic bag with a dry paper towel inside which will preserve humidity but not allow the sample to rot in transit. Roots and soil should be bagged together to buffer them from heat and drying, but bagged separately from tissue to prevent cross-contamination.

Samples should be kept cool, and sent as soon as possible by overnight carrier or hand delivered. Fed-Ex is best and fastest in our opinion. Never use the postal service (snail city!). Include a detailed note about the problem, when you first noticed it, cultural conditions and changes that may have contributed (construction, watering, weather, treatments, etc.), your business card and fax number and other contact information.

Be patient. Samples average 7-10 days, and you will have the results the same day we do by fax (that way we can bill you!). If the time frame is extended beyond the 10 days, we will call you. Please call with questions or additional information you may have thought of after the sample was sent. The more information you can give us, the better our chances of a diagnosis and a resolution of your problem. Good information and proper sampling is key; help us help your plant by following these instructions when possible.