How to Collect and Package Plant Disease Specimens for Diagnosis

MISSISSIPPI STATE UNIVERSITY EXTENSION

The accurate diagnosis of specific plant diseases depends upon several factors. The specimen must arrive at the laboratory in a fresh condition, but, just as important, it also must be representative of the symptoms expressed in the field, lawn, or yard. Also, the complete description of the area, its history of cultural or chemical practices, and other facts pertinent to the disease occurrence must be supplied in order to facilitate complete diagnosis of the cause. When specimens arrive in a crushed, wilted condition, or if they are in advanced stages of decay, diagnosis is often difficult. If nonrepresentative or incomplete specimens (roots, stems, and soil) are accompanied by insufficient information, accurate diagnosis becomes impossible.

Leaf Spots

1. Collect leaves showing all stages of infection. Make sure compound leaves are collected with leaflets attached to petioles. Also include twig segments with leaf samples.
2. Use the plant press to transport from field to office. Once ready to ship (within 24 hours), place the leaves between heavy paper or thin cardboard and place them in an envelope. They will arrive in a pressed state, making processing easier.

Galls or Cankers

1. Select several galls along with small portions of twigs or limbs if possible. Include intact leaves if possible.
2. Make sure you include healthy portions of the plant.

Wilts

1. Send whole plants when possible. Collect several plants, showing all stages of the disease.
2. Dig the plants; do not pull them up. Include a small amount of soil with the root system. Keep soil and aboveground plant parts separate by placing roots in a plastic bag and sealing with a rubber band. Do not add moisture to the root sample.
3. If nematodes are suspected, collect approximately 1 pint of soil from a depth of 6–8 inches. Place the sample in a *Nematode Soil Sample Bag* (Form 591) or a sealable quart-size bag. Keep soil samples cool and out of direct sunlight. Do not let samples dry out, but do not add water. Fill out the *Nematode Sample Submission Form* (Form 448), and include it with the labeled sample.

Fruits and Fleshy Organs

1. Do not send specimens of advanced stages of fruit rot. Select plants showing early to intermediate symptoms.
2. Keep specimens cool until shipped. Wrap several sheets of dry paper towel around the fruit. Do not add moisture. Pack specimens so that they are not crushed during shipping.

Turfgrass Samples

Turfgrass samples should be taken from the edge of the affected area and include both dying and healthy plants. Collect several 3-by-3-inch squares of sod with at least 1 inch of soil. Place these in sealed plastic bags.

Packaging and Mailing

Samples submitted to the diagnostic lab should be accompanied by a check made payable to the MSU Extension Service. Fees are $10 per sample (in-state) for plant disease testing and $11 per sample (in-state) for nematode testing. Fees are subject to change. Please visit the Extension Plant Diagnostic Lab online at ***extension.msstate.edu/lab*** for current fees, including fees for out-of-state samples.

1. When mailing plant specimens for disease diagnosis, wrap a dry paper towel around the specimen and place it in a zipper-seal plastic bag. The purpose of the paper towel is to absorb any moisture released from the plant tissue, thus avoiding bacterial soft rot before it arrives in the laboratory.
2. Use regular mailing envelopes whenever possible to save money on postal fees.
3. Mail early in the week, and be sure to mark the package "First Class." This will allow us to get the sample as fast as possible and it will be less likely to spend the weekend in the post office.
4. Fill out the *Plant Disease Sample Submission Form* (Form 1139) as completely as possible. The extra 5 or 10 minutes it might take to fill out the form could save us an hour or more of "barking up the wrong tree" when examining the specimen in the lab.
5. If sending more than one sample, please be sure to properly label samples and accompanying forms.
6. Make sure packages are wrapped in heavy paper. Mail samples to:

   Extension Plant Diagnostic Lab
   190 Bost North, Room 9
   *Box 9612
   Mississippi State, MS 39762-9612

   *Note: Do not include the box number for carriers that do not ship to box numbers.

Additional Resources

- *Nematode Soil Sample Bag* (Form 591), available from your local county MSU Extension office.
- *Nematode Sample Submission Form* (Form 448), available at ***http://extension.msstate.edu/publications/forms/nematode-soil-sample-form***
- *Plant Disease Sample Submission Form* (Form 1139), available at ***http://extension.msstate.edu/publications/forms/plant-disease-sample-submission-form***

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