

## Using a Plant Diagnostic Lab

The best way to identify insects, plants and plant diseases, or diagnose plant and pest problems, is to send a sample to a diagnostic laboratory. The National Plant Diagnostic Network website ([www.npdn.org](http://www.npdn.org)) lists diagnostic laboratories by state and region. Contact individual laboratories for specific submission and fee information (see page 45-46).

To ensure an accurate diagnosis, it's important to collect and ship your specimens properly. Here are a few guidelines for collecting and shipping specimens to a diagnostic lab.

1. Collect fresh specimens. Send a generous amount of material, if available.
2. Ship specimens in a crush-proof container immediately after collecting. If holdover periods are encountered, keep specimen cool. Mail packages to arrive on weekdays.
3. Incomplete information or poorly selected specimens may result in an inaccurate diagnosis or inappropriate control recommendations. Badly damaged specimens are often unidentifiable and additional sample requests can cause delays.

## Submitting Plant Specimens for Disease/Injury Diagnosis

**Herbaceous Plants.** For generally declining, wilting, or dying plants, send several whole plants showing a range of symptoms (early through more advanced) with roots and adjacent soil intact. Dig up the plants carefully. Place roots and surrounding soil in a plastic bag and fasten it to the base of stem with a twist tie or string. *Do not* add water or moist paper towels. Soil and attached roots of smaller specimens may also be secured in a double layer of heavy-duty aluminum foil pressed around the root system. Wrap the plants in dry newspaper and place in a crush-proof container for shipment.

**Leaves/fruit/tubers.** When localized infections (such as leaf spots or fruit rots) are suspected, send specimens representing early and moderate stages of disease. Press leaves flat between dry paper towels, newspaper, or cardboard. Wrap fruits or tubers in dry newspaper. Place in a crush-proof container for shipment.

## Submitting Insect Specimens

Package insects carefully so they aren't damaged when they arrive at the lab. Separate and label the specimens if you send more than one type in the same package. Provide the appropriate information for each specimen.

**Tiny or Soft-bodied Specimens.** Submit such specimens (aphids, mites, thrips, caterpillars, grubs, spiders) in a small, leak-proof bottle or vial of 70 percent alcohol or hand sanitizer. Rubbing alcohol (isopropyl) is suitable and readily available. Do not submit insects in water, formaldehyde, or without alcohol or they will ferment and decompose. Package carefully to assure vials do not break in shipment. Small insects found on leaves can also be submitted on the plant material. Wrap several leaves in dry newspaper, and then seal in a plastic bag to prevent insects from escaping.

**Hard-bodied Specimens.** Submit such specimens (flies, grasshoppers, cockroaches, wasps, butterflies, beetles) dry in a crush-proof container. *Do not* tape insects to paper or place them loose in envelopes.

## Submitting Samples for Nematode Analysis

If you suspect a nematode problem, contact clinics for state-specific submission information (see below).

In general nematode identification requires collection of at least one quart of soil from the root zone of affected plants. Include roots if the plants are actively growing.

Place the entire sample in a plastic bag. *Do not* add water or allow it to dry out. Protect the sample from extreme heat (for example, don't leave samples inside a parked vehicle in direct sunlight). It is often helpful to collect a second, similar sample from a nearby area where plant growth appears normal.

Attach a label, note, or tag identifying the sample to the outside of each bag or package.

Selected university diagnostic laboratories and other laboratory services are provided below.

## Selected University Laboratory Services

### Illinois

Univeristy of Illinois Plant Clinic  
S-417 Turner Hall  
1102 S. Goodwin Avenue  
University of Illinois  
Urbana, Illinois 61801  
(217) 333-0519

[web.extension.illinois.edu/plantclinic](http://web.extension.illinois.edu/plantclinic)  
[www.facebook.com/UofIPlantClinic](https://www.facebook.com/UofIPlantClinic)

Contact:  
Suzanne Bissonnette  
[sbissonn@illinois.edu](mailto:sbissonn@illinois.edu)  
(217) 333-2478

### Indiana

Plant and Pest Diagnostic Laboratory  
Purdue University  
LSPS 101  
915 W. State Street  
West Lafayette, IN 47907-2054  
(765) 494-7071  
Fax: (765) 494-3958

[ppdl.purdue.edu](http://ppdl.purdue.edu)

Contacts:  
Tom Creswell  
[creswell@purdue.edu](mailto:creswell@purdue.edu)

Gail Ruhl  
[ruhlg@purdue.edu](mailto:ruhlg@purdue.edu)

Nematology Laboratory  
Department of Entomology  
Purdue University  
901 W. State Street  
West Lafayette, IN 47907-2089

[extension.entm.purdue.edu/nematology/services.html](http://extension.entm.purdue.edu/nematology/services.html)

Contact:  
Jamal Faghihi  
(765) 494-5901  
[jamal@purdue.edu](mailto:jamal@purdue.edu)

Water Quality (microbiology)  
Indiana State Department of Health Laboratories  
550 W 16th Street, Suite B  
Indianapolis, IN 46202  
(317) 921-5500

ISDH lists private laboratories certified for drinking water microbiology at [www.in.gov/isdh/22450.htm](http://www.in.gov/isdh/22450.htm)

Purdue Agronomy Extension lists labs that participate in proficiency testing programs for soil, plant tissue, and manure testing at [ag.purdue.edu/agry/extension/Pages/soil\\_testing.aspx](http://ag.purdue.edu/agry/extension/Pages/soil_testing.aspx)

### Iowa

Iowa State University Plant and Insect Diagnostic Clinic  
Iowa State University  
Ames, Iowa  
(515) 294-0581  
Fax: (515) 294-9420

[clinic.ipm.iastate.edu](http://clinic.ipm.iastate.edu)

Clinic Services and Information:  
[www.ipm.iastate.edu/ipm/info/contact](http://www.ipm.iastate.edu/ipm/info/contact)

Contact:  
Laura Jesse Iles and Lina Rodriguez Salamanca  
[pidc@iastate.edu](mailto:pidc@iastate.edu)

Soil and Plant Analysis Laboratory  
G501 Agronomy Hall  
Iowa State University  
Ames, Iowa 50011-1010  
(515) 294-3076  
Fax: (515) 294-5567  
[soiltest@iastate.edu](mailto:soiltest@iastate.edu)

The Iowa Department of Agriculture and Land Stewardship lists private certified soil testing laboratories at [www.iowaagriculture.gov/feedAndFertilizer/pdfs/2015/CertLabsafterQ42015.pdf](http://www.iowaagriculture.gov/feedAndFertilizer/pdfs/2015/CertLabsafterQ42015.pdf)

Water Quality (microbiology)  
State Hygienic Laboratory  
Client Services  
2490 Crosspark Road  
Coralville, IA 52241-4721  
(319) 335-4500 or (800) 421-4692

Iowa State University Food Science and Human Nutrition lists private water quality laboratories at [www.fshn.hs.iastate.edu/wp-content/uploads/2012/05/Iowa-Water-Testing-Labs.pdf](http://www.fshn.hs.iastate.edu/wp-content/uploads/2012/05/Iowa-Water-Testing-Labs.pdf)

## Kansas

Plant Disease Diagnostic Lab  
Pathology 1712 Claflin Road  
4032 Throckmorton Hall  
Kansas State University  
Manhattan, KS 66506-5504  
(785) 532-5810  
Fax: (785) 532-5692

[www.plantpath.k-state.edu/extension/diagnostic-lab](http://www.plantpath.k-state.edu/extension/diagnostic-lab)

Contact:  
Judith O'Mara  
[jomara@ksu.edu](mailto:jomara@ksu.edu)

## Michigan

Michigan State University Diagnostic Services  
578 Wilson Road., Room. 107  
East Lansing, MI 48824-6469  
(517) 355-4536  
Fax: (517) 432-0899

[www.pestid.msu.edu](http://www.pestid.msu.edu)

Contact for general questions:  
(517) 432-0988  
[pestid@msu.edu](mailto:pestid@msu.edu)

MSU Soil and Plant Nutrient Laboratory  
Department of Plant, Soil and Microbial Sciences  
Plant and Soil Sciences Building  
1066 Bogue Street, Room A81  
East Lansing, Michigan 48824-1325  
(517) 355-0218

[www.spnl.msu.edu](http://www.spnl.msu.edu)

Contact:  
Jon Dahl  
[dahl@msu.edu](mailto:dahl@msu.edu)

## Minnesota

Plant Disease Clinic  
Department of Plant Pathology  
495 Borlaug Hall  
1991 Upper Buford Circle  
University of Minnesota  
St. Paul, MN 55108  
(612) 625-1275  
Fax: (612) 625-9728

[pdc.umn.edu](http://pdc.umn.edu)

Contact:  
Brett Arenz  
[aren0058@umn.edu](mailto:aren0058@umn.edu)

Soil testing laboratory  
College of Food, Agricultural and Natural Resource  
Sciences  
Room 135, Crops Research Building  
1902 Dudley Ave.  
St. Paul, MN 55108-6089  
(612) 625-3101  
Fax: (612) 624-3420

Contact:  
Brian Barber  
[bbarber@umn.edu](mailto:bbarber@umn.edu)

## Missouri

Plant Diagnostic Clinic  
28 Mumford Hall  
Columbia, MO 65211  
(573) 882-3019  
[plantclinic.missouri.edu](http://plantclinic.missouri.edu)

SCN Diagnostics (nematology lab)  
1721 E. Campus Drive  
University of Missouri  
Columbia, MO 65201  
(573) 884-9118

[SCNdiagnostics@missouri.edu](mailto:SCNdiagnostics@missouri.edu)

Contact:  
Amanda Howland  
[SCNdiagnostics@missouri.edu](mailto:SCNdiagnostics@missouri.edu)  
MU Soil and Plant Testing Lab  
23 Mumford Hall  
Columbia, MO 65211  
(573) 882-3250

[soiltestingservices@missouri.edu](mailto:soiltestingservices@missouri.edu)

MU Delta Soil Testing Lab  
PO Box 160  
Portageville, MO 63873  
(573) 379-5431

## Ohio

C. Wayne Ellett Plant and Pest Diagnostic Clinic  
Ohio State University  
8995 E. Main St., Bldg. 23  
Reynoldsburg, OH 43068  
(614) 292-5006  
Fax: (614) 466-9754

[ppdc@osu.edu](mailto:ppdc@osu.edu)