

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) 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 avoid weekend transit.
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

University 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
www.facebook.com/UofIPlantClinic

Contact:
plantclinic@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

Contacts:
Tom Creswell
creswell@purdue.edu
John Bonkowski
jbonkows@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

Purdue Agronomy Extension lists labs that participate in proficiency testing programs for soil, plant tissue, and manure testing at https://ag.purdue.edu/agry/soilfertility/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

<https://hortnews.extension.iastate.edu/pidc>

Clinic Services and Information:
www.ipm.iastate.edu/ipm/info/contact

Contact:
Laura Jesse Iles and Lina Rodriguez Salamanca
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

The Iowa Department of Agriculture and Land Stewardship lists private certified soil testing laboratories at www.iowaagriculture.gov/feedAndFertilizer/pdfs/2015/Cert-LabsafterQ42015.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

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

Contact:
Judith O'Mara
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

Contact for general questions:
517-432-0988

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

Contact:
Jon Dahl
dahl@msu.edu

Minnesota

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

pdc.umn.edu

Contact:
Brett Arenz
aren0058@umn.edu

Soil Testing Laboratory
College of Food, Agricultural and Natural Resource Sci-
ences
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

Missouri

Plant Diagnostic Clinic
28 Mumford Hall
Columbia, MO 65211
573-882-3019

plantclinic.missouri.edu

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

SCNdiagnostics@missouri.edu

Contact:
Amanda Howland
SCNdiagnostics@missouri.edu

MU Soil and Plant Testing Lab
23 Mumford Hall
Columbia, MO 65211
573-882-3250

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