

Finding the Clinic*

From the West

From U.S. Hwy. 12 or U.S. Hwy. 14, take University Ave. east onto campus.

Turn left (north) onto Charter Street.

Turn left (west) onto Linden Drive.

Travel west to the intersection of Linden Drive and Babcock Drive. Russell Lab is the building on the northwest corner of this intersection. The PDDC is in Rm. 183.

From the East

From Interstate 90, take U.S. Hwy. 12/18 (the "Beltline") west.

Take the Park Street exit north into the city.

Turn left (west) on University Ave.

Turn right (north) onto Charter Street.

Turn left (west) onto Linden Drive.

Travel west to the intersection of Linden Drive and Babcock Drive. Russell Lab is the building on the northwest corner of this intersection. The PDDC is in Rm. 183.

Parking

Public parking is available in front of Babcock Hall (to the south of Russell Labs) and in the parking ramp (Lot 36) located to the north of Russell Labs.

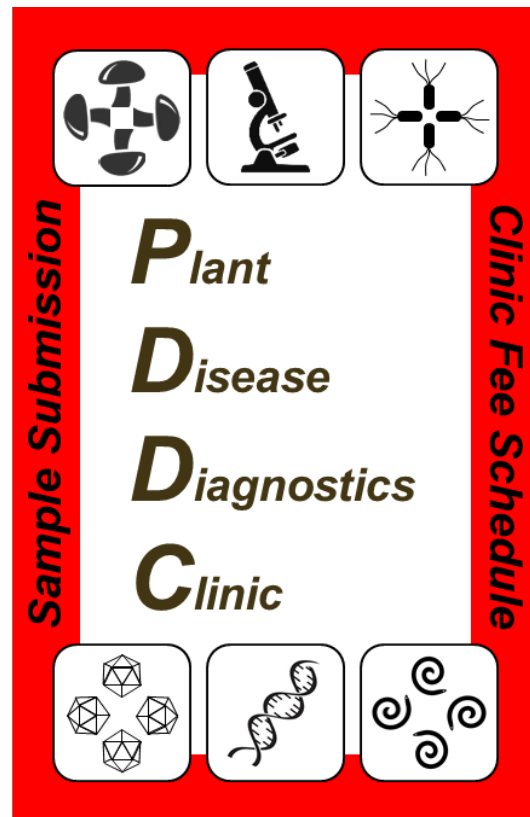
Clinic Hours

Samples can be dropped off at the PDDC whenever Russell Labs is open (weekdays 6 am - 6 pm except for UW-Madison holidays). Clinic staff is typically available most weekdays between 8:30 am and 4:00 pm.

***Due to construction, call the PDDC for up-to-the-minute driving and parking information. Also feel free to call to verify staff availability.**

University of Wisconsin Extension, Cooperative Extension, in cooperation with the U.S. Department of Agriculture and Wisconsin counties, publishes this information to further the purpose of the May 8 and June 30, 1914 Acts of Congress; and provides equal opportunities and affirmative action in employment and programming. If you need this material in an alternative format, contact the Plant Disease Diagnostics Clinic at (608) 262-2863.

Revised 12/14/2018



Providing plant disease identification and control recommendations to homeowners, businesses and agricultural producers

Plant Disease Diagnostics Clinic (PDDC)

Department of Plant Pathology

University of Wisconsin-Madison

1630 Linden Drive

Madison, WI 53706-1598

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How to Collect a Sample

Collect whole plants when possible.

Often growers first realize that they have a plant disease problem when they notice abnormalities in their plants' growth above ground. However many times, symptoms observed above ground are an indication of something going wrong below the soil surface. Therefore, samples that include whole plants are more likely to provide the information needed for PDDC staff to make a proper diagnosis

Always dig, never pull plants. Often diseased root tissue or pathogen structures associated with roots are very delicate. Pulling plants from the soil may shear diseased tissue or pathogens away, making diagnosis more difficult.

Collect more than one plant. Diagnosis of a plant disease often involves performing several tests on a sample. Sending more than one symptomatic plant ensures that there is enough tissue for all of the required tests.

Collect plants that show a range of symptoms. Diagnosis may involve looking for pathogen structures that may be formed only at certain stages of disease development. Providing a sample of plants showing a range of symptoms may speed diagnosis by providing tissue with these structures. Including healthy plants with your diseased plants can help in detecting subtle symptoms in diseased plants.

Keep collected plants as fresh as possible. Disease problems on fresh plants are more easily diagnosed than those on plants that have wilted or rotted prior to their arrival at the PDDC. If possible, collect plants immediately before they are to be submitted to the PDDC. If there will be a delay between the time that plants are collected and their arrival at the PDDC, keep the plants cool. Plants collected from home gardens can be kept in your refrigerator. Plants collected in a remote location should be placed in a cooler with ice. **DO NOT** place samples on your car or truck dashboard as they can overheat and deteriorate very rapidly.

Keep foliage from becoming contaminated with soil. Wash roots gently to remove soil unless the sample is to be tested for nematodes or you are submitting a potted plant. Soil contains many microorganisms that can readily colonize dead or dying tissue. These microorganisms can interfere

with recovery of pathogens from diseased tissue. When removing soil from roots, **DO NOT** scrub the roots as this can lead to the loss of root tissue that may be important in disease diagnosis.

Collect other important information. The diagnosis process often involves piecing together many different clues. Background information is crucial. When submitting a sample, include information about **THE PLANT** (name, variety, age); **SYMPTOMS** (unusual plant color, size or shape, severity of the disease); **THE ENVIRONMENT** (weather patterns just prior to the onset of symptoms, soil type where the plants are growing, amount of water that the plants have received, the amount of sun or shade that the plants receive); **MANAGEMENT FACTORS** [previous crops, fertilizers and pesticides that you have used, pesticides used by your neighbors (if known)].

Special Samples

Dutch elm disease, oak wilt, Verticillium wilt (vascular wilt) samples. Collect three branch pieces, 1/2 to 2 inches in diameter, 6 to 8 inches long, from recently wilted branches. Pieces from branches that are partially alive and partially dead are best. **DO NOT** send branches that have dried out and have a brown layer directly under the bark.

Soil samples. Collect soil samples from several locations in a field to be tested. Try to collect a sample that represents the soil from all areas of the field. These small samples (subsamples) can be mixed together for shipment. Testing for nematodes and *Verticillium*, require 1 to 2 cups of soil per sample. Testing for *Aphanomyces euteiches* races in soils collected from alfalfa fields requires 2 gallons of soil per sample. Testing for pea/bean root rot pathogens requires 2 gallons of soil per sample.

Tree and shrub root samples. Select three to four sites around the drip line (i.e., the edge of where the branches extend) of the tree or shrub. Dig down 3 to 6 inches at each location and look for fibrous (small) roots from the tree or shrub. Roots from all locations can be mixed together for shipment. A handful of roots is needed for testing.

Turf samples. The PDDC does not diagnose turf diseases. Turf samples submitted to the PDDC will be forwarded to the UW-Madison Turf Diagnostic Lab (<https://tdl.wisc.edu/>) for analysis.

How to Package a Sample

Potted plants. Place the pot in a plastic bag and **LOOSELY** tie the top of the bag around the stem of the plant using string or a wire twist tie. This will keep the soil from contaminating the leaves. Place the wrapped plant in a sturdy box. Use packing material to ensure that the sample won't shift during shipment.

Whole plants. If you have removed the soil from the roots of the plant, wrap the roots in moist (**NOT WET**) paper towels. Place the wrapped roots in a plastic bag and **LOOSELY** tie the top of the bag around the stem of the plant using string or a wire twist tie. **DO NOT** punch holes in the bag.

If you need to leave soil attached to the root system (e.g., because you believe a nematode is causing your disease problem), place the root system directly in the bag and **LOOSELY** tie the top of the bag around the stem of the plant using string or a wire twist tie. **DO NOT** punch holes in the bag.

Place the wrapped plant in a sturdy box. Use packing material to ensure that the sample won't shift during shipment.

Leaves. Place six to 12 leaves loosely in a plastic bag. **DO NOT** wrap them in moistened paper towels, but place a wad of moist (**NOT WET**) paper toweling in the bottom corner of the plastic bag. Tie or otherwise seal the bag closed. **DO NOT** punch holes in the bag. Place the bagged leaves in a sturdy box. Use packing material to ensure that the sample won't shift during shipment.

Seedlings. Remove seedlings from the soil and **GENTLY** wash them. Lay them on a moist (**NOT WET**) paper towel; cover them with another moist paper towel. Place the seedlings and toweling between two pieces of cardboard and put the sandwiched seedlings into a plastic bag. Tie or otherwise seal the bag closed. **DO NOT** punch holes in the bag. Place the wrapped seedlings in a sturdy box. Use packing material to ensure that the sample won't shift during shipment.

Deciduous woody branches. Cut branches into sections if necessary. Place the branches/branch pieces in a plastic bag and tie or otherwise seal the bag closed. If sending more than one branch (we typically recommend sending at least three), put branch pieces from different branches in different bags. Place the bagged

branches in a sturdy box. Use packing material to ensure that the sample won't shift during shipment.

Evergreen branches. Cut branches into sections if necessary. Place the branches/branch pieces in a plastic bag and tie or otherwise seal the bag closed. If sending more than one branch (we typically recommend sending at least three), put branch pieces from different branches in different bags. Place the bagged branches in a sturdy box. Use packing material to ensure that the sample won't shift during shipment.

Fleshy fruits and vegetables. Wrap fruits and vegetables in dry newspaper. Place the wrapped fruit/vegetable in a plastic bag and tie or otherwise seal the bag closed. **DO NOT** punch holes in the bag. Place the bagged material in a sturdy box. Use packing material to ensure that the sample won't shift during shipment.

Roots. **GENTLY** wash roots to remove excess soil. Wrap roots in moist (**NOT WET**) paper towels and place them in a plastic bag. Tie or otherwise seal the bag closed. **DO NOT** punch holes in the bag. Place the wrapped roots in a sturdy box. Use packing material to ensure that the sample won't shift during shipment.

Mail Samples to:

Plant Disease Diagnostics Clinic (PDDC)
Department of Plant Pathology
University of Wisconsin-Madison
1630 Linden Drive
Madison, WI 53706-1598

Please enclose a cover letter with your sample(s) that includes your complete mailing address, your telephone number and/or your email address, and a brief description of the problem you have been having with your plant(s).

Fee Schedule

Fees Effective January 1, 2019

Fees subject to change without notice

Standard Diagnostic Tests

Digital analysis fee	None
Examination of digital photos of diseased plants submitted via email.	
Base fee	\$20.00
Charged for all physical samples submitted from a single plant. Includes visual and microscopic examination, and incubation in a moist/humid chamber where needed.	
Culturing fee	\$5.00
Charged when fungal or bacterial pathogens need to be grown from samples. Typically these fees would not exceed \$10 per plant part (e.g., roots or branches) tested.	
Dip stick serological test fee	\$8.00
Includes (but is not limited to) tests for arabis mosaic, cucumber mosaic, fire blight, impatiens necrotic spot, <u>Phytophthora</u> diseases (e.g., root rot), potyvirus diseases, powdery scab, tobacco mosaic, tomato spotted wilt.	
ELISA serological test fee	\$35.00
Includes (but is not limited to) the test for Apple mosaic.	
DNA-based (PCR) test fee	\$35.00
Includes (but is not limited to) tests for crown gall, hops downy mildew and powdery mildew, oak wilt, phytoplasma diseases, powdery scab, soft rots (caused by <u>Dickeya</u> spp. and <u>Pectobacterium</u> spp.), <u>Xanthomonas</u> diseases.	
RNA-based (PCR) test fee	\$35.00
Includes (but is not limited to) tests for carlavirus diseases, corky ringspot, tobacco rattle.	
DNA-sequencing fee	\$35.00
Used when other tests are inconclusive. Fees for culturing and/or PCR would also apply for samples requiring sequencing.	

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Other Diagnostic Tests

Aphanomyces soil analysis (race specific)	\$150.00
A minimum of 1½ to 2 gallons of soil per 40 acre area is required.	
Pea/snap bean root rot soil analysis	\$75.00
A minimum of 1½ to 2 gallons of soil per 40 acre area is required.	
Verticillium quantitative soil analysis	\$75.00
Call for details and to discuss limitations of this test prior to submitting a sample.	
Soybean cyst nematode analysis	\$35.00
A minimum of 2 cups of soil is required.	
Two-lined chestnut borer analysis	\$5.00

Some Notes about Fees

The PDDC will make every effort to keep the cost of a diagnosis as low as possible. Fees help cover the cost of equipment/supplies/labor needed to process a sample, but not covered by state or federal funds that the PDDC receives. Fees also help support PDDC outreach programs throughout Wisconsin.

Please feel free to contact the PDDC to discuss possible tests and associated fees for your specific sample prior to submission. If no specific testing requests or cost limitations are noted at the time of submission, the PDDC reserves the right to determine which tests are most appropriate for a given sample.

In most instances, the fee for homeowner samples will be \$50 or less. Fees for most commercial samples will be \$100 or less. However, exceptions may arise.

Please **DO NOT** enclose a payment with your sample. You will be billed for any work after your analysis has been completed and at the time that your report is sent to you.