



Plant Disease Clinic Update

June 22, 2006

The University of Minnesota's Plant Disease Clinic provides prompt, accurate diagnosis and information on plant diseases for commercial growers and homeowners in Minnesota. The services provided include routine plant disease diagnosis, nematode analysis, seed quality testing, viral analysis, and contract research. Recently, we have begun using PCR (polymerase chain reaction) assays to assist with the specific and sensitive detection and diagnosis of certain plant pathogens and diseases. The primary diagnostician is Amy Holm, who has an MS degree in Plant Pathology and considerable experience in working with plant diseases. Faculty and staff in the Department of Plant Pathology also use their expertise to assist with diagnosis as needed.

Why is accurate disease diagnosis important?

Disease diagnosis is a critical initial step for successful disease management. Several different diseases and/or plant health problems can cause similar symptoms; therefore, it is important to obtain an accurate diagnosis to choose the best disease-control measures and to know what is affecting your crops or plants. Many pesticides have specific activity against only certain types of pests and the incorrect use of pesticides wastes time and money.

The Plant Disease Clinic has worked with the National Plant Diagnostic Network (NPDN) in the North Central Region for three years, and has recently implemented a National Plant Diagnostic information system. The mission of the NPDN is to rapidly detect and diagnose high-consequence biological pathogens such as soybean rust and to efficiently communicate information throughout the network.

The backbone of this system is accurate and timely plant disease diagnosis, which starts with proper sample collection and submission. Samples should be collected as soon as disease symptoms develop and they should be submitted to the Plant Disease Clinic according to guidelines listed below.

Services Offered by the University of Minnesota Plant Disease Clinic

- **Routine Diagnosis:** We provide routine diagnosis of samples that require traditional methods of symptom analysis, culturing, or microscopic examination. These include leaf spot and root rot diseases of field crops. Fees may vary if additional specialized media is required (\$20-25).
- **Nematode Analysis:** Identification and count of plant parasitic nematodes for all commercial crops. (\$20) Note: Samples specifically for soybean cyst nematode (SCN) should be sent directly to the Nematology Laboratory, Southern Research Experiment Station, 35838 120th St., Waseca, MN 56093 (\$20) <http://sroc.coafes.umn.edu/Nematology/Cyst%20Soil%20Sample%20Form.pdf>
- **Virus Analysis:** ELISA (enzyme-linked immunosorbent assay) and other serological virus tests are available. Fees vary depending on the test (\$25.00 minimum).
- **Seed Quality Testing:** Identification of storage molds for corn and other grain (\$35).
- ***Aphanomyces* Testing:** This is a biological assay on sugarbeet soil for the presence of *Aphanomyces* sp. Soil samples should be collected after harvest and will be processed in the

greenhouse during the winter months. Contact the Plant Disease Clinic for specific information. For information on *Aphanomyces* testing on alfalfa and peas, please contact the clinic (\$100).

- **Rhizomania** Testing: A 9-10 week bioassay performed on sugarbeet soil for the presence of beet necrotic yellow vein virus (*Rhizomania*). Samples are processed during the winter months (\$50).

How To Submit Samples For Disease Diagnosis

1. Collect living plants that exhibit varying stages of decline. Do NOT submit dead plants.
2. For virus testing, collect symptomatic leaves, stems, or entire plants. Wrap in plastic. It is very important that these samples do not dry out during shipment. Do not add extra water to the bags.
3. For nematode analysis, ship soil in plastic bags and keep refrigerated until shipped. It is important that nematode samples are not exposed to high temperatures. Specific guidelines for sample collection are available upon request.
4. Submit a completed Information Request Form with each sample. Please include phone number and/or email address.
5. Ship samples immediately after collection.
6. Ship samples by overnight delivery or mail early in the week to insure fast delivery. Plant samples often decompose if left in the post office over the weekend. Please submit payment with each sample. Make checks payable to the University of Minnesota.

Shipping Address:

Plant Disease Clinic
495 Borlaug Hall
1991 Upper Buford Circle
University of Minnesota
St. Paul, MN 55108-6030
(612) 625-1275 - Phone
(612) 625-9728 – FAX

Email address: holmx157@umn.edu

In-person, delivery address (8-4:30pm, T-F, closed on Mondays):

105 Stakman Hall
1519 Gortner Ave.
University of Minnesota, St. Paul campus

Click here (<http://www.extension.umn.edu/distribution/cropsystems/components/clinic.pdf>) (requires Adobe Acrobat) to download the form for submitting samples to the Plant Disease Clinic. For more information on the clinic, see their web site at:

<http://www.extension.umn.edu/distribution/cropsystems/DC3170.html>

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