

University of Missouri Extension Plant Diagnostic Clinic Report - 2008

By Simeon Wright

The Plant Diagnostic Clinic was established in 1965 and handles samples submitted for disease, insect, and weed identifications, as well as management recommendations. The clinic supports county extension specialists, but in recent years 65-75% of samples have been received directly from other agencies, businesses and private citizens throughout the state. Most clinic operations are handled by clinic staff, however other MU Division of Plant Science faculty assist when needed. Samples are diagnosed by visual observation or microscopic examination. When necessary, samples are also diagnosed by culturing plant tissues, limited ELISA serological testing, the BIOLOG bacterial identification system, and PCR. Use of ELISA and PCR testing methods is dependent on significant sample volume for economic reasons.

In 2008, we have had 575 samples, approximately the same number of sample submissions as 2007. Most samples were submitted through the mail while some were personally delivered to the clinic or submitted digitally by email. Samples were submitted from 79 Missouri counties. Approximately 80% of the samples were received between May and September.

In 2008, agronomic crop samples represented 27% of samples submitted to the clinic (fig. 1). Wheat, soybeans and corn were the primary agronomic crop samples we received (fig. 2). Sample submissions to the plant diagnostic clinic have often been examined by experienced agronomists, and consequently do not necessarily represent the most common plant problems occurring in the state. Significant numbers of the following agronomic samples were received and are described below:

Many of the wheat samples were submitted for virus testing, and tested positive using ELISA testing techniques for WSMV (wheat streak mosaic virus), and BYDV (barley yellow dwarf virus), with some SBWMV (soilborne wheat mosaic virus) and WSSMV (wheat spindle streak mosaic virus). We received several wheat samples with black chaff, powdery mildew, and scab (head blight). We had fewer samples with Septoria leaf blotch this year that we have the

previous few years. We confirmed *Cephalosporium stripe*, a disease that has not been submitted the previous few years, from a central Missouri sample.

Common soybean problems this year were downy mildew, sudden death syndrome, Septoria brown spot, *Cercospora* leaf blight/leaf spot and herbicide injury issues. Several samples were submitted for soybean rust confirmation, however none of the submitted samples were positive. Unlike the previous few years, very little frogeye leaf spot was submitted. Few samples were submitted with virus issues, although we did receive SMV (soybean mosaic) and TRSV (soybean budblight). Although we also had a decrease in samples submitted with root/lower stem rots, we did notice many of the submitted plants had poor root systems due to compacted soils, saturated soils etc.

Corn samples were frequently submitted with anthracnose (primarily early season foliar injury to seedlings). Other frequent submissions were Diplodia ear rot, gray leaf spot, and herbicide injuries. We also received a few samples with a *Fusarium* crown rot, a bacterial soft rot at the leaf collar, and an issue we believe is a disease lesion mimic, a genetic disorder that causes foliar lesions under certain environmental conditions, and that has been observed across several hybrids. (see <http://www.apsnet.org/online/feature/mimics/>)

We did not receive a lot of forage samples, however most of the alfalfa samples received had crown and root rot issues, including one with *Phytophthora*. Some forage grass samples were received with anthracnose and other minor foliar disease issues.

More information on the University of Missouri Plant Diagnostic Clinic, fees and services are available at: <http://soilplantlab.missouri.edu/plant/index.htm>. You can also contact the lab at plantclinic@missouri.edu or 573-882-3019 .

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Figure 1. Plant sample submissions in 2008

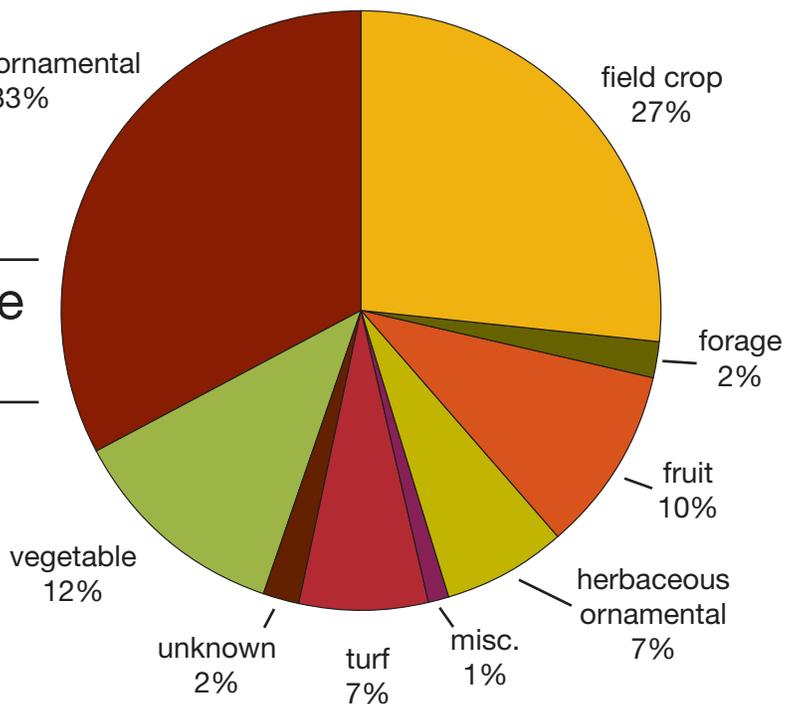


Figure 2. Diagnosis of agronomic samples submitted in 2008

