

# Sustainable Crops Educational Programs: Auburn University Plant Diagnostic Services 2024

► Auburn University's Plant Diagnostic Services plays a vital role in protecting Alabama's agriculture and landscapes by identifying plant pests and offering management advice. Extension specialists and diagnosticians work to reduce pesticide use and detect new invasive pests. Services include diagnosing plant diseases, identifying insects, analyzing nematodes, and identifying plants and weeds.

**Issue:** Accurate pest diagnosis is the first and most critical step in any integrated pest management (IPM) program. Appropriate IPM recommendations can only be provided once a pest has been properly identified. The Auburn University Plant Diagnostic Lab (AU-PDL) provides Alabama growers with pest identification and unbiased management recommendations to protect the health and productivity of plants in the state's agricultural and natural ecosystems.

**Clientele:** Growers; homeowners; crop advisers; nursery, landscape maintenance, and pest control industry workers; Extension personnel; state and federal regulatory agencies.

**Objectives:** Identify the root cause of plant health problems that arise with growers in Alabama. Plant health problems include plant diseases; insects; weeds; crop nutrition; and environmental, chemical, cultural, and other unpredictable factors. IPM tactics are considered when providing management options to clientele and are based on research findings from Alabama and other states in the southeast region.

**Impacts:** The AU-PDL processed 10,271 samples during 2024: 2,328 were routine samples (1,121 plant samples, 992 nematode samples and 215 insect samples). Throughout the year, 1 percent of clientele are surveyed to determine specific impacts based on recommendations provided through diagnostics. Clients surveyed (n=23) saved an average of \$504 per sample by following lab recommendations. With 2,328 routine plant samples, the AU-PDL saved clientele \$1,173,312. Additionally, of the clients surveyed, 96 percent indicated that they adopted or plan to adopt the IPM recommendations provided by the AU-PDL diagnostics.



Figure 1. Bacterial leaf scorch on sycamore



Figure 2. Eriophyid mites on elderberry



Figure 3. Fusarium wilt of tomato



**Figure 4.** Phytophthora crown/root rot on magnolia



**Figure 5.** Tar spot on fall corn



**Figure 6.** Boxwood blight

In addition to diagnostics performed, the AU-PDL published three peer-reviewed journal articles, presented five proceedings at conferences, issued four pest alerts for growers, provided fourteen presentations to various groups on disease and insect identification and management, issued updates from the plant diagnostic lab, and published four articles in various newsletters. Lab personnel also presented at the AU Outreach and Engaged Scholarship Symposium, participated in several local and statewide TV shows concerning relevant and timely pest topics, and

contributed plant pathology and insect management in turf information to the Alabama Master Gardener curriculum. They also participated in multiple national working groups ranging from Delusory Parasitosis to Emerging Viruses in Cucurbits, identified six first reports in Alabama, and maintained United States Department of Agriculture (USDA) certification for testing of four regulated pathogens of concern in this area to assist USDA, the Alabama Department of Agriculture and Industries (ADAI), and Alabama growers.



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