Pest Alert

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Charles H. Bronson, Commissioner of Agriculture

Gladiolus rust (*Uromyces transversalis*) Arrives in the US: Florida and California

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INTRODUCTION: The first detection of *Uromyces transversalis* in the United States was made on *Gladiolus x hortulanus* at a cut flower farm in Manatee County, FL on April 12, 2006 after Hawaii pathologists reported finding the disease on April 7 in cut flowers coming from that location. The USDA National Mycologist of the Animal Plant Health Inspection Service (APHIS) Agricultural Research Center in Beltsville, MD confirmed Florida 's diagnosis on April 14, 2006. Later, on May 25, the rust was found on a commercial cut gladiolus farm about 100 miles to the southeast in remote Hendry County, FL. A third smaller cut gladiolus farm in Calhoun County, FL remains rust-free. In May 2006, gladiolus rust was also detected at one commercial and three residential sites in San Diego County, California, just north of the Mexican border. Rust has been intercepted many times on cut gladiolus flowers entering the US from Mexico in recent years.

Emergency Action Notifications have been issued to the affected farms. All interstate movement of infected material has been prohibited unless the product has been inspected and found free of visible symptoms associated with *Uromyces transversalis*. In Florida, APHIS and FDACS-DPI inspectors have concluded delimitation surveys in all locations, and are continuing surveillance following the removal of all host material from the two farms in June. The Florida surveys indicate that gladiolus rust is presently limited to the 1,400-acre commercial site in Manatee County, the 700-acre site in rural Hendry County, and four private residential gardens in the urban areas around the Manatee County farm.

The USDA Center for Plant Health, Science and Technology has organized a technical committee with the main objective of devising appropriate eradication techniques specific to the infested areas of FL and CA. The recommended protocols consist of enhanced cultural control methods including long host-free fallow periods, increased use of more effective and costlier triazole and strobilurin fungicides, and frequent scouting of production and fallow fields along with surrounding neighborhoods.

IDENTIFICATION AND ECONOMIC IMPORTANCE: *Uromyces transversalis* is an autoecious rust fungus native to South Africa. Of the six rust fungi that can infect gladiolus, *U. transversalis* is the most economically important. If uncontrolled, total yield losses can occur. Rust pustules (uredinia) form mostly on foliage, but can also form on flower spikes under heavy disease pressure. Pustular development in transverse lines across gladiolus foliage is characteristic for *U. transversalis* and is useful for visual diagnosis of the disease.

HOSTS: The rust mainly infects *Gladiolus*, but has been known to infect these other members of the Iridaceae: *Anomatheca*, *Crocosmia*, *Melasphaerula*, *Tritonia*, *Watsonia*.

REFERENCES:

Invasive and Emerging Fungal Pathogens - USDA-ARS Fact Sheet
http://www.doacs.state.fl.us/pi/enpp/pathology%5Cgladiolus-rust.html
For A Qualitative, Organism-Based Pathway Risk Assessment (USDA-APHIS-PPQ)
http://www.doacs.state.fl.us/pi/enpp/pathology/images/gladrustmexpra.pdf

Figure 1. Typical appearance of gladiolus infected with *U. transversalis*. Note the dieback of foliage due to rust.

Figure 2. Closer view of fresh uredinial pustules.

Figure 3. Uredinial pustules arranged transversely (at right angles to the vascular strands) on the gladiolus leaf.

Photo credit: Wayne Dixon and Jeffrey Lotz, FDACS/DPI