

Southern Wilt of Geranium

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Southern wilt of geranium is caused by *Ralstonia* (*Pseudomonas*) *solanacearum*. APHIS has confirmation of *Ralstonia solanacearum* race 3 biovar 2 in geraniums in four commercial greenhouses in Illinois, Indiana and Wisconsin. All greenhouses received infected propagative material from the Goldsmith Plants, Inc. facilities located in Kenya. Goldsmith has since voluntarily quarantined two greenhouses in Kenya in January 2003 and suspended shipments of geranium cuttings from those greenhouses for the remainder of this season. They have also alerted customers that may have received cuttings infected with *Ralstonia*. It appears that several hundred customers may be impacted, and PPQ is currently conducting trace forward activities to determine the location of the shipments in the United States. APHIS has implemented a prohibition for all geranium nursery stock from Kenya effective February 14. APHIS has sent officials to investigate the source production site for the infection.

Symptoms of *Ralstonia* infection include wilted plants that do not have root rot or stem canker (unless there are multiple diseases occurring). Symptoms of this pathovar on geraniums are visually indistinguishable from those caused by certain *Xanthomonas*, which is why laboratory analysis is essential for correct diagnosis. Symptom progression begins with one or two leaves that begin to droop. Remember, root rot, cool temperatures, freezing injury or high soluble salts can also cause wilt. However, in the case of infection by *Ralstonia*, the whole plant wilts and will not recover. A key symptom to distinguish between infection by *Xanthomonas* and *R. solanacearum*, is that *Ralstonia* does not cause leaf spots. *Ralstonia* race 3 may become a production problem for geranium nurseries utilizing surface water, or "ebb and flow" irrigation systems.

R. solanacearum race 3 biovar 2 is cited on USDA's Agricultural Bioterrorism Act of 2002 Select Agents and Toxins list because it is a serious pathogen of potatoes that is not present in the

United States. PPQ has no information that indicates the introduction of this pathogen was deliberate but instead resulted from unintentional contamination in the routine importation of geraniums.

Shipments from the affected greenhouses will be suspended until PPQ ascertains that tests for the presence of the pathogen are negative. Contaminated U.S. greenhouses will not be allowed PPQ-approved procedures are used both to destroy plants and decontaminate greenhouses. PPQ is in the process of evaluating protocols to screen geraniums for *R. solanacearum* race 3 biovar 2, so more information will be forthcoming on this issue.

The *Ralstonia* detections and subsequent APHIS action will coincide with key shipping times for geraniums for both Kenyan interests and the domestic greenhouse industry. APHIS will make every effort to implement its emergency response as soon as technically feasible to ensure that U.S. potatoes and other solanaceous plants are safeguarded, and to minimize adverse impact on the geranium industry.