

## Ralstonia Wilt

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**What is Ralstonia wilt?** *Ralstonia* wilt (also sometimes known as southern wilt) is a usually lethal disease that affects over 250 plants in over 40 plant families. Susceptible greenhouse-grown ornamentals include, but are not limited to, plants in the genera Capsicum, Cosmos, Cyclamen, Dahlia, Fuchsia, Gerbera, Hydrangea, Impatiens, Lantana, Nasturtium and Pelargonium. Vegetables such as eggplant, pepper, potato and tomato, as well as tobacco, are also susceptible. *Ralstonia* wilt has recently been detected in geraniums (Pelargonium spp.) in Wisconsin.



Yellowing and wilting characteristic of southern wilt.

**What does Ralstonia wilt look like?** Symptoms of *Ralstonia* wilt in geraniums are similar to those associated with bacterial blight (caused by Xanthomonas campestris pv. pelargonii). Initially, lower leaves of infected plants yellow and wilt, then die. Yellowing and death of upper leaves follow. Symptoms may initially occur on only one side of the plant. Internally, the water-conducting tissue of the plant browns, and then the entire stem rots from the inside out. Finally, infected plants die.

**Where does Ralstonia wilt come from?** *Ralstonia* wilt is caused by the bacterium Ralstonia solanacearum (formerly Pseudomonas solanacearum). This bacterium is commonly found in tropical, sub-tropical and warm temperate climates, but is not believed to survive cold temperatures such as those typical of Wisconsin winters. The bacterium can be moved in symptomless plants or cuttings, or in contaminated soil and plant debris (where the pathogen can remain dormant for many years). Several subgroups (i.e., races or biovars) of R. solanacearum have been recognized, each with a different host range. R. solanacearum race 3, biovar 2 is of particular concern it causes a serious disease of potato called brown rot. In addition, this race/biovar has been listed as a select agent in the Agriculture Bioterrorism Act of 2002 and is considered to have potential to be developed as a bioterrorist weapon.

**How do I save plants with Ralstonia wilt?** There are no known treatments that will save plants infected with *Ralstonia* wilt. If you believe your plants are suffering from this disease, immediately contact your local department of agriculture or county Extension agriculture or horticulture agent to arrange for confirmatory testing (see below for information on where to submit samples in Wisconsin). If your plants test positive for *R. solanacearum* race 3, biovar 2 the U.S. Animal and Plant Health Inspection Service (APHIS) must be notified and this organization will provide guidance on proper disposal of contaminated plants and decontamination of greenhouses. Recent APHIS guidelines are available at:

[www.aphis.usda.gov/ppq/ep/ralstonia/USDARalstoniaActionPlan\\_ver3.pdf](http://www.aphis.usda.gov/ppq/ep/ralstonia/USDARalstoniaActionPlan_ver3.pdf)

**How do I avoid problems with Ralstonia wilt in the future?** Start by purchasing and growing pathogen-free plant cuttings. Keep plants from different suppliers physically separated by at least 4 ft. to minimize the risk of cross contamination should a shipment of plants prove to be contaminated. Because *R. solanacearum* is easily moved with soil or water, minimize splashing or any other movement of water or soil from plant to plant when watering. When taking cuttings or trimming plants, be sure to clean cutting tools between cuts by dipping them in a 10% bleach solution, ammonia or alcohol (spray disinfectants that contain at least 70% alcohol can also be used). Also wash your hands frequently when handling plants to minimize the possibility of moving the bacterium by touch. Remove and destroy weeds or weed debris as these can harbor the pathogen. Finally, do not grow plants in a greenhouse where the disease has occurred unless it has been properly decontaminated.

**For more information on Ralstonia wilt or help in diagnosing this problem:** Contact Brian Hudelson, Plant Disease Diagnostics Clinic, University of Wisconsin-Madison/Extension, 1630 Linden Drive, Madison, WI 53706-1598 [phone: (608) 262-2863, fax: (608) 263-2626, email: [bdh@plantpath.wisc.edu](mailto:bdh@plantpath.wisc.edu).

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