

Geranium Southern Bacterial Wilt (Potato Brown Rot)

March 2021

Ralstonia solanacearum race 3 (biovar2A) is a bacterial pathogen that causes several important plant diseases including southern bacterial wilt of geranium, brown rot of potato and bacterial wilt of tomato, pepper, eggplants and several other solanaceous plants. It is on the NAPPO list of AI quarantine pests, as well as Canada's list of quarantine pests. There are five races of *R. solanacearum* varying in their host range and geographical distribution. Race 1 has a wide host range and is endemic to the Southern United States. Banana is the main host for Race 2 and is found in the Caribbean, Brazil, and Philippines. Race 3 is found worldwide except in Canada and the United States. Race 4 affects ginger in much of Asia, and Race 5 affects mulberries in China.

Symptoms

Infected plants show early signs of wilting of leaves (Figure 1) even when adequate moisture is available to the root system. Advanced stages of infected plants may display blighting and necrosis of leaves and death of plants.



Figure 1. Early symptoms of wilting on geranium infected with *Ralstonia solanacearum*. Photos credit: Wisconsin Department of Agriculture.

Regulatory Action

In 2003, *R. solanacearum* race 3 (biovar2) was confirmed in geraniums in commercial greenhouses in Illinois, Indiana, Michigan, and Wisconsin by the United States Department of Agriculture's Animal and Plant Health Inspection Service (APHIS). In the spring of 2003, infected geraniums were found in a total of four Canadian greenhouses and all associated plant materials were destroyed, as confirmed by the Canadian Food Inspection Agency (CFIA). In April 2020, *R. solanacearum* race 3 (biovar2) was again detected in a Michigan greenhouse followed by more than 650 facilities in 44 States. In Canada, the CFIA confirmed the detection of

R. solanacearum race 3 (biovar 2) in symptomatic geranium from an Ontario greenhouse, shipped from the USA, traced back to the plants initially imported from Guatemala. Both the APHIS and CFIA successfully contained the spread and eradicated the pathogen from the infested greenhouse facilities.

In June 2003, the CFIA implemented an interim policy to prevent the introduction of *R. solanacearum*, Race 3 (biovar2) into Canada: [Policy directive D-03-09: Import Requirements for Pelargonium spp. and Solanum spp. Propagative Material to Prevent the Entry of Ralstonia solanacearum, Race 3 \(Biovar 2A\) into Canada](#). The CFIA also established an action plan with eradication protocols, which are used if the disease is detected. Previous outbreaks in Europe and the United States were controlled through good sanitation measures.

Disease Confirmation and Reporting

If the disease is suspected, please contact the local CFIA office or B.C. Ministry of Agriculture, Food and Fisheries, and submit suspected samples to the [Ministry of Agriculture, Food and Fisheries - Plant Health Laboratory](#) or to a federal (CFIA) plant diagnostic laboratory.

For Further Information

[Bacterial Wilt of Geraniums - Ralstonia solanacearum - Canadian Food Inspection Agency](#)

[Ralstonia information and pest alert - USDA APHIS Plant Protection and Quarantine](#)

Prepared by:
Siva Sabaratnam, Plant Pathologist
Abbotsford Agriculture Centre,
British Columbia Ministry of Agriculture, Food and Fisheries
Abbotsford, B.C.