

Bacterial Ring Rot of Potato

June 2024

Bacterial ring rot is caused by a bacterium, *Clavibacter michiganensis* subsp. *sepedonicus*. It causes disease only on potato. Bacterial ring rot is not known to occur in British Columbia (B.C.). Occasional outbreaks in home gardens and table stock fields over the years have been detected and eradicated. It is a regulated disease under the *Provincial Plant Protection Act* (see below). The disease can be prevented by planting only "B.C. Certified" seed potatoes and not using table potatoes for seed or bringing in seed potatoes from outside the province. Potato growers in B.C. are asked to be aware of the symptoms of the disease and report any suspicious tubers to the B. C. Ministry of Agriculture and Food.

Symptoms

The disease is called "bacterial ring rot" because the symptoms appear in the vascular system (ring shaped) of the potato tuber. In severely affected tubers, the vascular ring is brown to black in colour (Figure 1A), often with a cheesy or creamy ooze and many hollow spaces where the flesh has disintegrated. Dry cracks can usually be found on the surface of the tubers (Figure 1B). In milder cases, the vascular ring may show only broken, black lines or a yellowish discolouration. Leaves of infected plants may show interveinal yellowing, necrosis and blighting of leaf margin, wilting, or remain asymptomatic (Figure 2).

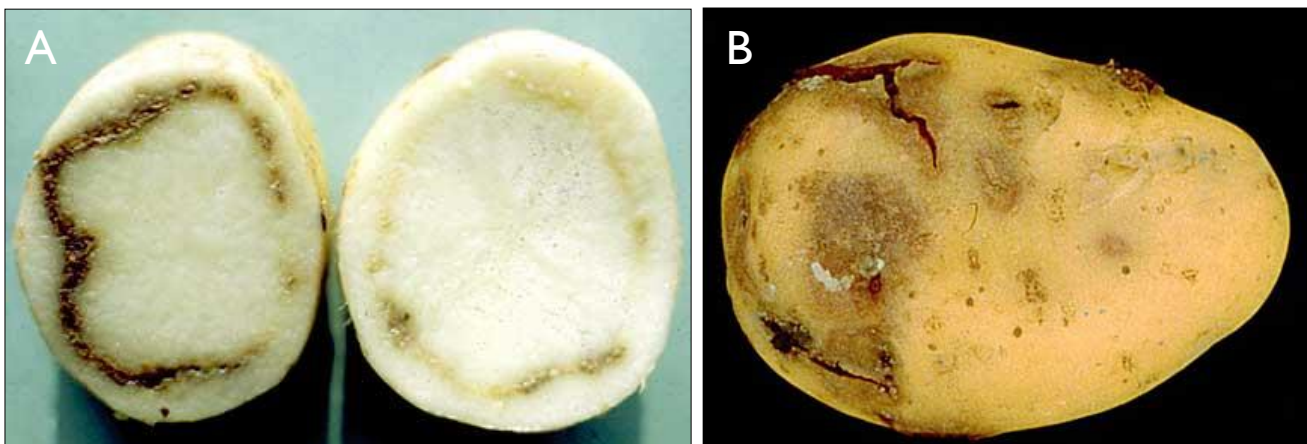


Figure 1. Cross section of a bacterial ring rot infected potato tuber with yellow to brown necrotic vascular tissue (A) and cracking of external skin tissue. Photo credit: Dr. Solke De Boer, Canadian Food Inspection Agency.



Figure 2. Symptoms on potato leaf infected with bacterial ring rot. Photo credit: Dr. Solke De Boer, Canadian Food Inspection Agency

Survival and Spread

Once a crop is infested with the bacterium, the disease will carry over from year to year and spread quickly. The bacterium can survive for 2 to 5 years as dried or frozen slime on the surface of machinery, crates, bins or burlap sacking. The bacterium can overwinter on volunteer potato plants and plant debris, including infected cull tubers. It can spread in rain and irrigation water and by insects, but wounds on plants/tissues are needed for infection to occur. Thus, the most important means of infection is via cutting seed potatoes with contaminated knives.

Management

Prevention: Plant only B.C. certified seed potatoes. Avoid using table stock for seed or importing seed from other areas for planting in B.C. Disinfect knives frequently while cutting seed pieces to avoid spreading any disease that might be present but unnoticed. Bury cull piles and control volunteer potatoes. Clean and disinfect storage bins between crops and pressure-wash equipment to avoid spreading ring rot or other diseases.

Control: If symptoms are seen or the disease is suspected, please notify the B.C. Ministry of Agriculture and Food as soon as possible. Samples will be tested in the Ministry's Plant Health Laboratory (see details below) to confirm the disease and trace the source of the outbreak to prevent further spread. Ministry staff will advise on clean-up and disposal and will do follow-up testing to ensure that the disease has been eradicated.

Regulations: Bacterial ring rot is a regulated disease in B.C. All potatoes grown in B.C. are governed by *Domestic Bacterial Ring Rot Regulation 93/59*. Under this regulation, if symptoms of bacterial ring rot are found or suspected of in any potato crop grown in B.C., the occurrence must be reported to the B.C. Ministry of Agriculture and Food and the crop must be detained until

inspected. Bacterial Ring Rot Regulation 92/59 provides authority for inspection of all potatoes imported to B.C.

If bacterial ring rot is suspected in a sample or field, please do contact the B.C Ministry of Agriculture and Food and send suspected samples to the [Ministry of Agriculture and Food - Plant Health Laboratory](#) for disease confirmation.

For Further Information

B.C. Plant Protection Act, Domestic Bacterial Ring Rot Regulation (unofficial version)

B.C. Plant Protection Act, Bacterial Ring-Rot Regulation (unofficial version)

Understanding Bacterial Ring Rot in Potatoes (Alberta Agriculture, Food & Rural Development)

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