Bacterial wilt of potato

*Ralstonia solanacearum*

Bacterial wilt is caused by the bacterium *Ralstonia solanacearum* formerly called *Pseudomonas solanacearum*.

It is one of the most destructive diseases of the potato and is responsible for causing considerable losses to the potato industry where the disease exists.

Bacterial wilt has a very wide host range, on potato, the disease is also known as brown rot, southern wilt, sore eye or jammy eye.

**Host range**

Bacterial wilt attacks more than 200 species. These include economically important hosts such as tobacco, potato, tomato, eggplant, pepper, banana, peanut and beans. Thorn apple and nightshade are two common weed hosts that are attacked by the disease.

**Symptoms**

Severely affected plants can wilt during hot weather. Diseased tubers have ‘jammy eyes’ and a brown rot in the vascular ring which is seen when the tuber is sliced in half. At a later stage, thick creamy mucus fills the inside of these tubers.

Wilting may not occur during cool weather or in potato varieties that have some resistance to the disease.

Disease development is favoured by warm temperatures (25° – 30°C) and is limited by temperatures below 10°C. Soil moisture is important as the bacterium cannot tolerate dry soil conditions.

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Symptoms of potato brown rot with bacteria oozing from cut vascular tissues (a) and eyes (b) (UK Crown Copyright—Courtesy of Fera Science Ltd.), and wilted plant in the field (c) (Courtesy of International Potato Center)
Spread and Survival

Bacterial wilt can be spread by:

- Infected tubers (seed or commercial)
- Infested soil
- Contaminated water
- Plant debris
- Contaminated machinery
- Insect pests and nematodes
- Contact between roots
- Rain splash or in dust particles carried by wind
- Irrigation water - The bacterium can be spread in irrigation water. Irrigation dams & channels can become contaminated by run-off from infected paddocks and wash down areas

Infection of plants and tubers can occur via

- Soil, where bacteria enter weak points in the root system such as root emergence sites or wound sites caused by soil abrasion or by nematodes.
- Infected mother tubers (seed tubers).

The bacterium spreads from infected roots or mother tubers via the vascular system to the rest of the plant.

The bacterium can survive on:

- Volunteer potatoes and on
- Related species such as tomato, nightshade, thornapple and Narrawa burr.

What to do

Growers can put on-farm biosecurity measures in place to reduce the chance of pests and disease getting onto their properties.

These include:

- clean seed is essential, only use seed from a reputable source (Certified Seed)
- putting up farm biosecurity signs on gates and fences to manage visitors coming onto your property
- avoiding sharing equipment
- keeping equipment and vehicles clean and free of plant matter
- wearing clean clothing before visiting other growers’ properties
- teaching farm workers on-farm hygiene practices, what to look for and how to report unusual pests and diseases
- report suspect symptoms to the Exotic Plant Pest Hotline

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