

## Biosecurity Advice (07/17)

### Location

WA - Aug 2017

### Pest

Bacteria *Dickeya dianthicola*

### Situation

- The plant pest *Dickeya dianthicola* has been detected in seed potato and dormant dahlia tubers in Western Australia.
- This pest is a bacterium that is considered to be an important pathogen in potato production worldwide, where it is known to cause 'blackleg' disease and tuber soft rot. Overseas it has caused significant yield loss in potato crops, and is a significant issue in the production of seed potatoes. It is also known to have a serious impact on ornamental crops.
- The bacterium has been confirmed on four commercial potato growing properties. It was detected in potatoes on three of these properties, which have been quarantined.
- On the fourth property it was detected in dormant dahlia tubers. This property has received a biosecurity direction notice under the Biosecurity and Agriculture Management Act 2007 which means that the tubers cannot be moved off the property.
- The quarantine notices stipulate movement restrictions on host plant material, soil and machinery.
- The WA Department of Primary Industries and Regional Development (DPIRD) has collected samples from 19 properties, and undertaken tracing activities.
- It is also working with the quarantined property owners to put steps in place to help them resume their business, while at the same time, making sure the bacterium does not spread any further.
- The Consultative Committee on Emergency Plant Pests continues to meet in response to this detection.
- The bacterium does not have any impact on human health.

### Advice to growers

- *Dickeya dianthicola* has a large potential host range and can persist in the soil for many months. In WA it has moved from dahlia to potato, proving that it can easily transfer between different crops.
- A number of hosts may be asymptomatic.

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- With this evidence, we are strongly urging all growers to put in place, or maintain, strict on-farm biosecurity measures. This will help to help restrict the spread and impact of this organism.
- You can get helpful information on the [farmbiosecurity.com.au](http://farmbiosecurity.com.au) website about the things you can do to prevent this bacterium getting onto your farm or spreading. Some of the critical measures you can take are:
  - to clean equipment, vehicles, machinery and footwear before entering a new crop, paddock, or another property
  - keep unnecessary visitors and vehicles out of your cropping paddocks
  - source your seed and bulbs from reputable suppliers
  - keep accurate records of seeds and plant material coming onto, and leaving your property.
- All potato, vegetable and flower growers as well as production nurseries need to be vigilant for signs of this pest in their crops. If you think your plants may be affected call the Exotic Plant Pest Hotline on 1800 084 881. This will put you in touch with your state department of primary industries or agriculture.
- Early reporting is critical in containing the bacterium and can lower the risk of it spreading to more properties.

## About the pest or disease

- Symptoms of *Dickeya dianthicola* vary depending on the host, bacterial concentrations and environmental conditions. In many cases it may be present in the host but may not show symptoms.
- *Dickeya dianthicola* was formerly recognised as the *Erwinia chrysanthemi* species, alongside other blackleg and soft rot bacteria that Australian growers would already be familiar with. *Dickeya dianthicola* is more aggressive than the blackleg most growers are familiar with, and has a higher optimum temperature range
- It is not known to be carried on true seed but is tuber-borne in potatoes. It is generally accepted that a major source for *Dickeya dianthicola* infection is through infected seed tubers. The disease may not be obvious at planting despite being in the tuber, with the blackleg only becoming apparent after emergence and in the case of *Dickeya*, with the onset of warmer weather.
- As the infected tuber rots, the bacterium is released into the soil and can then be transmitted through water in the soil and contaminate neighbouring tubers. Infected stems can also affect neighbouring plants through contaminated irrigation water.
- The disease may also be spread on machinery, tools, footwear and other risk items that are carrying contaminated soil, water or infected plant material.
- Additionally, infection has been shown to spread to other tubers during storage.
- In other plants such as host flowers, symptoms include soft rots, wilts, stem rot, dwarfing and stunting, although it is also possible for plants and bulbs to show no signs

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of infection. The WA Department of Primary Industries and Regional Development is currently researching further information on symptoms and pathways for spread.

- Overseas research indicates that *Dickeya dianthicola* may survive for several months in the soil without a host. Bacteria can survive between crops in soil when there is remaining plant debris or when volunteer plants are present.

## What growers need to look for

- Disease symptoms in potatoes include pre-emergence tuber rot leading to blanking (missing plants), blackleg, aerial stem rot and tuber soft rot in the field and in storage.
- The presence of slimy, wet, black rot lesions is a characteristic symptom of blackleg in potato. However, *Dickeya dianthicola* has a different odour to what would normally be associated with blackleg.
- According to overseas data, *Dickeya dianthicola* can also cause soft rot and wilting in ornamental crops although it is also possible for plants and bulbs to show no signs of infection.
- Other hosts plants include:
  - Begonia
  - Calla lily
  - Carnation
  - Chicory
  - Chrysanthemum
  - Dahlia
  - Dianthus, Sweet William
  - Freesia
  - globe artichoke
  - Hyacinth
  - Iris
  - Kalanchoe, 'Flaming Katy' which is also known as 'Christmas kalanchoe', 'florist kalanchoe' and 'Madagascar widow's thrill'
  - Potato.

## Origin

- In potatoes, *Dickeya dianthicola* is found in the USA and throughout Europe, including England.
- In ornamental crops it has been reported in Europe, Colombia, Japan, New Zealand and the USA.

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## Trade Implications

- Trade in potatoes from WA is currently prohibited due to the tomato potato psyllid outbreak, and interstate movement controls for risk material continue to apply. WA is working with other state and territory governments to develop protocols to support future interstate movements of risk material.
- Trade in cut flowers is already subject to a number of disinfestation treatments for other pests, and at present there are no further trade restrictions.
- The Australian Government Department of Agriculture and Water Resources will work with overseas trading partners should any issues arise.
- You should check the Interstate Quarantine website before ordering or transporting plants or plant material from Western Australia. [[interstatequarantine.org.au](http://interstatequarantine.org.au)]

## About the Consultative Committee on Emergency Plant Pest (CCEPP)

- The CCEPP provides technical and scientific advice in response to exotic plant pest and disease outbreaks. It involves the chief plant health managers and other specialists from federal and state government, Plant Health Australia, and representatives from affected industries including Nursery and Garden Industry Australia. It is chaired by Australia's Chief Plant Protection Officer.
- The CCEPP operates in accordance with the Emergency Plant Pest Response Deed (EPPRD). The EPPRD is a formal legally binding agreement between Plant Health Australia, the Australian, state and territory governments, and national plant industry bodies which are signatories. The EPPRD covers the management and funding of nationally agreed responses to plant pests and diseases.

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