

Exotic Pest Alert: Bacterial panicle blight

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Plant Biosecurity & Product Integrity

Bacterial panicle blight (*Burkholderia glumae*) is an exotic plant pest **not present in Australia**

This disease is a serious threat to Australia's **rice industry**

If symptoms are seen it must be reported promptly to the **Exotic Plant Pest Hotline 1800 084 881**

Bacterial panicle blight

Bacterial panicle blight is also called bacterial grain rot or panicle blight.

Bacterial panicle blight is seed transmitted.

Symptoms

Symptoms appear at heading without prior warning. Small clusters of panicles do not develop properly during grain fill and the panicles remain upright rather than bending down with the weight of the grain (Figure 1).

Infected grains can be unevenly distributed on the panicle (Figure 2).

The stem below an infected panicle remains green.

Blanked grains are uniformly tan at first. These aborted grains may later turn greyish, black or pink as other bacteria or fungi become established in the hulls.

Grains which fill but are infected later in the season have a light to medium brown discolouration on the lower third to half of the hulls (Figure 3).

Hosts

Rice (*Oryza sativa*) is the only known host of bacterial panicle blight.



Figure 1 Rice infected with bacterial panicle blight



Figure 2 Rice grains infected with bacterial panicle blight



Figure 3 Brown banding on infected rice grains

Disease lifecycle

Bacterial panicle blight can survive as a surface non pathogenic population on rice leaves and sheaths. These bacterial colonies can spread upwards as the plant grows.

Bacteria infect the developing grains at flowering and cause grain abortion or rotting during grain filling after pollination.

Susceptibility to infection falls about six days after flowering.

Bacterial panicle blight tends to develop in circular patterns in the field. The pattern is exaggerated because the most severely infected panicles in the centre of a patch remain upright due to sterility (Figure 4).

Bacterial panicle blight is associated with extended hot and dry summer weather conditions. Prevalence increases when daytime temperatures are above 32°C and night time temperatures remain 25°C or above. High nitrogen levels contribute to disease development.

Spread

Bacterial panicle blight is seed transmitted.

There are no practical control options if infected rice is planted.

Distribution

Bacterial panicle blight occurs in Japan, Taiwan, Latin America and the USA.

Bacterial panicle blight is not present in Australia.

Actions to minimise risks

Put in place biosecurity best practice actions to prevent entry, establishment and spread of pests and disease:

- practice “Come clean, Go clean”
- ensure all staff and visitors are instructed in and adhere to your business management hygiene requirements
- source propagation material of a known high health status from reputable suppliers
- keep records



Figure 4 Symptoms of bacterial panicle blight expand in a circular pattern within a crop

Reporting

If you suspect bacterial panicle blight:

Call the Exotic Plant Pest Hotline on
1800 084 881

Email clear photos with a brief explanation and contact details to biosecurity@dpi.nsw.gov.au

An **exotic plant pest** is a disease causing organism or an invertebrate not present in Australia and which threatens agricultural production, forestry or native and amenity plants.

Resources

Plant Health Australia (2009) Pest Risk Review – Bacterial grain rot

Louisiana Plant Pathology Disease Identification and Management Series – Bacterial Panicle Blight of Rice

Figures 1 to 4 courtesy of Donald Groth, Louisiana State University AgCenter, Bugwood.org

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