

Karnal bunt

What is Karnal bunt?

Karnal bunt (*Tilletia indica*) is a fungus affecting grains of wheat, durum and triticale. It reduces grain quality through the production of masses of powdery spores that discolour the grain and grain products. It is recognised by a 'dead fish' smell.

If Karnal bunt was detected in Australia, grain export markets would be affected, as many countries have import restrictions for this pest. Therefore, this fungus poses a major threat to Australia's grain industry. The sooner a potential introduction of Karnal bunt is detected and reported, the greater the chance of rapid and effective eradication.

What does it look like?

While infection starts in the field, symptoms of this fungus are most easily seen in harvested grain, and range from pinpoint sized spots to thick black spore masses running the length of the groove in the grain. Usually only part of each grain is affected, although occasionally the whole seed will be blackened with a sooty appearance. Infected parts of each grain will crush easily producing a black powder between the thumb and forefinger. Often the grain will have a rotten fish smell.

Detecting the pest on cereal heads in the paddock is difficult, as usually only a few seeds in each head are affected.

What can it be confused with?

Karnal bunt looks and smells very similar to common bunt, which is found in Australia. However, common bunt usually affects entire heads and seeds of the cereal plant while Karnal bunt usually affects only portions of some seeds in the head.

Karnal bunt is also similar to loose smut, flag smut and black point. Loose smut converts grain seeds and flowering parts to masses of black spores and is very obvious. Flag smut affects the leaves. Black point is a dark discolouration at the ends and crease of wheat and barley seeds which is caused by environmental conditions. No spores are produced by black point.



Karnal bunt affected stored grain

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Karnal bunt affected wheat head

Ruben Durán, Washington State University, Bugwood.org



Blackened and hollow grain resulting from Karnal bunt infection

Ruben Durán, Washington State University, Bugwood.org

What should I look for?

Infected parts of grain will have a blackened and sooty appearance, and may produce a 'dead fish' smell. Infected parts of grain may crush when handled producing a greasy black powder.

How does it spread?

Karnal bunt spores can survive for many years in grain, soil and cereal trash, and spread with these commodities. These fungal spores are small, light and long-lived, and as such can be spread between paddocks by wind and water, and on machinery or in soil.

Where is it now?

Karnal bunt was first detected in India and is also found in Pakistan, Nepal and many middle-eastern countries. Although also present in South America, South Africa and the USA, it is confined to specific areas and is under quarantine.

How can I protect my farm from Karnal bunt?

Check your stored grain frequently for the presence of new pests and unusual symptoms. Make sure you are familiar with common grain pests so you can tell if you see something different.

If you see anything unusual, call the **Exotic Plant Pest Hotline** on **1800 084 881**.

EXOTIC PLANT
PEST HOTLINE
1800 084 881

GRAINS FARM BIOSECURITY PROGRAM

An initiative of Plant Health Australia and Grain Producers Australia



Grain showing Karnal bunt infection symptoms

PaDIL



Symptom range of Karnal bunt in stored grain

Dept. of Plant Pathology Archive, North Carolina State University, Bugwood.org



Karnal bunt infected mature seed head

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