

Karnal bunt

Tilletia indica

What is it?

Karnal bunt (*Tilletia indica*) is a fungus affecting grains of wheat, durum and triticale.

Karnal bunt is not present in Australia.

It does occur in the USA, Mexico, India, Afghanistan, Pakistan and parts of Nepal and Iraq.

If introduced into Australia, Karnal bunt would be almost impossible to eradicate as its spores can live in the soil for five years or more until conditions favour growth, usually a period of cool, wet weather.

An incursion of this fungus could severely disrupt international trade and have a major economic impact on our agricultural industry, as a major exporter of wheat.

Karnal bunt is most likely to enter Australia either on diseased grain or as spores on travellers' clothing. To prevent the introduction of this disease to Australia it is important that all seed imports to Australia occur through appropriate quarantine facilities, and that travellers to overseas farms thoroughly wash all clothing on return to Australia. Suspect samples must be reported to Biosecurity SA immediately.

What does it look like?

Karnal bunt is not easily detected prior to harvest, since it is usual for only a few seeds in each head to be affected by the disease.

The 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.

What can it be confused with?

Karnal bunt looks and smells very similar to Common bunt, which is found in Australia. However, Common bunt 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



Two ears of wheat smutted

Source: Ruben Durán,
Washington State University,
Bugwood.org

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.

How does it spread?

Karnal bunt spores can survive 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.

What can I do?

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.

Reporting

Suspect samples must be reported immediately.

Call the Exotic Plant Pest Hotline



Karnal bunt intensity on wheat seed
(Top – healthy, Bottom – complete infestation)

Source: [Department of Agriculture, Water and the Environment](#)