

## Wheat stem rust, pathotype Ug99

### What is Ug99?

Wheat stem rust (*Puccinia graminis* f. sp. *tritici*) is a fungal pest of wheat and other cereal crops. A number of pathotypes of this pest are already present in Australia and resistant wheat varieties have been bred to limit crop losses. However, a new pathotype was discovered in Uganda in 1999, known as Ug99, which has overcome the resistance gene *Sr31*. Two recently derived pathotypes have also acquired additional virulence for *Sr24* (2008) and *Sr36* (2009). While Australia uses other sources of resistance, it has been predicted that there will be significant increases in the cost of production to the wheat industry in Australia should this pathotype, or its derivatives, become established.

### What does it look like?

As with other wheat stem rust pathotypes, the first symptoms are elliptical blisters on the stems and leaves of the plant running parallel to the long axis of the leaf or stem. These blisters break open after a couple of days to reveal a mass of rust coloured spores.

### What can it be confused with?

Ug99 symptoms are identical to other wheat stem rusts already present in Australia. If stem rust is detected on any wheat lines that were thought to be resistant to Wheat stem rust, samples should be sent for testing.

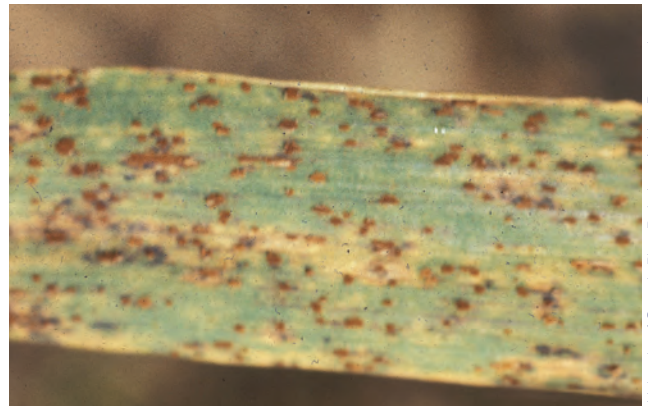
### What should I look for?

The development of stem rust symptoms on wheat lines that are resistant to endemic species of stem rust.



Spore pustule masses can develop on the leaf surface

R.L. Croissant, Bugwood.org



Spore pustules present on the leaf surface

University of Georgia Plant Pathology Archive, Bugwood.org



Wheat stem rust spores can build up to large levels under ideal conditions

University of Georgia Plant Pathology Archive, Bugwood.org



Cesar Calderon, USDA APHIS PPO, Bugwood.org

Wheat stem rust spores present on cereal stem

### How does it spread?

Rust spores are small, light and may survive for several days. They can be spread over large distances by wind and easily attach to clothing, machinery and tools allowing movement and spread between farms and regions. They may also transfer across the world on travellers' clothing.

### Where is it now?

Pathotype Ug99 was first detected in Uganda in 1999, and subsequently reported in Kenya, Ethiopia, Sudan and Yemen. It was identified in Iran for the first time in 2007.

### How can I protect my farm from Ug99?

Check your farm 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**

**EXOTIC PLANT PEST HOTLINE  
1800 084 881**



Ieda Pau, Small Grain Institute, Bugwood.org

Stem rust spores visible on wheat head



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