

# Barley growers advised to get winter crop ready

**B**ARLEY growers are being advised to get winter crop ready and reduce costly disease issues, like barley stem rust, by taking action now to control weeds and crop volunteers. The advice comes from Queensland Department of Agriculture and Fisheries (DAF) pathologist Lisle Snyman. An outbreak of barley stem rest occurred late last season in southern Queensland.

Lisle says the dry conditions in 2018 in the eastern states resulted in low overall disease levels, so it was surprising to see such an outbreak on the Darling Downs in October.

"Most crops in the region had been planted in June, which was not particularly late," Lisle said. "But a dry season meant crops generally hadn't received early fungicide applications.

"The development of stem rust is favoured by warmer temperatures late in the season and typically barley crops are drying down and not vulnerable at this time.

"But when storms in October 2018 delivered significant rainfall across much of the central and eastern Darling Downs, many barley crops developed late tillers, and this increased the vulnerability of crops to stem rust."

## Barley infected by three types of stem rust

Barley can be infected by three types of stem rust:

- Wheat stem rust;
- Rye stem rust; and,
- A form that is regarded as a hybrid between the two known as 'scabrum' rust. This pathogen is mainly found on the native grass *Elymus scaber* (common wheat grass) where it is thought to have developed.

Lisle said extensive testing of crop samples from 2018 had identified the disease as scabrum rust, which is not a new pathogen and importantly does not infect wheat.

"It was important to understand what form of stem rust was being seen in paddocks, to determine the level of risk to crops. Screening by the Australian Cereal Rust Control Program at the University of Sydney confirmed scabrum rust, which was reassuring as this pathogen poses no threat to wheat production."

## Strategies to minimise the risk of disease

"While we don't fully understand the stem rust outbreak on the Darling Downs in 2018, we do know there are strategies we can use now to minimise the risks for 2019," Lisle said.

Rust is considered a major disease of cereals worldwide. The rust pathogen has the ability to adapt to a range of environments. Spores are windborne and easily spread – as little as one infected leaf per 12 hectares of regrowth surviving through summer and early autumn can cause a rust epidemic in the following cereal crop.



DAF pathologist Lisle Snyman.

Critically, Lisle said the rust pathogen was a biotroph, meaning it required a living host for survival.

"This pathogen can not survive in stubble, so by controlling the 'green bridge', or crop volunteers, and native grasses (such as *Elymus scaber*), grain growers can significantly reduce the potential risk of rust outbreaks in winter crops," she said.

"It is important growers take action where appropriate now to control the green bridge, because most barley varieties are vulnerable to stem rust infection and will host wheat, rye and scabrum rusts."

Lisle presented her findings on the Darling Downs stem rust outbreak in late 2018 as part of her presentation at the GRDC Grains Research Update in Goondiwindi on March 5.



An outbreak of barley stem rest occurred late in the 2018 season in the Brigalow, Chinchilla, Dalby, Brookstead and Jandowae regions of southern Queensland. This was surprising given the dry seasonal conditions. (PHOTO: DAF)