



Crop Pathology

SARDI

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Crop Watch



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Changes in cereal variety disease resistance ratings for 2010.

Each year some changes are made in ratings for the cereal diseases based on new information, strain changes, higher disease levels and/or different seasonal conditions. Most changes are only slight as information is refined but occasionally significant changes occur. This year we are using Crop Watch to explain and/or highlight some of the changes which have been included in the 2010 Sowing Guides soon to be released.

For the wheat rust diseases a national coordination meeting is held in December to agree on common ratings for varieties across Australia. The SA ratings for 2009 are aligned with these except for Wyalkatchem where SA experience meant that a lower rating (S) for stripe rust was justified.

Net form net blotch

NFNB was present in several NVT trials in SA in 2009. In some cases the new Maritime strain was present whilst in

others we observed the Keel virulent strain. This was the first opportunity we have had to observe the field reaction of varieties to both of these strains. The Sowing Guide and Cereal Variety Disease Guide ratings assume that both strains will be present in 2010 and so the worst rating for each variety is presented.

Maritime is now rated as VS. Schooner has been downgraded to MR-MS and Fleet has been upgraded to MR. A severe hotspot was observed in a Fleet crop at Ungarra in September and this is being investigated. For the guides however we are assuming that no change will be observed in Fleet crops in 2010. Hindmarsh and Baudin both responded as susceptible in growth room tests to the Keel strain but in the field they have reacted as MR-MS and MS respectively. For this reason we have removed the # from the disease guide rating suggesting these lines may be susceptible to the Keel strain.

Spot form net blotch

SFNB showed some quite large differences in variety rankings in 2009. These differences may be environmentally induced as it is not clear that there are any differences in pathotype strains. Hindmarsh (S) in particular varied from MS at Port Clinton and Crystal Brook to S-VS at Bute and Cummins. Commander on the other hand was a consistent MS at four sites so has been upgraded to MS-S from its previous rating of S. Capstan (MS-S), Flagship (MS) and Yarra (MS-S) have all been downgraded by one rating based on their poorer performance in some trials in 2009.

Barley leaf rust

Barley leaf rust is inherently variable in SA most likely due to the presence of the Star of Bethlehem, the alternate host on the Yorke Peninsula, which helps to maintain variability in the pathogen. Most of the pathogen variation is in virulence on adult plant resistance which is not detected in the seedling tests conducted by the Australian Rust Control Program in Sydney University. The leaf rust population is uniformly highly virulent on Keel (VS) and Schooner (S-VS) but in 2009 Buloke (S-VS), Flagship (S), Fleet (S) and Barque (MS-S) showed increased susceptibility at three sites on the Yorke Peninsula but remained more resistant at Cummins.

Stripe rust

The return of the stripe rust strain with virulence on the Yr17 resistance gene has improved the precision of ratings of varieties carrying the gene. Mace was observed to be very susceptible in SA and Victoria compared to previous observations made in Sydney. Mace has now been rated S-VS for SA conditions. Both Mace and Wyalkatchem show similar high levels of susceptibility early in the season but Mace appears to be missing most of the higher temperature resistance in Wyalkatchem that can confer useful late season resistance in this variety. This difference will also make Mace a more likely host for overwintering of stripe rust.

Septoria tritici blotch

Favourable seasonal conditions with higher rainfall meant that more reliable data was obtained at Wanilla and Turretfield than in the past two years. Catalina (MS), CLF Janz (MR-MS), Gladius (MS-S), Mace (MR) and Wyalkatchem (MR) have been given a rating one level better than before whilst Espada (S), Kukri (MR-MS) and Ruby (MS) have been rated one level more susceptible. Axe has been significantly downgraded and is now S-VS. The good news is that inoculum levels of this disease remain very low despite the good season and therefore the risk from this disease in 2010 remains low.

Test pulse seed for virus infection

Virus infection has been widespread in pulse crops in 2009 with varying levels of severity. Surveys and diagnostic tests have shown the most prevalent are Cucumber Mosaic Virus (CMV), Pea Seedborne Mosaic Virus (PSbMV) and Beet Western Yellows Virus (BWYV). The principal source of infection for CMV and PSbMV is seed. BWYV is not seedborne but is transferred between plants and crops by aphids. Virus surveys in previous seasons have shown that CMV is often present in lentil crops in South Australia.

- Lentil seed should be tested for CMV infection as it is a significant source of virus that initiates epidemics. The virus is transferred by aphids from the seed infected plants into neighbouring plants and nearby crops, including chickpeas.
- While CMV infection in chickpea seed is often rather low, these seed lots should also be tested because the crop is very susceptible once the virus starts to spread.

- Pea seed should be tested for PSbMV. This virus is widespread across South Australia and could be responsible for significant yield loss.
- Viruses are transferred by aphids into an otherwise healthy crop. Good crop management to produce a healthy canopy and good weed control will reduce the virus infection.

Grading seed prior to testing may reduce the percentage of seed with virus infection since infected plants are more likely to produce smaller seed.

Seed can be tested for virus at

- Agwest Plant Laboratory, DAFWA, 3 Baron-Hay Court, South Perth WA, 6151, Phone 08 9368 3721; Fax 08 9474 2658; email:agwestplantlabs@agric.wa.gov.au
- Agrifood technology 260 Princes Highway (PO Box 728), Werribee Victoria, 3030, Phone 1800 801 312 or 03 9742 0555; Fax 03 9742 4228.

Crop Watch is an electronic newsletter service provided by SARDI.

If you would like to receive this newsletter please send your email address to Jon Lamb, Jon Lamb Communications jlcom@chariot.net.au - titled "Crop Watch request".



FEEDBACK WELCOME

The SARDI Pathology team invites you to contribute to this publication by reporting local observations or commenting on items in the newsletter.

Comments should go to:

Hugh Wallwork (cereals)

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Jenny Davidson (pulses and oilseeds)

davidson.jenny@saugov.sa.gov.au

*with a copy to **Jon Lamb Communications**
jlcom@chariot.net.au*

Unless specifically requested otherwise the name and location and/or company of the reporter may be included with published comments.

Reports, particularly of early sightings of rusts or where diagnosis is not certain, would have added value if accompanied by a paper-packed sample. Please do not send samples in plastic bags.