

# Early disease prevention is best

Farmers should remain vigilant to safeguard 2010's crops from diseases built-up by the wet spring of 2009. Scientists from SARDI's plant and soil health team have received an influx of infected crop samples, and widespread reports of a build-up of many of diseases in cereals, oilseeds and pulses favoured by the wet spring of 2009.

Pulse pathologist Jenny Davidson says while conditions may lead to a carry over of diseases into the 2010 cropping season, prevention can go a long way to keeping diseases in check.

"Disease prevention doesn't have to be complicated, with options including: upgrading varieties to those carrying the best disease resistance, organising a seed or soil test to identify the risks, using seed treatments, selecting paddocks carefully, and applying well-timed sprays," she said.

## Upgrade varieties

"New varieties of lentil, chickpeas and faba beans carry resistance to ascochyta, so where possible upgrade to resistant varieties.

"Using resistant varieties is a cost-effective approach across most crop types. Plant breeders spend years developing crops with resistance and a number of excellent pulse varieties have been released through Pulse Breeding Australia in recent years."

## Test seed and soil

Jenny suggests accessing seed tests to identify seed that carries low levels of disease. She says there has been a lot of aphid activity spreading viruses such as CMV (cucumber mosaic virus) in lentils and chickpeas, and PSBMV (pea seed borne mosaic virus) in pea seed. This has the potential to carryover into crops in 2010 and accessing seed tests at AGWEST Plant Laboratories at the Department of Agriculture and Food in WA (DAFWA) is highly recommended.

SARDI runs the national root disease testing service, PreDictaB, leading the nation in identifying the presence and levels of soil-borne pathogens in soil before sowing. The South Australian Grains Industry Trust has been a long term supporter of the service, with Plant Health Australia more recently adding support to industry training.

Growers can access the service through accredited agronomists before seeding to identify and measure the most common root diseases present in paddocks. These pathogens can interfere with root function and reduce a plant's ability to access water and



SARDI pulse pathologist Jenny Davidson looks over the new PBA Slasher chickpea with Elders Balaklava agronomist, Michael Brougham.

Picture courtesy GRDC

nutrients. Accredited agronomists and consultants will work with growers to interpret results and outline the best options for the cropping program.

Dr Alan McKay who runs the service expects growers managing intensive cereal cropping programs will need to be very careful with crop choices this year, and stand to benefit from identifying disease risks ahead of sowing.

"The wet spring may have encouraged take-all and a range of nematodes to build up, while reducing rhizoctonia, but this may change again depending on conditions over summer and autumn," he said.

"Having a soil test to gauge pathogen levels helps to take the guess work out of crop selection in paddocks, and is best arranged from February onward."

Dr McKay said PreDictaB has been developed for cropping regions in southern Australia and the service tests for: Take-all, Rhizoctonia barepatch, Cereal cyst nematode, *Pratylenchus* (two common types), Crown rot, Blackspot of peas and Stem nematode.

## Decision-models

The GRDC-supported Blackspot manager has been available to growers for two seasons through the web. It is an example of an excellent online decision-making tool which identifies the best sowing time for field peas. The model predicts the timing of release of blackspot spores from pea stubble and growers can plan to sow peas when the risk of blackspot is reduced. Jenny says the model has performed well in predicting the safer and riskier sowing windows.

"We can expect a high risk of blackspot in 2010 since pea stubbles are heavily infected. This will result in a lot of spores being released going into the next season. In 2010 it would be wise to plant pea crops as far away as possible from 2009 pea stubbles, and, in crops with a high potential yield, to be prepared to act with well-timed fungicide sprays," she said.

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### More information:

For SA cereal variety guides, seed treatment guides and root disease testing service, visit: [www.sardi.sa.gov.au](http://www.sardi.sa.gov.au) – look under products & services tab or phone: (08) 8303 9668.

Blackspot manager: [www.agric.wa.gov.au/cropdisease](http://www.agric.wa.gov.au/cropdisease)

Seed testing for viruses: [www.agric.wa.gov.au/agwestplantlabs](http://www.agric.wa.gov.au/agwestplantlabs)

## Cereal leaf diseases

Dr Hugh Wallwork, SARDI cereal pathologist, said the wet spring conditions in 2009 had set the scene for an increased incidence of several foliar pathogens, particularly net blotches, scald and yellow leaf spot.

"It's a good idea to avoid sowing the same type of crop in the same paddock year after year, especially barley, oats, pulses and canola, as this can dramatically increase inoculum and also lead to the break down of crop resistance," he said.

Over the last 3 years Dr Wallwork has observed two new strains of the net form of net blotch which have caused significant damage to Keel and Maritime barley crops on the Yorke and Eyre Peninsulas. He believes the practice of growers sowing barley into barley stubbles has contributed to this problem.

"We also need to reduce the area sown to the most susceptible varieties as these produce the vast bulk of inoculum," he said.

"Maintaining effective use of seed treatments and early application of fungicide sprays, when required, are also essential practices to keeping disease levels low."