

New varieties herald chickpea revival

KEY POINTS

- Chickpeas welcomed back to the Wimmera
- Two new ascochyta blight-resistant varieties planted this year
- Long-standing relationship with ICARDA paid off by having resistant varieties already in the pipeline when blight wiped out the industry in the late 1990s

New varieties for all potential chickpea regions in Australia – the southern, northern and western zones – are ushering in a fresh era for this potentially high-value crop that has struggled against disease, and was effectively wiped out in the southern zone. The new disease-resistant varieties, that are also said to show high-yield promise, will come on-stream later this year and in 2006, and are the first of a succession of improved varieties being trialled. Kellie Penfold and Trent Carslake report on this flurry of chickpea activity

By KELLIE PENFOLD

■ Two new chickpea varieties resistant to ascochyta blight are bringing the heartland of the original Australian chickpea industry back into the game.

The arrival of varieties Genesis 508 and Genesis 090 will see significantly more chickpeas sown next year than the initial 3500 hectares planted this year in Victoria's Wimmera region – which once had more than 150,000ha of chickpeas in production.

Michael Materne, program leader for chickpea breeding in south-east Australia, and chickpea breeder Kristy Hobson, with the Victorian Department of Primary Industries (DPI) based in Horsham, say the varieties are the first in a resistant series to be released over the next few years.

After ascochyta blight wiped out the industry in the Wimmera in 1998, the Victorian DPI fast-tracked its breeding program by looking to the Middle East, which had overcome its blight problems.

"Ascochyta is a major disease in the Middle East and they'd been breeding resistant varieties for a long time at the International Center for Agricultural Research in the Dry Areas (ICARDA), based in Syria," Ms Hobson says. "Chickpea varieties were bought in from ICARDA and were being evaluated in field trials when ascochyta blight first occurred in 1998."

Mr Materne says that while Genesis 508 and Genesis 090 are the first, there are more promising varieties in trials at the moment, with higher yields and better qualities than those interim releases.

"It has been about getting ascochyta blight-resistant varieties to farmers to fill the gap in their rotations."

Genesis 508 is a desi type – a brown, small-seeded variety used in processing. Genesis 090 is a kabuli-type chickpea, with a creamy seed that is eaten whole or used in processing. Genesis 090 is well adapted to most chickpea-growing areas of southern Australia and has matched the yield performance of the best desi varieties in all regions, a feat not seen or expected from a kabuli-type chickpea.

Both have been commercialised by Australia Agricultural Commodities (AAC). Genesis 508 is available in commercial quantities this year, while 1700ha of Genesis 090 has been planted to build up large seed volumes for 2006.

Australian chickpea breeders have a long-standing relationship with ICARDA and the chickpea breeding program, run by senior chickpea breeder Dr Rajinder Malhotra; this made an immediate response to ascochyta blight possible.

"ICARDA send over 100 breeding lines

to Australia each year for evaluation of their specific traits, and are released as varieties or used in a crossbreeding program along with the collection of more than 1000 types held in Australia," explains Ms Hobson.

"We were lucky there were already varieties such as Genesis 090 in the trial pipeline in Australia, which were bred in Syria with climatic conditions that match ours."

"It meant we could come up with a solution much faster and now we can use these base varieties to crossbreed for higher yielding and quality types."

"It is a credit to others in the industry, such as Janfort Bouswer, Trevor Boetig, Kevin Meredith and Wayne Hawthorne, who fostered these relationships and selected the Genesis series of chickpeas for release."

Mr Materne says the successful reintroduction of chickpeas will involve re-establishing the confidence of growers who were severely affected economically by the ascochyta blight epidemic.

He says the new varieties require far fewer fungicide treatments, but ascochyta blight must be managed in a sustainable way, using good agronomic practices and the strategic use of fungicides. Both Genesis 508 and Genesis 090 require a fungicide application during podding.

"Previously, growers thought of the kabuli chickpeas as low yielding and temperamental," Mr Materne says. "But Genesis 090 is tougher, like a desi type, and in a strange twist could give growers in traditional desiccating areas a more profitable chickpea option than prior to ascochyta blight, if the price of seven to eight-millimetre kabuli-seed is higher than for desis."

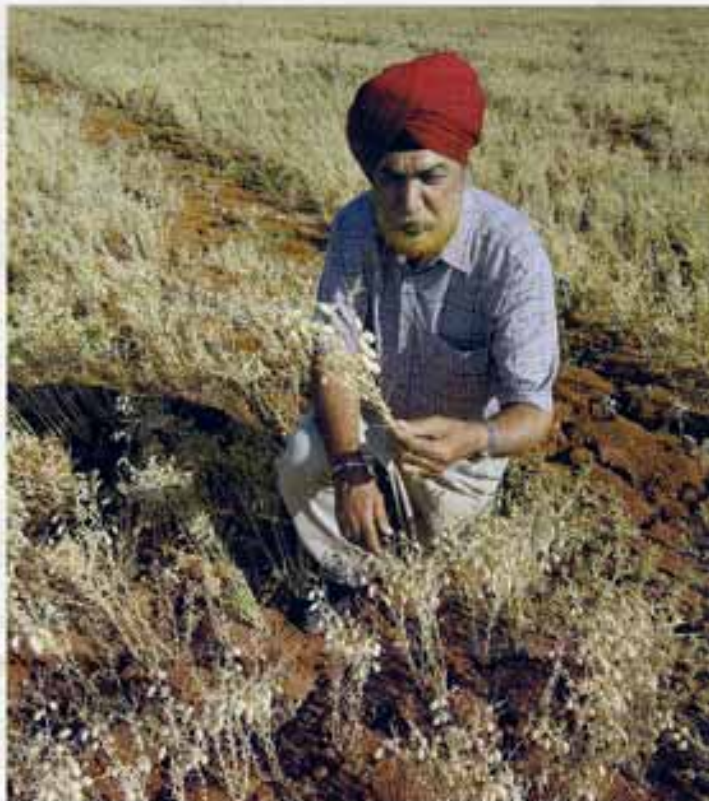
Pulse Australia has thrown its energy behind the development of the new varieties, planning a field day in November to showcase trials and demonstrations to growers.

Wayne Hawthorne, Pulse Australia's crop support manager for the southern/central region, says farmers are keen to learn more about the new varieties, particularly fungicide and herbicide management.

"The field day is being held as late as possible to show the plants in pod. We are confident they will yield the same as the varieties sown before the arrival of blight, yet with the improvements in farming techniques for moisture retention, we would assume yields could be even higher," he says.

The field day will be held on 2 November 2005 at Kalkce, 15 kilometres south of Horsham.

Visitors will be able to see a comparison of varieties under high disease pressure in sprayed and unsprayed conditions, ascochyta blight management options, herbicide tolerance, sowing date and plant density



Long-standing relationship: Dr R.S. Malhotra, chickpea breeder at ICARDA.

PHOTO: BRAD COLLIS



management, seed quality effects and nitrogen and phosphorus fertiliser effects.

Sponsored by the GRDC, AWB Seeds and Landmark, along with CropCare, sponsor of a new publication, *Chickpea Diseases and their Management for the Southern GRDC Region*, the field day will be the site for the launch of the new varieties for 2006.

AAC agronomist Trudy McCann (left) and chickpea breeder Kristy Hobson inspecting a 30ha crop of Genesis 090 at Boro, Victoria.



GRDC Research Code DAV451
For more information:
Michael Materne, 03 5302 2312
Chickpea field day, Kalkce
Wayne Hawthorne, 08 8764 7455, Jason
Brand, 03 5362 2341