

## Scene set for GM canola production

More than 350 Victorian and NSW growers and advisers have now completed an accreditation course that is a prerequisite for involvement in the production of Roundup Ready® canola this season.

This is the first year Australian farmers have been able to grow GM canola, following lifting of the moratoria on growing these crops in Victoria and NSW.

Accreditation is the first stage of a structured production system designed to ensure growers, and the canola industry, get maximum benefit from the new technology while minimising the risk of glyphosate resistance developing in weed populations.

This structured and supported management approach was pioneered in the cotton industry where GM technology has been part of integrated weed and insect control programs for a decade.

In addition to undertaking the accreditation course, which addresses field, technical and legal aspects, growers sowing Roundup Ready canola - the only GM canola available for commercial production in Australia this season - will sign a Technology User Agreement and a Licensing Stewardship Agreement that address production of the Roundup Ready crop and aspects of management across the property.

According to Andrew Wells, Nufarm Australia's Research and Development Manager, this structured approach is an integral part of the Roundup Ready production package for the life of the technology, just as it is with cotton in Australia and canola in Canada, where more than 40,000 canola growers each year sign annual technology use agreements as a condition of growing herbicide-tolerant GM varieties.

This herbicide-tolerant technology is based on the use of Roundup Ready herbicide - a special formulation of glyphosate - over the crop between emergence and the six-leaf stage but prior to bud formation. An important aspect of the wider weed control program is the use of herbicides with alternate modes of action to glyphosate and other weed control options. This is consistent with good integrated weed management principles.

Using glyphosate in-crop also means growers must ensure good spray application practices and minimise the risk of spray drift because they are likely to be spraying

close to seedling cereal crops that are highly susceptible to glyphosate.

Nufarm will have five technology demonstration sites in Victoria and NSW this year to demonstrate the effectiveness of the production package and the Roundup Ready technology under Australian conditions.

There is a limited commercial release of Roundup Ready canola in Australia this year so quantities of seed of varieties for use in Australia is limited, Mr Wells said.

Greater quantities of seed will be available to growers across Victoria and NSW next season through a network of accredited Technology Service Providers.

**For more information: Andrew Wells, 03 9282 1088, [andrew.wells@au.nufarm.com](mailto:andrew.wells@au.nufarm.com)**

## SA 'validation' for blackspot model

SA field pea growers concerned about blackspot disease would be well advised to schedule sowing for June, based on the predictions of the 'Blackspot Manager' model developed by WA Department of Agriculture and Food (DAFWA) researcher Dr Moin Salam.

The model was trialled in SA last season and this year there are detailed projections and indications of ideal seeding times for nine SA 'reference' locations on the DAFWA web site. They can be accessed by visiting [www.agric.wa.gov.au/cropdiseases](http://www.agric.wa.gov.au/cropdiseases), finding 'South Australia' under the Blackspot Management Guide heading and clicking on the link 'key locations throughout South Australia'.

The predictions, which are based on weather conditions, will be reviewed and upgraded weekly.

SARDI Senior Pulse Pathologist Jenny Davidson, who is co-ordinating the SA work, said it was intended to develop the model so it could be used in all field pea-growing regions but at this stage it was being used only in WA and SA as part of a 'validation' process.

The model is designed to indicate when field peas should be sown to minimise the risk of blackspot infection. This is based on when most blackspot spores have been released. The timing of spore release is determined by summer and autumn conditions and the frequency of rainfall.

The dry summer conditions and dry start to autumn this year means there have been almost no blackspot spores

released in SA so far this season so it will be risky to sow field peas early this season, Ms Davidson said. Experience suggests rain will trigger a large spore release that may coincide with the germination of early-sown crops.

“Sowing later reduces the potential growing season, which increases the risk of lower yields, but given the shape of the season so far it seems likely early-sown crops will be under extreme pressure from aerial spores of blackspot, which are in addition to the risk of soil-borne infection measured by PreDicta B soil tests,” she said.

“Growers will need to balance the risk of blackspot against the optimum growing season length, particularly in low-rainfall regions or districts with short growing seasons. In these ‘early’ areas sowing early may still be the better option despite the blackspot risk.”

**For more information: Jenny Davidson, 08 8303 9389, davidson.jenny@saugov.sa.gov.au**

## Time for vigilance

Mites and other crop establishment pests are active in districts that have received late summer or autumn rain and entomologists expect they will appear in other regions as soon as the season breaks.

Dr Paul Umina, research and extension officer with the University of Melbourne’s Centre for Environmental Stress and Adaptation Research (CESAR), suggests advisers should be checking paddocks to determine what mites and insects are active and identify what role they are playing in the paddock biology.

He would also appreciate news of reports or observations of invertebrate pests for inclusion in PestFacts South-Eastern edition, which is due to begin soon for the 2008 season. So would SARDI entomologists Ms Judy Bellati and Mr Ken Henry, who produce PestFacts SA and the western Victoria edition.

PestFacts, an electronic newsletter that is part of the GRDC-supported National Invertebrate Pest Initiative, draws on the field observations of consultants, growers and researchers to provide subscribers with timely information about pest outbreaks, effective controls and current information about relevant and new research findings.

Dr Umina is expecting reports of numerous pests, from redlegged earth mite and blue oat mite to lucerne flea, slugs and aphids but suggests growers also look out for other, beneficial species that are likely to be helping lower the pest populations.

“Research results and field observations over the past three or four years, and the increasing incidence and level of chemical resistance in many pests, have made us realise we need to know exactly what is happening in the paddock before deciding whether or not to spray,” he said.

“Spraying can make matters worse because it can wipe out the beneficials and leave the pest behind, particularly if the pest is resistant, so it is vitally important to accurately identify all the organisms that are present and what their roles are.”

PestFacts also provides a free identification service and the new edition of the GRDC’s ‘Crop Insects’ Ute Guide is also

a valuable field reference for identification of insects in crops and pastures in southern Australia.

To join the more than 1,000 advisers, consultants and growers already subscribed to PestFacts in SA, Victoria and NSW, or to report pest observations, contact **Paul Umina, 03 8344 2522; pumina@unimelb.edu.au; Ken Henry 08 8303 9540, henry.ken@saugov.sa.gov.au; Judy Bellati, 08 8303 9670, bellati.judy@saugov.sa.gov.au**

## Don’t ‘use up’ trifluralin

New pre-emergent herbicides for annual ryegrass are on their way. Boxer Gold is now available and BAY 191 from Bayer is currently scheduled for release in 2011.

With these new products coming there may be a temptation to stick with trifluralin until resistance to it develops then switch to the new chemistry, according to Dr Chris Preston of the University of Adelaide and Weeds CRC. However, farmers should resist this temptation, he said.

“Trifluralin remains a valuable weed management tool and growers should adjust their management so it remains available for use where it is most valuable.

“Neither Boxer Gold nor BAY 191 will be registered for use in canola. There may also be limited registrations in pulse crops. Trifluralin will still be needed for these crops.

“The simplest strategy would be for growers who don’t yet have trifluralin-resistant annual ryegrass to use Boxer Gold now for their wheat or barley crops and use trifluralin in the other crops”, he said. “This will serve to prolong the effective life of trifluralin.”

When BAY 191 becomes available, Dr Preston recommends building this product into the rotation as well. “With three pre-emergent products in the rotation, resistance to all the products can be delayed”, he said.

Boxer Gold is only registered for conventional cultivation systems and for no-till systems sown with narrow points. It is not registered for use with disc seeders.

**For more information: Chris Preston, 08 8303 7237, christopher.preston@adelaide.edu.au**

## Beware the green bridge

The potential impact of an autumn ‘green bridge’ on cereal rust pressure is well known, but the presence of grasses and cereals at this stage of the season is also implicated in the carry-over and build-up of other diseases including Wheat streak mosaic virus (WSMV) and Barley yellow dwarf virus.

Former NSW DPI plant pathologist Gordon Murray suggests growers planning to sow early cereal crops, whether for grazing or for grain production, can minimise the risk of WSMV by eliminating grasses in or near paddocks to be sown three to four weeks before sowing. Wheat curl mites (the vectors of WSMV) are unable to move from the dying host weeds to the germinating crop.

# No surprises in root disease results

Rhizoctonia and crown rot are both likely to provide root disease challenges for growers this season, according to SARDI Principal Research Officer Dr Alan McKay.

His observation, which is in line with expectations given last season's drought, is based on the PreDicta B results for soil samples from cropping paddocks.

Rhizoctonia can be unpredictable and difficult to control, with current management strategies aimed at improving the ability of the plant to cope by increasing root vigour and depth.

Early sowing, cultivation below the seed and good nutrition will help reduce the impact of Rhizoctonia.

Crops that germinate in warm moist soil quickly establish a vigorous root system that helps minimise the impact of Rhizoctonia, Dr McKay said. However the crown roots may be affected as these are produced later when the soil is often cold.

Rhizoctonia is often most damaging when the season breaks late and crops have to germinate in cold soil.

The best way to minimise the impact of crown rot is to sow less-susceptible crops. Pulses, for example, are not affected by crown rot.

Avoid sowing cereals, particularly durum, where there are significant levels of the disease. If cereals must be sown, bread wheat or barley are the best choices. Of the bread wheats, Kukri is the least susceptible to crown rot but should only be sown in areas where it is suited agronomically.

One positive trend from PreDicta B results so far this season is that CCN levels appear to be declining; probably due to greater use of resistant varieties, Dr McKay said.

The results also show low levels of the take-all fungus in about half of the soil samples.

In most districts, take-all has not been a significant problem for the past 10 years or so but the disease likes above-average seasons so it would have been favoured by the good early start last season. However, the dry spring would have stopped it reaching medium to high levels.

While some growers will benefit from using seed treatments to reduce the impact of take-all this season, measures to counter the disease will be more important in 2009 if there is above-average rainfall this year, Dr McKay said.

This year Rhizoctonia and crown rot look like being the main soil-borne disease risks to focus on.

**For more information: Alan McKay, 08 8303 9375, [mckay.alan@saugov.sa.gov.au](mailto:mckay.alan@saugov.sa.gov.au)**

## Benefits from using rhizobia 'every year'

New research suggests growers could benefit by applying an appropriate rhizobial inoculant every time they plant a grain legume.

Costings based on results from field trials in SA, NSW and Victoria last season indicate the use of an effective inoculant on pulses increased grain yields by an average of almost 13% and net income by more than \$40/ha at a price of \$300/t.

According to NSW DPI research scientist David Herridge, inoculation of crops in some soils can increase pulse yields by '50 to 150%'.

Sanford Gleddie, CEO of Philom Bios Australia, which is exploring the potential of inoculants in Australia with research partners including the GRDC, ANU, CSIRO, SARDI and Flinders University, said the latest trial results show growers should not rely on carry-over of rhizobia from one pulse crop to the next.

Rhizobial bacteria are highly susceptible to dehydration so numbers fall soon after the end of the growing season, Mr Gleddie said.

"Rhizobia can survive in the soil if the conditions are right but soon die in soil and become less effective, especially in hot, dry or saline conditions, or in soils with high or low pH.

"Maximum N fixation can occur only if a legume root comes into contact with high numbers of effective rhizobia during the early growth stages, and the number of effective bacteria that survive from one crop to the next is seldom sufficient to ensure optimum nitrogen fixation.

"Consequently, growers can expect to see a yield benefit from using an inoculant almost every time they sow a pulse provided there is enough moisture to grow a crop."

The strains of rhizobia used and the number of bacteria per gram of product in Australian inoculants are controlled by the Australian Legume Inoculants Research Unit. However the characteristics of the 'formulations' or delivery systems used for different products can significantly affect survival of the rhizobia on the seed or in the ground, Mr Gleddie said.

For the best results it is important to apply good numbers of organisms and choose the best 'formulation' for the particular paddock situation.

For example, growers who decide to dry-sow legumes should use peat-based granular formulations to maximise the chances of the bacteria surviving until the crop germinates.

**For more information: Sanford Gleddie, 1800 178 263, [sgleddie@philombios.com](mailto:sgleddie@philombios.com)**

## New fact sheets for mixed farmers

Fact sheets on the interaction between Biodiversity and Productivity, Feedbase Management, which deals with how to address 'feed gaps' by analysing feed supply and demand, Grazing Cereals and Integrated Pest Management have been developed as part of the Grain & Graze project.

**They are available free from Land & Water Australia, phone 1800 776 616 or visit <http://products.lwa.gov.au/products.asp> to order or download.**

## IPM option 'for those who want it'

"Integrated pest management (IPM) is not for everyone, but for those who want to, an IPM approach can be used now," IPM Technologies principal Paul Horne told growers at the recent GRDC Update at Coolamon.

"Broadacre IPM is working successfully in the paddock on properties in both Victoria and NSW", Dr Horne said.

Advisers – and their clients – wanting technical information on IPM could find 'Integrated Pest Management for Crops and Pastures' a useful reference.

The new book, written by Paul Horne and Jessica Page and published by CSIRO Publishing, details the principals and elements of IPM, what is involved in a successful IPM program and how to implement an IPM plan.

However, Dr Horne's experience suggests growers wanting to change from reliance on insecticides to IPM, which combines biological, cultural and chemical tools to achieve long-term sustainable pest control, will require more than a book to make the transition successfully.

"In the initial stages at least it is important to have an IPM specialist involved in the decision-making process. The grower and agronomist need reassurance that it is all right not to spray which is counter-intuitive for someone who has previously relied entirely on spraying.

"IPM is more complex than a chemical control program but it can also be far more robust and resilient and is more flexible because the specifics vary with the biology in the paddock and the characteristics and tolerances of the grower."

Accurate identification of pests and beneficial insects is an essential skill for farmers and advisers using IPM and the new edition of the GRDC's 'Crop Insects' Ute Guide is an invaluable field reference for identification of insects in crops and pastures in southern Australia.

**For more information: Paul Horne 03 9710 1554, [ipmtechnologies@bigpond.com](mailto:ipmtechnologies@bigpond.com)**

## Nuffield scholarships

Grain growers aged 28-40 are invited to apply for three GRDC-supported Nuffield Australia Farming Scholarships.

Successful applicants will undertake an initial six-week focus program then travel overseas for 10 weeks to pursue their individual study topics.

Applications close on 30 June 2008.

**For more information: Jim Geltch 03 5480 0755 or visit [www.nuffield.com.au](http://www.nuffield.com.au)**

## Costs, prices lifting GPS benefits

Lower equipment prices, higher input costs and rising grain prices are combining to increase the scale of benefits available from using GPS-based technologies such as auto-steer and variable rate technology.

Growers using or considering GPS-based equipment can also expect higher levels of support in forms ranging from better-trained support staff to 'remote' computer-based 'repair' services that are able to diagnose and repair faults by phone.

Currently, variable rate technology is gaining acceptance, though is less widely used than guidance. Sensors are steadily making the transition from research tool to farmer equipment.

Addressing farmers at a recent GRDC Update at Coolamon, GPS Ag field officer, Neville Gould said the current high price of inputs such as fuel, fertiliser and chemicals and the decreasing cost of GPS-based technology is making auto-steer more affordable than ever.

However, growers need to make sure they are operating as efficiently and effectively as possible because a gain of even one or two per cent soon adds up.

Changes in the GPS market include the production of computerised equipment designed specifically to replace old technologies such as foam markers.

A basic GPS-based guidance unit with 10-centimetre accuracy now costs less than a foam marker, he said.

At the other end of the market, top-end RTK auto-steer units are available for around \$45,000; about half of what comparable technology cost five or six years ago.

**For more information: 0427 428 707, [neville.gould@gps-ag.com.au](mailto:neville.gould@gps-ag.com.au)**

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