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THE AUSTRALIAN AGRONOMIST MAGAZINE

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THE AUSTRALIAN AGRONOMIST

Fortuna Villa, 22 Chum Street, Golden Square VIC 3550 Australia
P: 03 5441 8166 **E:** info@theaustralianagronomist.com **W:** www.theaustralianagronomist.com

Publisher
Paul Banks
Email: paul@regionalreachpublishing.com
Phone: 03 5441 8166

Design & Advertising
Kate Griffiths
Email: info@regionalreachpublishing.com
Phone: 03 5441 8166

Administration & Advertising
Caitlyn Hamilton
Email: caitlyn@regionalreach.com
Phone: 03 5441 8166

FRESH PATHWAYS INTO WORK FOR THE NEXT GENERATION OF AGRICULTURE

Budding agronomists, livestock managers and farmers will have the opportunity to immerse themselves in a two-year employment program to get a head start in the agriculture industry.

Minister for Agriculture Dugald Saunders said the Agricultural Pathways Program targets recent school leavers to join the managing teams of the Department of Primary Industries' 13,000-hectare research station portfolio.

"Ag provides incredible career opportunities and a fantastic way of life, and we are looking forward to the next generation stepping into this space," Mr Saunders said.

"From precision agriculture to drone technology and finding innovative solutions for tomorrow, there has never been a more exciting time to be in the industry.

"The best way to secure our agriculture workforce for tomorrow is to invest in the next generation today."

Successful applicants will take on the role of Farm Assistant, with key accountabilities including general crop, pasture, animal and farm operations, horticultural activities, livestock handling, tractor and farm equipment maintenance and general farm upkeep.

The program adds to the NSW Government's approach to supporting the future agriculture workforce of NSW, with education and skill-based programs that start in primary and secondary school, through to tertiary and post-tertiary education levels, including Indigenous Pathway opportunities and the dedicated educational institution Tocal College.

Minister for Skills and Training Alister Henskens said it is important for the NSW Government to continue thinking outside the box when it comes to vocational education and training.

"We want to provide more opportunities for young people to get the skills they need for the jobs they want, and this program is another great example of that," Mr Henskens said.

"By giving school leavers a foot-in-the-door, they can learn on the job and build industry connections, which in turn helps employers identify talent for ongoing roles within the sector."

Minister for Regional Youth Ben Franklin said the program will play a key role in promoting agricultural careers in the regions for young people across the state.

"Not only does the Agricultural Pathways program offer employment and training to young people, it also encourages them to stay local instead of having to travel to a city for further education, work, or training, which is a fantastic result," Mr Franklin said.

Applications are open for the NSW Government's Agricultural Pathways Program. For more information visit www.dpi.nsw.gov.au

RYEGRASS IS ADAPTED TO CLIMATIC RANGE

Once considered a winter weed of southern cropping zones of Australia, annual ryegrass is being increasingly observed in more northerly districts and in summer crops in Victoria and South Australia.

With investment from the Grains Research and Development Corporation, researchers at the Queensland Alliance for Agriculture and Food Innovation, University of Queensland conducted a series of ecological studies to better understand the environmental parameters required for germination of this widespread and costly weed.

Bhagirath Chauhan, professor at the University of Queensland's Centre for Crop Science, Michael Thompson and Gulshan Mahajan studied the effects of temperature, salinity, drought, light and burial depth on germination of seed collected from annual ryegrass (Lolium rigidum) populations from northern and southern NSW and Victoria. One of the three populations was known to be resistant to glyphosate.

"The results of this study suggest that annual ryegrass could easily establish in areas outside the southern cropping zones of Australia, and that glyphosate resistance had effect on germination rates," said Dr Chauhan. "The three populations achieved germination rates of over 90 per cent under day night temperature regimes ranging from 20/10 to 35/25 degrees C, and around 80 per cent at day/night temperatures of 15/5 degrees C. This suggests that this weed has the potential to germinate in field conditions in Queensland and New South Wales throughout the year."

It is worth noting that this study investigated only germination of ryegrass seed and not other attributes of the weed such as seed production under varying environmental conditions.

With no apparent bounds on the geographic range and seasonality of annual ryegrass, the presence of individual plants or small patches should prompt urgent attention from growers, keeping in mind that the weed incursion could already be resistant to a suite of herbicides.

Transient saline conditions affect up to 67 per cent of Australia's dryland cropping soils and high salt loads on the surface can inhibit ryegrass germination somewhat, however, if the seed does not decay due to long exposure, some seed is likely to germinate when there is sufficient rainfall to dilute the salts. Similarly, annual ryegrass seeds can maintain dormancy during drought conditions and 'revive' when moisture is available.

"Soil moisture is considered the main catalyst for germination of ryegrass seed," said Dr Chauhan. "Typically, ryegrass seed is dormant over summer months in southern growing regions when moisture is limiting, and germination occurs in late autumn. If ryegrass were to establish in areas where sufficient moisture is available for most of the year, then multiple germinations could occur through the year, making management very difficult."

Although exposure to light plays a role in breaking dormancy of ryegrass seed, even seed kept in complete darkness achieved germination rates above 70 per cent. The high rates (90 per cent) of germination in alternating light and dark conditions correlates with the highest germination rate also occurring when seed was placed at the soil surface rather than buried.

"Germination from a burial depth up to 4 cm was over 80 per cent," said Dr Chauhan. "Germination rates dropped significantly, but was still around 40 per cent, for seed buried at 8 cm, indicating that shallow seedbed cultivation would not sufficiently bury ryegrass seed to prevent germination."

Annual ryegrass is endemic throughout Western Australia, South Australia and Victoria where it is considered the #1 cropping weed and has an enviable track record for evading herbicides. In areas where this weed is 'emerging' it is safe to say that herbicides will not provide the best control. Ryegrass often establishes in patches and can be eradicated if early and decisive action is taken to prevent seed set using the WeedSmart Big 6 integrated weed management program.

In addition to following good farm hygiene and monitoring watercourses, boundaries and access roads, the single most effective tool growers can use against annual ryegrass is strong crop competition. Further research is required to determine the optimal sowing time and planting configurations for crops in the northern growing region to minimise the impact of this weed.

For more information about managing new ryegrass infestations, please visit the website: www.weedsmart.org.au

NEW WEED IDENTIFYING APP FOR AUSTRALIAN GROWERS, CROP TECHNICIANS AND ADVISORS

GmbH, part of BASF's Agricultural Solutions division, has officially launched its xarvio SCOUTING smartphone application (app) to support Australian growers, crop technicians, and agronomists. The app, which is free to download and use, has been specifically configured to accurately identify significant local weeds and diseases impacting key broadacre crops such as wheat, barley, and canola.

Developed by agronomists and farmers, xarvio SCOUTING uses an advanced plant modelling platform powered by live algorithms that continually improve precision and functionality through machine learning and data sharing. It can instantly detect infield stress and calculate leaf damage by simply taking a picture with a smartphone.

A unique community-based radar function allows growers to see threats in surrounding fields and notifies them once a threat is close to their area, so they can act.

"xarvio SCOUTING is developed for agronomists, crop technicians and farmers to easily identify and document problems in the field. You simply take a photo and instantly receive the result.

Armed with this information in-field issues can be more accurately diagnosed and better decisions can be made on appropriate treatments and timing," said Gavin Jackson, Head of Agricultural Solutions, BASF Australia and New Zealand.

Saving time spent on scouting expeditions and increasing growers' and advisors' access to detailed and beneficial information, xarvio SCOUTING is widely recognised as the most comprehensive, automated, agronomic problem identifier available globally. The app can identify more than 400 weed types and recognise damages caused by more than 400 different diseases, pests, and nutrient deficiencies in over 60 different crops. It is currently used by over six million farmers and consultants across more than 100 countries, with these numbers growing daily.

"We are confident that the app will be well-received and used in Australia. And as more and more growers and advisors use it and submit images of their crops, weeds and pests, the app's accuracy will continually improve and deliver relevant results".

To download the free xarvio SCOUTING app, visit Google Play or the App Store.

FASTSTART COTTON ESTABLISHMENT AWARDS

Favourable planting conditions made the 2020-21 FastStart™ Cotton Establishment Awards more competitive than ever, with the winners now named. Cotton Seed Distributors (CSD) and Syngenta, partners in the FastStart™ program, coordinate the awards as a means of celebrating excellence in crop establishment. Each season a grower in both the dryland and irrigated category are awarded for the best overall establishment of their cotton crop.

The winners of this year's dryland category are Will and Ben Coulton of 'Mullala' in Boggabilla, NSW. Will and Ben achieved a Planter Uniformity Index (PUI) of 0.271 and 95.9% establishment rate. In the irrigated category the winner is Terry Ryan of 'Milla-Lee' located at Bowenville, Queensland. Judges were impressed with his 0.034 PUI and 95.8% establishment rate.

CSD Extension and Market Development Lead Peter White thanked everyone who went to the effort of submitting an entry in this year's awards, noting the overall high standard of those entrants. Peter went on to congratulate the winners on their outstanding results.

"Achieving even establishment of a cotton crop requires attention to detail, which is where our winners this year shine," he said.

"Not only have they given themselves the best chances of maximising their yields, they've won one of Australia's most prestigious crop competitions."

The competition doesn't assess outright yield, instead emphasising establishment and the foundations for an efficient crop utilising tools such as the FastStart™ Cotton Soil Temperature Network, helping to manage early season yield limiting impacts. Planter uniformity and evenness of the emerging crop are key criteria that strongly align with FastStart™ principles. Growers are encouraged to adjust their row configuration and seeding rates for optimum seedling performance as a foundation for optimum efficiency and eventually yield.

"We have been growing cotton since 1988 and this is the first time we have entered into this competition since it's been running. I feel a bit shocked, but excited and privileged to have won," Terry Ryan said.

"I found the online tools invaluable in assisting us in the establishment phase including the FastStart™ Cotton Soil Temperature Network and the Cotton Field Weather Network."

Will Coulton said Mother Nature always played a big hand in establishment success but has found the FastStart™ tools extremely useful, particularly when optimising the planting window.

"We are very appreciative of winning this award and grateful that the FastStart™ program provides a means of rewarding growers who take the time to target the optimum planting window. The increased yield potential we all aim for by getting the cotton off to a good start is the main objective, but it is nice to be acknowledged as we often don't take the time to look back and reflect on the start we had."

The awards were launched in 2018 and have featured a winning dryland and irrigated cotton grower each year since. The awards support growers in their continuous efforts to improve the production methods. Past winners have participated in a study tour of agricultural enterprises within the Ord River irrigation system. Organisers are hopeful the trip will go ahead this year after a COVID-19 hiatus.

"There are many growers out there doing a great job of optimising their seedling establishment through the utilisation of Syngenta Seedcare™ technology that is applied to CSD seed, and the agronomic knowledge brought to light through extensive FastStart™ research projects," said Syngenta Seedcare™ Technical Services Lead, Sean Roberts.

"The Awards are a great way of doing this, as well as sharing what best practice looks like with other growers."

FastStart™ Cotton research and development is funded through the proceeds of each bag of seed sold through CSD, which comes with the added protection of Syngenta Seedcare™ treatments.

SUMMER WEED CONTROL IN A HIGH INPUT COST YEAR

With the cost of glyphosate sitting around $14 a litre, is it still worth spraying summer weeds?

WeedSmart's western extension agronomist Peter Newman says yes; spraying summer weeds is one of the greatest returns on investment in modern agriculture – preserving soil nitrogen and moisture reserves for the following crop.

"As Dr James Hunt's research at La Trobe University, Victoria showed, the top foot of soil will dry out over summer, regardless of how much stubble is on the soil surface, but transpiration by summer weeds is the only mechanism that can remove water from below 30 cm," says Peter.

In the face of high herbicide costs this season, growers who normally spray summer weeds as soon as they appear might be wondering if the benefit still outweighs the cost.

"I believe it will still be worthwhile because summer spraying preserves soil nitrogen, which is also very expensive, and the outlook for high grain prices is strong," he said. "In 2010 to 2012, Colin McMaster from NSW DPI did some great research that showed the measurable benefit of summer weed control was $7.20 per dollar invested, at a time when both herbicide costs and grain prices were lower than they are today."

Colin's research showed that controlling summer weeds more than doubled the plant available water (PAW) and mineral nitrogen available at sowing. Summer weeds were shown to affect soil moisture content to a depth of at least 1.2 m and each millimetre of moisture lost to weed growth reduced mineral nitrogen levels by over 0.5 kgN/ha.

To test if the cost benefit stacks up in today's economic environment, Peter went back to Colin's data and factored in current prices for chemicals and expected grain prices.

"If we double the 2010-12 cost of a summer herbicide spray program and use the 2010-12 grain prices of $240/t wheat and $500/t canola, the return on investment drops from $7.20 per dollar spent on spraying, to about $3.50," he said.

"If we then increase the wheat price to $360/t and canola to $750/t, and keep the chemical costs high, the benefit cost increases to about $5.50 per dollar spent – still a worthwhile return on investment when considering just the benefit of the conserved soil moisture."

The second big benefit to flow from summer weed control is increased soil nitrogen. Peter considered the scenario where 50 mm of summer rain falls, and by spraying summer weeds the grower is able to store about one-third, or 17 mm, for the crop to use during the growing season.

"Colin's research showed that an extra 9.5 units N/ha would be mineralised as a result of storing that 17 mm of rainfall," he said. "At $1500/t for urea, this extra N is worth $31 per ha, and this alone will pay for the summer spray. As a bonus, the extra 17mm of moisture will increase wheat yield by about 0.2 t/ha (assuming 12 kg/mm), making an extra $60 to $80/ha, depending on grain price."

"The WeedSmart Big 6 promotes tactics to keep weed numbers low because that is the best way to tackle herbicide resistance and grow more crop," he said. "The double-knock tactic is a highly effective tool that is worth considering, even at higher chemical costs currently affecting growers."

Peter is encouraging growers to continue with their standard summer weed control practices, and spray summer weeds early. Even though input costs will be higher than previous years, the benefits are likely to be significant as grain prices strengthen for the 2022 season.

For more information about summer weed management, please visit the website: www.weedsmart.org.au

FIRST SOYBEAN VARIETY WITH RESISTANCE TO LEAF RUST

Soybean growers can now benefit from the first soybean variety bred for NSW with resistance to soybean leaf rust (Phakopsora pachyrhizi), boosting grower's productivity and profitability.

Soybean leaf rust is a major concern for growers as the disease can rapidly move up the canopy, destroying the leaf and preventing grain from filling, which results in a reduced yield, seed size and quality.

A 2019 analysis, based on an edible grain price of $700 per tonne and a severe rust event occurring once every four seasons, estimated that the income benefit for soybean growers in choosing a rust resistant variety is worth around $2,500 per hectare.

Breeding and evaluating varieties of soybean to suit the wide variety of climates and farming systems in Australia is the focus of the Australian National Soybean Breeding Program, a collaboration between NSW Department of Primary Industries (DPI), CSIRO and Grains Research and Development Corporation.

NSW DPI Research Agronomist Dr Natalie Moore said the new variety named 'Gwydir' is high yielding, rust resistant and has improved weathering tolerance, providing greater crop security.

"'Gwydir' is an intermediate maturing soybean variety suited to the early sowing window of northern NSW production regions including the North Coast, Northern Tablelands, Northern Slopes and Liverpool Plains," Dr Moore said.

"Soybean growers in Central Western NSW may also consider the benefits of Gwydir over the more favoured fast maturing variety 'Moonbi'.

"'Gwydir' has a compact, branching plant type with narrow leaf shape, allowing aeration of the canopy and greater penetration of sunlight and sprays into the canopy. It is highly tolerant to pod shattering and lodging.

NSW DPI Research Agronomist Dr Natalie Moore

"'Gwydir' has greater weathering tolerance than early-sown soybean varieties such as 'Moonbi' and 'Soya 791' and will assist growers to maintain edible market quality and price in environments that experience heavy rainfall at harvest time."

Dr Moore said with the growing demand for plant-based food, 'Gwydir' has a high protein content suitable for higher value human consumption markets as well as animal feed and industrial uses.

"This new soybean variety has the same suitability as 'Soya 791' and 'Richmond' varieties for soy milk, flour and other human consumption uses," she said.

"Soybean crops are an integral part of many farming systems in northern NSW. They are high fixers of nitrogen and provide a profitable break crop for sugar cane growers as well as dryland winter cereal cropping and beef grazing enterprises."

TACKLING BARNYARD GRASS FOR A WATER EFFICIENT FUTURE

Suppressing the growth of one of the world's most prolific weeds, barnyard grass, with pasture legumes could be a key tool to support the Australian rice industry to improve yield, quality, and water efficiency.

Barnyard grass, an annual summer grass weed in Australia, competes with the establishment of rice in the water efficient drill sown rice system, causing rice yield losses and quality issues. Yield losses of up to five tonnes per hectare have been reported due to barnyard grass, and it's estimated that the weed can remove up to 80% of soil mineral nitrogen.

For Charles Sturt University PhD graduate, Dr Jhoana Opena investigating management methods for barnyard grass was an important strategy to assist Australia's rice industry to adapt to climate challenges.

"Barnyard grass is a major constraint as growers shift to water saving strategies in rice," she said. "The problem is in these systems, such as drill sown rice and delayed permanent water, barnyard grass proliferates – it grows really well."

Found in 61 countries and growing as a weed in 36 different crop types, Jhoana said barnyard grass was also reported to have developed herbicide resistance to nine herbicide modes of action in 20 countries and four different crops.

Controlling barnyard grass with herbicides is estimated to cost $400-$870 a hectare, eroding farm profit.

Seeking an alternative control method, Jhoana observed that some New South Wales Riverina ricegrowers who were using pasture legumes in rotation with drill sown rice were successfully managing their barnyard grass seedbank.

But there was limited literature on the inclusion of pasture legumes in the rotation to suppress weeds and the factors that contribute to the germination of barnyard grass.

Jhoana's research, funded by the AgriFutures Australia Rice Program and supported by Charles Sturt University, Rice Research Australia Pty Ltd (RRAPL) and the Ricegrowers Association of Australia (RGA), set out to demonstrate the effectiveness of this strategy, outline best practice and how suppression with pasture legumes could be integrated with other weed management tools.

Conducting her trials at the University farm, Jhoana found that including at least two rotations of pasture legume species with other weed management tools and strategies gradually depleted the barnyard grass seed bank.

Over time winter pasture legumes had the most significant positive effect against barnyard grass compared with other rotation species in rice-based systems, such as winter crops or fallow. "But for optimal results it [pasture legume rotations] must be combined with a no-till system," Jhoana said. "In no-till systems the barnyard grass seeds remain on top of the soil, and this enhances the decay of the barnyard grass seeds as well."

Seed bank depletion resulted from minimising grass seed set prior to sowing rice, reduced emergence due to sowing into mulch, and allelopathic suppression – the release of toxic chemicals. Allelopathic suppression reduced seed viability and inhibited growth.

"The best results can be achieved from using allelopathic pasture legume species or cultivars in combination with different weed management practices such as no-till, the stale seedbed technique, delayed sowing of rice and using sowing implements with minimal soil disturbance, such as discs," she added.

Jhoana concluded that tackling barnyard grass with a combination of techniques, tools and strategies is vital to controlling the ecotype found in the drill sown rice area of south-east Australia.

She also found that barnyard grass is sensitive to shading and that sowing a weed competitive rice cultivar with early vigour could hinder the early development of barnyard grass.

Moulamein, NSW rice grower Leigh Vial includes winter pasture legumes in his rice rotation for livestock feed. Learning that sowing rice into undisturbed pasture legume residue is beneficial for weed control has given him confidence to alter his herbicide treatments.

"For example, when we begin a herbicide regime for barnyard grass we use pre-emergent herbicides and then we may or may not have to follow with a post-emergent herbicide," he said. "This research gives us confidence that we don't have to do the post-emergent application. It gives us confidence and saves us quite a bit of money. Why tip chemical on if you don't have to?"

This research could also help boost the uptake of water saving practices such as drill sown rice and delayed permanent water, according to Leigh. "Another string to our bow with respect to controlling barnyard grass, it's further improving water productivity," he said. "Having an intact legume residue, you can get suppression of grass weeds for eight to 10 weeks at the start of the season, well that's going to be really helpful because that's when grass weeds can pull delayed permanent water and aerobic systems apart."

Water supply may be abundant this season, but Jhoana believes there will be further adoption of water efficient rice growing practices such as drill sown rice and delayed permanent water.

Given many ricegrowers already include pasture legumes in their rotation to profitably feed sheep, she said adopting this pasture legume suppression method would not necessarily be an expensive barnyard grass management strategy and it would add to their productivity and profitability. To learn more about Jhoana's research visit agrifutures.com.au/rice

Controlling barnyard grass with herbicides is estimated to cost $400-$870 a hectare, eroding farm profit.

NEW HORIZONS FOR ICONIC AUSTRALIAN SEED COMPANY

A new management structure, a new major shareholder and an injection of capital will push Valley Seeds to the forefront of seed research and development in Australia.

Approaching its 50th anniversary year, Valley Seeds is focused on developing innovative pasture varieties to meet the specific demands of Australian farmers and the variable climatic conditions they face every year.

AAG Investment Management (AAGIM) has recently facilitated a significant investment to introduce a new, major shareholder to Valley Seeds, bringing with it an injection of capital and an opportunity to advance the company's extensive research, development and emerging commercial capabilities. Valley Seeds remains 100% Australian-owned.

This new chapter in the company's history sees the introduction of a new management structure and leadership, an expanded distribution network, and a revitalisation of the Valley Seeds brand to meet the demands of today's farming environment. Valley Seeds Chief Executive Officer, Paul Twine, joined the company in 2021 and has played a critical role in the re-engineering of the business over the past 12 months.

"Our investment in plant breeding and our commitment to developing new and emerging varieties, a process that takes more than ten years for each new variety, will provide us with more opportunities to deliver tangible benefits to Australian growers and the agronomists that service them, well into the future," Mr Twine said.

"We introduced Amplify Phalaris last autumn with increased volumes available for this planting season. Later in 2022, we will introduce several new varieties that are proving to be high-performing ryegrasses, and other perennial grasses, with commercial-scale launches in autumn 2023.

I have been enthused by the response we have received from our retail partners, agronomists and farmers on the arrival of our new varieties as well as their endorsement of the new growth strategies we've put in place for Valley Seeds.

These strategies are all underpinned by a genuine commitment to helping our partners build their own businesses, while continually supplying high-performing products that have been bred in Australia to deliver higher productivity and profits to Australian farmers."

GET THE FACTS ON STUBBLE MANAGEMENT

Victorian grain growers are planning their paddock preparation options – in particular those with heavy stubble loads following on from large crops.

Agriculture Victoria Grains South West Manager Adam Buzza said there is now less burning, less soil cultivation and increased retention of crop stubble. This trend has been driven by the need to maximise water use and protect soils from erosion.

"Areas where stubble is burnt represent a minority of the total Victorian crop. Most farmers will only burn stubble when absolutely necessary, having considered all available options and the potential implications of burning.

"To help growers and the broader community understand the options farmers have for preparing paddocks for sowing, we have prepared a handy factsheet on stubble management.

"For the vast majority of Victoria's cropped paddocks, stubble is left in the paddock to protect soils from erosion and maximise the next crop's water use. Other benefits of retaining stubble includes better soil health, less fuel and labour costs and easier harvesting.

"Burning is often used as a last resort to manage heavy stubble loads to enable easier sowing and crop establishment and control weeds and pests."

The factsheet covers topics including:

- Alternatives to burning heavy stubble
- Disadvantages of burning
- Stubble retention trends in Victoria
- Benefits of retaining stubble
- Strategic removal of stubble
- Timing and temperature of burning
- Effects of burning on soil nutrients and soil carbon
- Protection of native vegetation.

Access the Managing Stubble factsheet at agriculture.vic.gov.au

If you would like to talk over your stubble management issues, contact your local agronomist or call 136 186 to be put in contact with an Agriculture Victoria officer.

Source: Agriculture Victoria

HANDS-ON EXPERIENCE FOR AGRICULTURE'S NEXT GENERATION

A new partnership between Nutrien Ag Solutions and the Longerenong College in Victoria will provide students a head-start in agriculture.

Nutrien Ag Solutions General Manager – Western Victoria, Rafe Bell, said the partnership with Longerenong College is focused on investing in the future of the Australian agriculture industry.

"As the agriculture industry continues to expand and diversify, there's never been a better time to consider a career in agriculture but ensuring those stepping in to this space have relevant industry training and experience is paramount to the industry's growth and success," said Mr Bell.

"This program will provide a key role in providing students a foot-in-the-door through practical training and meaningful industry connections. We want to provide students more opportunities to develop the skills they need for the jobs they want to pursue in agriculture."

"Students will be provided the opportunity to complete work experience with our business and gain valuable, hands-on experience through placements with our teams across Victoria and South Australia."

The three-year sponsorship agreement will also see Nutrien Ag Solutions provide the college with financial and product support specifically for the animal health and nutrition program.

"We will be providing a three-way automatic draft and scales, and fencing material – all relevant to their training," Mr Bell explained.

Longerenong College Head of Campus, Avril Hogan, said the data from the automatic scales will integrate into the Longerenong DATA Farm.

"The DATA Farm collects the production data of the Longerenong farm across machinery and over 500 sensors to train students on precision agriculture and using data to assist in making management decision," said Ms Hogan.

"This is a really important partnership with Nutrien Ag Solutions, and we are excited to give our students close exposure and connection to one of the country's largest employers in the ag sector."

Nutrien Ag Solutions staff and students from Longerenong College outside the Shearing Shed.

FARMERS URGED TO BE VIGILANT WITH WHEAT STRIPE RUST MANAGEMENT IN 2022

NSW Department of Primary Industries (DPI) cereal pathologist Steven Simpfendorfer has advised wheat farmers to consider their management plans now prior to entering a third cropping season likely to be conducive to stripe rust.

"Good cropping years are usually good rust years where regular rainfall improves yield potential but is also conducive to rust infection," Dr Simpfendorfer said.

"These fungal pathogens require live plant tissue, typically wheat and barley grass, to feed and survive between winter cropping seasons which is referred to as a 'green bridge'."

Dr Simpfendorfer said that this year's wet, mild summer has supported a widespread 'green bridge' across NSW, allowing a place for stripe rust to potentially thrive before this season's wheat crop is established.

"Farmers need to ensure they're on top of volunteer wheat growth in last year's paddocks as part of their overall weed control plan, which is often where the pathogen is surviving and building-up prior to sowing," he said.

"Within the cropping season, ideally, crops should be managed to avoid significant development of spores within canopies of susceptible wheat varieties so that fungicides are being used more in a preventative rather than curative approach to disease management."

Wheat stripe rust, caused by the fungus Puccinia striiformis f. sp. tritici, can result in up to 70 per cent yield losses in susceptible wheat varieties when not managed.

Spores from the fungus are spread over long distances by wind, but they can also be spread on clothing and vehicles that have moved through infected paddocks.

NSW DPI advises growers to be mindful of biosecurity protocols, come clean- go clean, to limit the spread of pests and diseases especially between regions and from overseas.

MEASURING REAL-TIME GRAIN QUALITY FOR BETTER DECISIONS

As the world's population keeps growing and climate challenges affect farming, the food industry is in dire need of smart solutions that make food production more efficient and reliable. Being able to track and monitor the quality of crops becomes a decisive factor in grain business as we approach modern highly data-driven agriculture.

GrainSense Oy delivers a ground-breaking innovation for grain quality analysis. Reliable data on protein and moisture of crops as well as green and broken kernels level allow farmers to make educated decisions regarding their harvests. The GrainSense Flow Analyzer has been developed specifically for environments where grains are flowing such as combine harvesters, silos, or dryers. Grain quality is measured constantly while on move and the collected data is sent to the GrainSense Cloud database for real-time analysis and monitoring.

The GrainSense Flow Analyzer is based on patented technology that is already successfully used in another GrainSense product; the hand-held analyzer launched in 2017. "There are already well over 1,500 GrainSense Analyzers in use in more than 40 countries," explains CEO Riku Niemelä from GrainSense, "Now we are bringing out an even more advanced solution to help make grain yields more predictable and harvests more profitable."

GrainSense customers are excited about the new product. "Grain quality level monitoring in real-time is something totally new for me," comments a farmer from Tyrnävä, Finland. While another farmer based in Muhos, Finland said: "Being able to check up on the drying process whenever and wherever is the key feature for us."

With a partner and distributor network spanning across Europe, Asia, North and Latin Americas as well as Australia, GrainSense is ready to serve a global audience in intelligent agriculture.

About GrainSense

GrainSense was established in 2014, as a spin-off of a research project at VTT, the Technical Research Centre of Finland. It became evident that the Near-Infrared Spectroscopy (NIR) technology could be used to answer a dire need to track grain quality efficiently and reliably. GrainSense helps grain growers, farmers, silo/dryer operators, traders, animal nutritionists and other food industry operators to ensure that every crop is fit for purpose and sold at the right price.

Learn more at: www.grainsense.com

‘CAN FABA BEAN CROPS OUT-COMPETE SOWTHISTLE?’

with Dr Michael Widderick, Department of Agriculture and Fisheries, Queensland

Faba bean crops have the potential to significantly curb common sowthistle, a problematic weed with widespread resistance to key herbicides, such as glyphosate and chlorsulfuron.

Dr Michael Widderick, principal research scientist (weeds) with the Department of Agriculture and Fisheries, Queensland, says faba bean is more competitive than other winter pulse crops, such as chickpea, and can play a useful role in reducing sowthistle seed bank replenishment.

“Trials conducted in 2019 at Narrabri, northern NSW and Hermitage, southern Queensland showed convincingly that the right faba bean variety grown at high density and on narrow row spacing can reduce sowthistle seed production by up to 48 per cent,” he says. “Narrow row spacing suppressed sowthistle biomass by as much as 68 per cent, resulting in a faba bean grain yield increase of up to 20 per cent.”

Common sowthistle is a challenging weed for many growers as its light, fluffy seed is easily spread, carrying any genes for herbicide resistance with it. Widely known as a weed that readily takes advantage of gaps in a crop, sowthistle struggles to thrive when faced with stiff crop competition. The seed does not persist for long on the soil surface, so any reduction in seed production will make a difference to future weed pressure.

“In broadleaf crops such as faba bean, there are few in-crop herbicide options, and it is not easy to collect and destroy sowthistle seed at harvest, so other tactics are needed to attack the weed seed bank,” says Michael. “Crop competition is a key component in the WeedSmart Big 6 integrated weed management program. Trials repeatedly show that increased crop competition can reduce weed seed production and increase grain yield, and faba bean is no exception.”

WHAT IS THE BEST ROW SPACING?

In brief: Narrowing faba bean planting to 25 cm row spacing reduced sowthistle seed production by 48 per cent at Narrabri and 17 per cent at Hermitage.

The details: At the Narrabri site, sowthistle seed production was reduced by 48 per cent when row spacing was 25 cm compared to 50 cm, averaged across the two plant densities and three cultivars. Faba bean grain yield (averaged across the three cultivars) was 13 per cent higher in plots sown at 25 cm row spacing compared to 50 cm spacing.

At the Hermitage site, narrowing the row spacing to 25 cm reduced sowthistle seed production by 17 per cent. Faba bean yield (averaged across the three cultivars) was 0.5 t/ha (20%) higher in plots sown at 25 cm row spacing compared to 50 cm spacing.

WHAT IS THE BEST PLANT DENSITY?

In brief: Higher plant density (30 plants/m2) reduced sowthistle seed production by 29 per cent (at Hermitage site only).

The details: At the Narrabri site, faba bean crop density did not affect sowthistle seed production or crop yield.

At the Hermitage site, increasing faba bean density from 20 to 30 plants/m2 caused a 29 per cent decrease in sowthistle seed production. Increased crop density reduced weed seed production in all cultivars. Faba bean yield (averaged across the three cultivars) was 11 per cent (0.2 t/ha) higher, where the crop density increased from 20 to 30 plants per m2.

WHAT IS THE MOST COMPETITIVE FABA BEAN CULTIVAR?

In brief: PBA Nasma (Narrabri) and PBA Nanu (Hermitage) were the most weed suppressive cultivars.

The details: Cultivar choice is the easiest and cheapest lever to pull to increase crop competitiveness; however, the effect is less reliable than other crop competition tactics and will depend upon the prevailing environment.

At Narrabri, PBA Nasma suppressed weed seed production by 38 per cent more than PBA Warda and PBA Marne. PBA Nasma yielded 9 per cent higher than PBA Marne and PBA Warda when grown in the presence of 10 sowthistle plants per m2.

At Hermitage, PBA Nanu was more weed suppressive than PBA Warda and PBA Nasma. At narrow row spacing and high crop density, PBA Nanu reduced sowthistle seed production by 45 per cent compared to low crop density configurations. This trend was also seen in PBA Nasma and PBA Warda. PBA Warda was poorly competitive on wide rows and low crop density, allowing an average 51 per cent higher sowthistle seed production than the other two varieties. At wide row spacing, increasing plant density in PBA Warda reduced sowthistle seed production by 44 per cent.

At Hermitage, all three faba bean cultivars (PBA Nasma, PBA Nanu and PBA Warda) grown on narrow row spacing yielded on average 23 per cent more grain at the high crop density than at the low-density configuration.

Dr Michael Widderick (right), principal research scientist (weeds) with the Department of Agriculture and Fisheries, Queensland, says faba bean is more competitive than other winter pulse crops, such as chickpea, and can play a useful role in reducing sowthistle seed bank replenishment.

AGVET CHEMICAL & TECHNOLOGY INNOVATION CENTRE WILL PAY DIVIDENDS FOR AUSTRALIA’S FARMING SECTOR AND THE NATION

CropLife Australia welcomes the announcement in May by Deputy Prime Minister Hon. Barnaby Joyce to establish an Agricultural and Veterinary (agvet) Chemical and Technology Innovation Centre of Excellence (CoE).

The CoE will be a regulatory science and research and coordination centre located at the University of New England (UNE). Through the establishment of a Chair of Regulatory Sciences and supporting secretariat, the CoE will bring farmers, scientists, regulators and industry together from across Australia and internationally.

The CoE will help to address the urgent need for high-level, dynamic public policy to ensure effective regulatory pathways that enable Australia’s farmers access to the latest and most modern agricultural chemistry innovations.

“Ensuring access to safe, effective and modern agvet chemicals and technologies is crucial to growing agriculture productivity, improving global competitiveness and delivering even better environmental outcomes for the nation’s farming sector and the Australian community. This is why appropriate public policy and regulatory processes must be informed and developed with the support of science-based, robust expertise,” said CropLife CEO, Matthew Cossey.

The commitment of $15 million in funding over five years by the Coalition delivers on previous commitments of the Federal Government to support the relocation of the APVMA to Armidale and build, utilise and grow the UNE’s capacity in this important public policy and regulatory field.

The CoE will be a whole-of-industry engagement network, working in partnership with researchers, regulators, farmers, industry, exporters and community. The approach will improve crop pest solutions and enable more rapid access to vital crop protection products for Australian farmers. It will also provide an ideal structure for attracting and securing project specific funding from the private sector both in Australia and internationally.

“The CoE is a great example of effective collaboration between industry, regulators and researchers who have worked together over several years to develop the initiative. The UNE has a long track record of managing public-private partnerships and delivering outcomes for farmers, and the APVMA is a world-leading internationally renowned regulatory agency. The CoE will support synergies between the APVMA and universities in regional Australia. The combined significant agricultural credentials of the organisations will further strengthen Australia’s capability as a global leader in agvet chemical regulatory science,” said Mr Cossey.

“The establishment of the CoE will deliver returns to our agricultural sector for decades to come and support Australia as a farming powerhouse. I encourage all political parties to support this initiative which will benefit Australian farmers, consumers and the environment over the coming decades.”

2022 AGRIFUTURES HORIZON SCHOLARSHIP WINNERS ANNOUNCED

20 scholars have been awarded the 2022 Horizon Scholarship, an initiative supported by seven Research and Development Corporations (RDC's), along with Cooperative Research Centre for Developing Northern Australia (CRCNA) and FMC Australasia to develop the next generation of rural leaders.

The Horizon Scholarship provides scholars with a $10,000 bursary over two years, thanks to ongoing support from industry sponsors. As part of the program, students also attend an annual four-day professional development workshop and complete two weeks of industry placement each year, all of which is covered by the support of their sponsor. The AgriFutures Horizon Scholarship program provides the next generation of leaders with opportunities to kickstart their leadership skills and expand their networks.

John Harvey, AgriFutures Australia Managing Director congratulates the 20 students from across Australia on their success and welcomes these future rural leaders to the AgriFutures Horizon Scholarship program.

"Congratulations to our 2022 AgriFutures Horizon Scholarship recipients, whose exceptional passion, ambition, and commitment to agriculture has distinguished them from a talented pool of over 100 applicants. We are so appreciative to our industry sponsors for their investment in supporting the next generation of rural leaders," said Mr Harvey.

Students are carefully paired with industry sponsors that align with their career aspirations and industry experience. Support from sponsors is key to the program's success and assists students to network with industry leaders and learn new skills relevant to a career in their chosen field.

2022 sponsors include Grains Research & Development Corporation (GRDC), Cooperative Research Centre for Developing Northern Australia (CRCNA), Australian Eggs, Australian Wool Innovation (AWI), Dairy Australia, Meat & Livestock Australia (MLA), Hort Innovation, Cotton Research and Development Corporation (CRDC), FMC Australasia and the AgriFutures Emerging Industries, Honeybee and Pollination, and Agrifood Innovation Programs.

Mr Harvey thanks the Horizon sponsors and acknowledges their significant contribution to the program, particularly in offering student's valuable exposure to the agricultural sector.

"The AgriFutures Horizon Scholarship Program would not be possible without our sponsors. The diversity of industry sponsors reflects the desire across the board to focus on our future leaders who will build prosperous and sustainable rural industries of the future.

"I encourage scholars to make the most of the fantastic opportunities their industry sponsors provide. They will be able to collaborate across rural industries and participate in valuable work placements and attend workshops that will open doors to a successful career in their chosen field," said Mr Harvey.

All students involved with the AgriFutures Horizon Scholarship program will attend a four-day workshop in July focused on leadership and personal development. The workshop will feature special guest speakers, industry experts and also provide the opportunity to network, meet sponsors and discuss innovations and challenges in the agricultural sector.

Name	University	Sponsor
Amy Ferguson	The University of Melbourne	Cooperative Research Centre for Developing Northern Australia (CRCNA)
Amy Clementson	University of New England	Hort Innovation
Ayla Christophers	The University of Adelaide	Cotton Research and Development Corporation (CRDC)
Charlotte Nugent	Charles Sturt University	Meat & Livestock Australia (MLA)
Darcy MacCartie	The University of Adelaide	AgriFutures Honeybee and Pollination Program
Emily Chambers	The University of Adelaide	Grains Research and Development Corporation (GRDC)
Hugo Quinn	Curtin University	Grains Research and Development Corporation (GRDC)
Jenna Wright	The University of Sydney	Grains Research and Development Corporation (GRDC)
Jessica Curran	James Cook University	Australian Wool Innovation (AWI)
Lachlan Bryant	The University of QLD	Grains Research and Development Corporation (GRDC)
Laura Carniel	The University of QLD	FMC Australasia
Luke Austin	Southern Cross University	Cooperative Research Centre for Developing Northern Australia (CRCNA)
Macey Holland	The University of Melbourne	FMC Australasia
Marieke Hoellscher	Charles Sturt University	AgriFutures Emerging Industries Program
Mitchell Salan	Charles Sturt University	Dairy Australia
Ophelia Neumann	The University of Adelaide	Dairy Australia
Samuel Stone	James Cook University	Dairy Australia
Sarah Hamblin	The University of QLD	Meat & Livestock Australia (MLA)
Thomas McPherson	The University of Sydney	AgriFutures Agrifood Innovation Program
Tirza Winarta	The University of Sydney	Australian Eggs

GRAINCORP, CSIRO AND v2FOOD PARTNER ON $4.4MILLION PLANT-BASED PROTEIN RESEARCH

A new research collaboration between CSIRO, GrainCorp and v2food will build Australian manufacturing expertise for producing higher value plant protein ingredients.

GrainCorp has partnered with Australia's national science agency CSIRO and leading plant-based food producer v2food on a $4.4million research project in the fast-growing plant-based protein market.

The partnership will work towards building Australian processing and manufacturing expertise to reduce reliance on imported ingredients and to add more value to grains and oilseeds so they can be used in new products. Australia is the world's second largest exporter of canola seed, with GrainCorp keen to build domestic manufacturing and supply chains for plant-based protein ingredients as a major exporter.

GrainCorp received the funding from the Australian Government's Cooperative Research Centres Projects (CRC-P) Program, to separate and manufacture proteins from canola, soy and fava beans and chickpeas at commercial volumes.

GrainCorp Managing Director and CEO Robert Spurway said the partners will identify infrastructure needs for commercialisation and put Australian grains and oilseeds growers at the forefront of the world's plant protein market.

"Global consumer trends are driving demand for plant protein and it represents an attractive opportunity for Australian agriculture," he said.

"We are well placed to participate in the plant protein boom and we are confident the sector can comfortably co-exist, and indeed flourish, alongside our essential animal protein industry.

"Our partnership aims to create a commercial plant protein supply chain that benefits Aussie growers and food and aquafeed manufacturers, as well as consumers.

"We'll be able to access new export markets and meet growing domestic demand while creating jobs and informing future research and development into high-quality plant varieties."

A key focus of the collaboration will be adding value to existing plant protein capabilities at GrainCorp's oilseed processing site in Numurkah, Victoria.

CSIRO will bring its expertise in science, food technology, agronomy and genetics to the collaboration. Professor Michelle Colgrave who specialises in proteins research, and leads the CSIRO Future Protein Mission, said the collective research power of the three organisations will push faster outcomes for Australia.

"We grow many plant crops in Australia but typically export these as commodities. If we can add value through product development, research and processing, we can export them at a higher price," Prof Colgrave said.

"The project will be a game changer for Australian food manufacturers, including small-to-medium enterprises that can leverage our research to deliver new products for consumers."

Australia boasts significant natural resources, a strong farming sector and world-class research and development capabilities through CSIRO and industry groups.

v2food CEO Nick Hazell said the research supported a thriving Australian agricultural and value-added manufacturing sector.

"It is important for the sector to operate at scale, and with end-to-end domestic capability, which will create resilience and boost global competitiveness," he said.

"We are assessing options across the plant protein spectrum, including in soy protein, to potentially replace imported soy protein concentrate with locally produced production and processing."

The research project is expected to culminate in 2023 following a staged approach to process development, pilot scale protein fractionation, sensory evaluation and product application.

EXCITING START FOR NEW AGRONOMIST

Amy Canty's excitement is palpable. As a newly graduated agronomist, Amy has found herself at the start of a career in an industry that is growing every day.

"Every morning there is something new to learn or somewhere new to go," says Amy, a graduate agronomist based in Cowra, who has just started her first specialist role with the country's largest Australian-owned agribusiness, Elders.

She will be putting down her roots in the central west region for the next six months at least, as she begins to build her experience alongside seasoned growers and specialists who are watching the next generation with just as much anticipation.

Early morning starts don't seem to bother Amy as she spends most days accompanying fellow 'agros' in the field, applying her education (with a healthy dose of enthusiasm) to solving complex problems for growers in her region.

The beauty of the country she visits each week is not lost on this new face. "It's just stunning, to think that this is my office and I get to work here," she says. "Being able to combine technical skills with the outdoor environment, is never boring. I find myself looking forward to work every day."

Amy's interest in the world of farming, started to form into a career when she was enrolled at Charles Sturt University, Wagga Wagga. The comprehensive degree provided a taste of many industries and career paths, so it was in her third year that Amy decided to specialise in agronomy.

"The scientific side to the course was really interesting and being able to work with farmers to find solutions to real-life problems just seemed like the best option for me."

Run by the Thomas Elder Institute, the Elders Graduate Agronomy Program receives applications from some of the brightest up-and-coming agronomists across Australia. Amy recalls putting her name in the ring beside many other hopefuls.

"Elders came with a good reputation and I knew I wanted to see as many different farming types as I could to really build up my experience,' she explains. "When the application was accepted, I was so excited to start – and then meeting the team here in Cowra, I know I've made the right decision."

Hitting the ground running, Amy began the role "as early as I could" starting her placement in mid-January, based in the Elders Cowra branch. Since then, she says the support from her team and local growers alike has been vital to her confidence to keep growing as a professional.

"To be able to feel like you can ask any question, no matter how simple or broad, and know that everyone is there to support you learning – it's really special to find as a graduate," she says.

"I've been able to join senior agronomists and their clients for discussions about annual cropping programs, while at the same time I'm here in the local branch for stock-take day, meeting new people and understanding the products farmers are using. It really gives you that well-rounded understanding of how each part of the industry works together."

Looking ahead Amy says that while it may be "nice to specialise even further one day," she says she is just as content enjoying a role that is as challenging as it is rewarding.

"Farming practices will always be changing. With research and innovation comes change, and that's exciting to me. As a young person entering the industry, I can see so much more room for growth, but at the same time I love the traditional parts that will always be there. This is the career path for me, and I can't wait to see where it takes me."

You can learn more about he Elders Graduate Agronomy Program here www.thomaselderinstitute.com.au
Source: Elders Rural

"The Elders Graduate Agronomy Program is the perfect platform for budding agronomists to identify their area of expertise and take the first steps to establishing a long and prosperous career in the industry."

DR MICHAEL WILKES - HEAD OF THOMAS ELDER INSTITUTE

FARMERS NEEDED FOR NEW HORTICULTURE BUSINESS STUDY

A new farm monitor program will provide horticulture producers with critical business insights to help them understand their profitability, improve recovery and drive future growth.

Agriculture Victoria's Horticulture Farm Monitor Pilot is collecting valuable information from farm businesses across a range of crops including apple and pears, cherries, strawberries and summer fruit.

Victorian Strawberry Growers Association Chairperson and AusBerry CEO Miffy Gilbert said it's an extremely valuable tool for growers and is encouraging more growers to be involved.

"The strawberry industry was really keen to participate in the Horticulture Farm Monitor Pilot," Ms Gilbert said. "We are full of anecdotal evidence on our industry and our businesses, but we don't have the data to back up our claims.

"When the pandemic hit and we were asked how many workers we needed as an industry, we didn't really know. We had anecdotal evidence, but nothing based on defendable facts."

Several farm businesses are already involved in the data collection phase of the pilot program, and Ms Gilbert is calling for more farmers to be involved.

"This program will provide us with clarity around our industry and the true cost of production," she said.

"It will help individual business set their base costs and base sale prices, understand where they can make savings and where they are competitive compared to the industry average. It will even be useful when individuals are applying for banks loans."

Ms Gilbert said some individual industry groups had collected data in the past, but this industry-wide program would provide deeper insights into business profitability, while protecting the farmers who provide their business data.

"It's all beautifully done with total anonymity," Ms Gilbert said. "All the data is de-identified so no one knows where it's from, but they do know it is accurate, representative data of their industry and their production type.

Agriculture Victoria's Sze Flett said industry groups have renewed their call for real data to help them navigate recent challenges.

The pilot is similar to Agriculture Victoria's long-running and highly successful Farm Monitor programs in dairy, beef and sheep industries.

"Collecting data on horticulture businesses has always been a challenge due to the complex and fragmented nature of the sector, with so many different industry types with varying capacity to collect data," Dr Flett said.

"But we know this is the best way to provide businesses with a clear, accurate picture of the state of their industry."

Farmers who would like to be involved in the program can contact Horticulture Farm Monitor Pilot program manager Andy Clark on 0436 804 656, or email seasonalworkforce@agriculture.vic.gov.au

N-GAUGE NUTRIENT MANAGER APP

Nitrogen fertilizer costs are going through the roof. Farmers need to ensure that every kilogram of Nitrogen applied across their farm produces the highest Yield and optimum Protein possible. The CropScan 3300H On Combine Grain Analyser and N-GAUGE Nutrient Manager App provide a simple yet effective solution for Variable Rate Fertilization that ensures a positive Yield and Protein response to targeted application of Nitrogen fertilizer.

The CropScan 3300H On Combine Grain Analyser collects a unique set of data layers including Protein, Oil, Moisture, Starch, Yield, Elevation and GPS off the combine. These data layers are sent to the CropScanAg Cloud Server where farm field maps are generated automatically.

The N-GAUGE Nutrient Manager App delivers a complete suite of field and analytical maps to the farmer, their agronomist and other authorised partners, directly to their smart devices. The field and analytical maps include;

- Protein, Moisture, Oil, Starch
- Yield
- Protein/Yield Correlation Quadrants
- Nitrogen, Sulphur, Potassium and Phosphorus Removal

The Protein/Yield Correlation Quadrant maps are a great tool upon which to generate VRF Nitrogen applications. Proteins contain approximately 17% of Nitrogen by weight. As such measuring Protein is a direct measurement of Nitrogen. By combining the Yield and Protein data off the combine, then four performance zones can be identified,

- High Yield/High Protein
- Low Yield/Low Protein
- Low Yield/High Protein
- High Yield/Low Protein

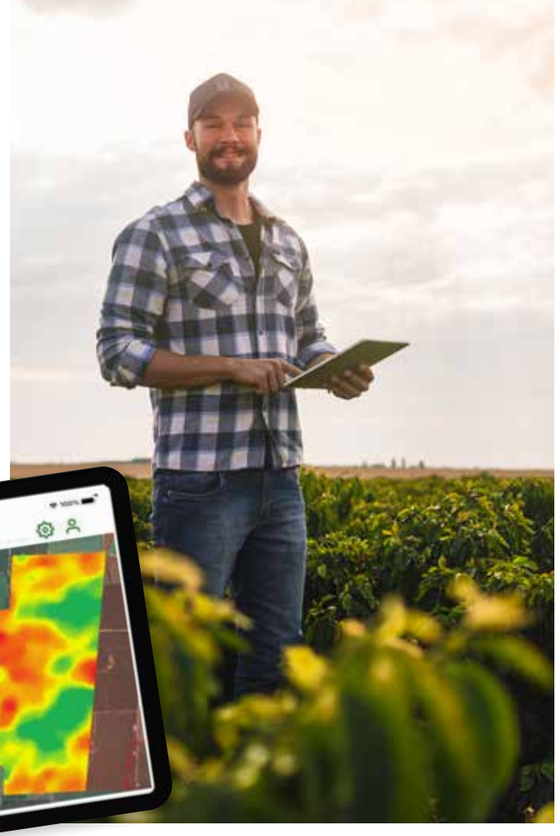
Since Protein levels below 11.5% in wheat and barley indicate that Nitrogen was the limiting factor in achieving the optimum Yield, then by applying more Nitrogen fertilizer into the low Protein zones in next year's crop will ensure an increase in Yield and Protein.

A unique feature of the N-GAUGE Nutrient Manager App is that the prescription applications are aligned to the AB lines across the field.

The prescription maps are grid lined with the recommended rate of fertilizer shown in each grid location. By selecting the grid location, the farmer and their agronomist can increase or decrease the rate as they see fit.

Farmers can then generate Variable Rate Fertilization Prescription maps for their fields and edit them on their smart devices. Once the prescriptions maps are complete, they can be exported to the CASE IH AFS, New Holland PLM or John Deere Operations Centre platforms. The last step is to download them to the spreader, sprayer or seeder.

For more information on the N-GAUGE Nutrient Manager and Grain Logistics Apps, visit the web site: www.cropscanag.com



AUSTRALIANS BUY MORE DAIRY AND MEAT SUBSTITUTES

The amount of dairy and meat substitutes purchased from Australian supermarkets and other food retailers jumped another 14 per cent in 2020-21, following a 14 per cent increase between 2018-19 and 2019-20, according to data released today by the Australian Bureau of Statistics (ABS).

ABS health statistics spokesperson, Paul Atyeo, said "The per person apparent consumption of dairy and meat substitutes was 20 grams per day in 2020-21, up a total of 29 per cent from 15 grams per day in 2018-19.

"About 17 grams of apparent consumption per person per day came from dairy milk substitutes like soy milk or almond milk. This is equivalent to about half a metric cup per week. Consumption of dairy milk substitutes rose 4 grams per day between 2018-19 and 2020-21 mirroring a 4 grams per day fall in dairy milk over the same two year period." Mr Atyeo said.

"Almond milk had a particularly rapid increase in apparent consumption, up 31 per cent in the last two years. Soy milk increased by 16 per cent over the same period."

Of other product categories which had increases, the most significant was non-alcoholic beverages which rose 7 per cent between 2018-19 and 2020-21.

The increase was driven by diet soft drinks (up 21 per cent) and packaged water (up 8 per cent per person). In contrast, sugar sweetened soft drinks have remained relatively flat, although they still make up most (61%) of the soft drink volume.

More information can be found in Apparent Consumption of Selected Foodstuffs, Australia, 2020-21 available for free download from the ABS website, www.abs.gov.au.

Source: Australian Bureau of Statistics

FINDING THE COMPETITIVE EDGE FOR AUSTRALIA'S FUTURE AG EXPORTS

Australia will need to find new ways to gain a competitive advantage with its agricultural exports as more countries enter free trade agreements.

ABARES Executive Director Dr Jared Greenville said the latest ABARES Insights report, Analysis of Australia's future agricultural trade advantage, provides a reminder that we need to think about all avenues to improve our trade advantages.

"Australia now has 16 free-trade agreements which enable access to markets around the world, bringing huge benefits to Australian agriculture," Dr Greenville said.

"However, over the last decade, international competitors have started to catch up with their free trade agreements. For an industry as reliant on exports as ours, it's a reminder that we can't take our advantages for granted.

"Our beef exports to Japan no longer have a tariff advantage over Canada and the US, and in Vietnam, our tariff advantage in wheat over Canada and the EU is set to disappear.

"Once tariffs hit zero, we need to look at new ways to enhance our access to international markets.

"New or improved biosecurity market access will help, as it will reduce the cost of compliance. So will reductions in unjustified non-tariff measures and a reduction in compliance costs for justified non-tariff measures.

"There are things to be done at home, related to advancing domestic productivity, adapting to a changing climate, and putting in place systems to demonstrate the sustainability credentials of export goods.

"Internationally, Australia and our partners are working towards enhancing the global rules-based trading system and improving global outcomes through lower agricultural subsidies and reductions in non-tariff barriers.

"We just need to make sure we don't get complacent. We sell a good product, but there is plenty of competition out there and we need to work hard to stay ahead of the game."

The Insights report, Analysis of Australia's future agricultural trade advantage, can be read on the ABARES website.

Source: ABARES

NEW STATS POINT TO SAFER FARMS

New agricultural health and safety stats for 2021 have revealed a reduction in on-farm deaths for the second year running. New data shows on-farm deaths have decreased from 58 in 2020 to 46 in 2021, with tractors the leading cause of harm.

While this is welcome news, collectively we are working towards zero deaths. Producers, industry, research agencies, technology developers, governments and machinery suppliers are to be applauded for their significant efforts in ensuring a safer on-farm work environment.

The 2021 data from AgHealth Australia's National Farm Injury Coronial Database, is the leading measure tracking death and injury on-farm. The statistics serve as an important mechanism for industry to highlight areas where we are making a positive impact, as well as those areas we need to concentrate effort to reach the zero-death target.

Tractors are now the leading cause of death in 2021, eclipsing quad bikes and side-by-side vehicles. Quad bike deaths have decreased between 2020 and 2021 (from 14 to 9 incidents), however the number of incidents involving tractors and side-by-sides have remained alarmingly stable.

AgriFutures Australia Managing Director, John Harvey, said that while it is reassuring to see a decrease in death and injury on farm, we mustn't become complacent.

"There has been a significant amount of work that has gone into increasing safety on farm, from technology solutions to the ACCC Quad Bike Safety Standard, introduced in October 2020. These are all positive steps in ensuring the safety of the rural sector, but there is always more work to be done.

"We are certainly going in the right direction, but we can't lose sight of the bigger picture. From 2001, a staggering 1,632 people have lost their lives on farm due to non-intentional injuries," said Mr Harvey.

The Rural Research and Development Corporations (RDCs), which fund research through the Rural Safety and Health Alliance (RSHA), are continuing to review the data and find ways to improve safety across our agricultural, fisheries and forestry industries.

RSHA Chair, Professor Lyn Fragar AO said the figures are a stark reminder that on-farm safety continues to be one of the biggest challenges for the agricultural sector but noted there are everyday practices we can implement to make our industry safer.

"Ensuring the safety features of tractors, quad bikes and side-by-sides are actually used, could significantly reduce the number of injuries from these machines. If a seatbelt is present use it (tractors/side-by-sides), fit an operator protection device (quad bike), always wear a helmet (quad bike/ side-by-side) and never let children ride or be carried as passengers on quad bikes. It's simple practices that help protect people and children living and working on-farm," said Professor Fragar.

Fast facts:

- Research has shown a year-on-year decrease in quad bike deaths from 14 to 9
- 60% of all reported injuries were via quads, tractors or horses, with 53% of injuries occurring in Queensland
- 60-74 year olds were the most prevalent age group of fatality (12).

Learn more about the Rural Safety and Health Alliance via: www.rsha.com.au

The RSHA is jointly supported by AgriFutures Australia, Australian Eggs, Australian Pork Limited, Australian Wool Innovation, Cotton Research and Development Corporation, Dairy Australia, Fisheries Research and Development Corporate, Grains Research and Development Corporation and Meat & Livestock Australia.

NEW IMPORT CONDITIONS TO PROTECT AGAINST KHAPRA BEETLE

New import conditions will help protect Australia against khapra beetle, a highly invasive pest that poses a major threat to Australia's grains industry.

Head of the Biosecurity & Compliance Group within the department and Chair of the National Biosecurity Committee, Deputy Secretary Mr Andrew Tongue PSM, said an outbreak of khapra could cost Australia $15.5 billion over 20 years.

"Khapra beetle is not present in Australia, but we have recently seen an increase in khapra beetle interceptions as a hitchhiker pest in sea containers," Mr Tongue said.

"Some of these detections have been in consignments that khapra beetle previously had no association with, and from countries not known to have khapra beetle.

"We are implementing urgent actions to reduce the risk of khapra beetle entering Australia.

"Khapra beetle destroys grain quality making it unfit for human or animal consumption. It also poses a human health risk when stored products become contaminated with khapra beetle.

"The urgent actions are being implemented in phases and are resulting in changes in requirements for imported plant products and sea containers. Phases 1-3 introduced requirements for high-risk plant products and phase 6 introduced requirements for sea containers.

"The next two phases start on 28 April 2022 and will introduce new requirements for other-risk plant products, and seeds for sowing, respectively.

"These plant products and seeds must now be inspected offshore by a government official of the exporting country and be certified (with a phytosanitary certificate) as being free from any species of Trogoderma (dead, alive or exuviae).

"These changes impact commercial importers but will also impact the general public. If you are bringing nuts or seeds into Australia via the mail or as an international traveller, you will need a plant health (phytosanitary) certificate."

Find out more at www.awe.gov.au/khapra-urgent-actions

SOURCE: Department of Agriculture, Water and the Environment

Larvae and beetle of Khapra beetle (Trogoderma granarium) on rice grains.

FAST FACTS:

Other-risk plant products include seeds, nuts, green coffee beans, dried vegetables, dried fruit, herbs and spices.

Products imported via international mail that fail to meet the requirements will be immediately destroyed.

Products imported via pathways other than international mail that fail to meet the requirements may be exported or destroyed on arrival in Australia. Additionally, the container the products were shipped in may also be exported.

Khapra beetle is highly invasive and feeds on stored products, causing significant loss and posing human health risks due to contamination. It is increasingly found hitchhiking in containers and packaging.

PULSE GUIDE HELPS YOU PLAN AHEAD

Pulse growers will be better equipped to plan for the upcoming sowing season thanks to the release of Agriculture Victoria's 2022 Pulse Disease Guide.

The annual guide, produced with support from the Grains Research and Development Corporation, (GRDC) details how resistant or susceptible new and commonly grown lentil, beans, vetch, chickpea, field pea and lupin varieties are to a range of crop diseases.

Agriculture Victoria Senior Research Scientist Dr Joshua Fanning said the guide includes disease ratings and advice on how to reduce the risk from diseases.

"When making plans for this season, checking the latest pulse disease ratings is a crucial step for pulse growers, especially as ratings can change from year to year.

He said the diseases from last season can increase the risk of disease during 2022. Diseases of significance last season included Botrytis grey mould in lentils and vetch, chocolate spot in beans and Ascochyta blight in chickpeas and vetch.

"Most disease outbreaks last season were related to susceptible varieties, demonstrating the benefit in avoiding such varieties," Dr Fanning said. "Other strategies include not planting pulse crops into or adjacent to paddocks where there was disease in 2021 and implementing a fungicide management plan."

Dr Fanning recommends a proactive disease management strategy to reduce the risk of pulse diseases and subsequent yield losses.

The new disease ratings provided in the pulse disease guide are based on an understanding of the diseases present in Victoria and on data collected from plant pathologists working across Australia with support from the GRDC.

View the 2022 Pulse Disease Guide at https://agriculture.vic.gov.au/biosecurity/plant-diseases/grain-pulses-and-cereal-diseases/pulse-disease-guide

SOURCE: Agriculture Victoria

NEW APVMA BOARD HAS IMPORTANT JOB TO DO

The first priority for the Board announced for the Australian Pesticides and Veterinary Medicines Authority (APVMA) today will be to outline how it will ensure the protection of the independence and scientific integrity of the regulator and how it will justify its own costs to the nation's farming sector.

Chief Executive Officer of CropLife Australia, the national peak industry organisation for the plant science sector, Mr. Matthew Cossey today acknowledged the announcement, "A Board for the APVMA was not at the top of industry's list when it came to improvements and efficiencies for this regulator. Now that it's been appointed it's firmly on the Government, the Department and the Board itself to prove its value. Not in the least because industry and the farming sector will be picking up the tab for the Board after its first two years of operation.

"The APVMA is world-recognised for its scientific credentials in its work as an expert independent regulator. It is critical that the Board establishes a culture and doctrine that protects the integrity of the APVMA's independent and evidence-based decision-making processes. It is also incumbent on the Board to deliver a step-change in efficiency of the regulator if it is to justify its own existence.

"I congratulate the Chair, Dr Carrie Hillyard AM, and other board members on their appointment. CropLife anticipates a constructive relationship with the new Board with a view to ensuring efficiencies are delivered. Further efficiencies are essential so that Australia's farmers have timely access to crucial crop protection products and that significant improvements achieved over the last couple of years are built upon.

"However, the lack of consultation, engagement or visibility of the selection of the Board by the Department highlights its operations are far from best-practice in these matters.

"We call on both sides of politics to commit to fully funding the ongoing operations of the APVMA Board otherwise it will be the only governance Board of a federal regulator that does not receive any government funding. That is not fair to the ag industry, especially considering this regulator is only focused on work crucial for Australian agriculture.

Mr. Cossey concluded, "CropLife and our members will continue to work constructively with the regulator, Department and Federal Government on implementing targeted reforms to see further, genuine efficiency improvements and remove unnecessary regulatory burden. This is important so the APVMA can further improve efficiency to exceed the minimum statutory requirements that they recently finally returned to."

GATEWAY DELIVERS AUSTRALIA'S AGRIFOOD INNOVATION TO THE WORLD

When the AgriFutures growAG. program and platform (growag.com) were launched by the Minister for Agriculture and Northern Australia, the Hon. David Littleproud MP in April 2021, the goal for the first of its kind innovation gateway was to connect users from around the globe to Australia's agrifood innovation.

Delivering on what it was set out to do, the bespoke website showcases Australian agrifood innovation research projects, organisations, and research, investment and commercialisation opportunities online in one, easy to use location. Supported by a unique concierge system to enhance connections and drive relationships and partnerships.

growAG. has been embraced by the local and global agrifood communities with more than 39,000 users from across 167 countries visiting growag.com since its launch.

growAG. is a joint initiative by the 15 Research and Development Corporations (RDCs) and the Australian Department of Agriculture, Water and the Environment (DAWE).

Minister for Agriculture and Northern Australia David Littleproud said growag.com was developed as a shared vision to showcase Australia's leading agricultural research, unique technologies, and commercialisation opportunities to drive investment, collaboration, and partnerships in a transparent manner.

"This is an online window to showcase Aussie agricultural innovation and the results are showing for themselves how many countries across the world are interested," Minister Littleproud said.

"It also provides information to farmers the latest research being developed by the rural Research and Development Corporations including building a database for pollination dependency data, assessing a potential new source of resistance in tall wheat grass for Fusarium crown rot and regional specific GHG emissions mitigation practices in the red meat industry."

Since launching in April 2021, there has been more than 2,500 research projects and 100 commercial opportunities listed on growAG., and over 442 connections made. One in three visits to the platform have been international, from countries including the United States, New Zealand, India, the United Kingdom, China, Singapore, Germany, Canada, and Ireland, while the balance has been from local users. The transparency, accessibility and connections afforded by the platform are translating to meaningful discussions and partnerships.

AgriFutures Australia, Managing Director, Mr John Harvey, said the reach that growAG. has achieved over the past 11 months is reflective of its capacity to bring together world-leading thinking, investment, and collaboration to drive innovation and prosperity across Australia's primary industries. The sole purpose of the growAG. program is to help drive global collaboration and link researchers, investors, and commercial partners to our innovation.

"Australian farmers and value chain stakeholders help to fund some of the most innovative agricultural research in the world and we should be very proud of our position as a global leader," Mr Harvey said.

"However, for this work to translate to real and tangible gains in efficiency, sustainability and profitability, capital and investment is required to commercialise the enormous amount of activity being undertaken across the agriculture, fisheries, and forestry sectors.

"Over the course of the past year, growAG. has laid its foundation as a global marketplace for agrifood innovation having attracted researchers, entrepreneurs, startups, scaleups, SMEs, corporates, investors, incubators and accelerators, industry bodies, agronomists, and farmers from 167 countries. We have also seen users grow month-on-month.

"This is a resource that does not exist anywhere else in the world, and we are looking forward to continuing to see the information being shared and the connections being made leading to on-the-ground benefits for Australian farmers and agrifood businesses."

If you have a research project, commercialisation opportunity or an organisation you would like listed on growag.com, please visit growag.com/submit. Explore, find and connect with relevant research projects and innovation opportunities from across Australia's agrifood innovation system at growag.com.

AI-POWERED APP HELPS KEEP AUSTRALIA FREE FROM STINK BUGS

Australia's national science agency, CSIRO, is using Artificial Intelligence (AI) to develop an app that will help keep brown marmorated stink bugs out of Australia, an invasive species with the potential to wipe out more than 300 different species of plants if it made it past quarantine.

The app, being developed for the Department of Agriculture, Water and the Environment (DAWE), is based on a prototype co-funded by Microsoft to identify seeds of noxious weedy daisies, using AI to identify stink bug species based on thousands of specimens held in CSIRO's National Research Collections Australia.

DAWE is now trialling the app in its quarantine stations.

CSIRO Chief Executive Dr Larry Marshall said collaborative partnerships were a powerful way to turn new technologies into real solutions to the nation's greatest challenges, like protecting our native flora.

"Australia's growing AI capability can be among the best in the world, but it doesn't mean anything until we translate it into solutions that make life better for everyone, like ensuring our increasingly interconnected world doesn't jeopardize our biosecurity," Dr Marshall said.

"This app will help our biosecurity officers tell invasive species apart from our own native species, a uniquely Australian solution to a unique Australian challenge."

CSIRO taxonomist Dr Alexander Schmidt-Lebuhn said the app demonstrated the practical applications of having a rich insect database.

"We're taking detailed digital images of the stink bugs in our insect collection, including using a 3D imaging system to take photographs from many angles," Dr Schmidt-Lebuhn said.

"Using a smartphone camera to zoom in or out and look at the bug from different angles, the AI model in the app identifies the species and shows how likely it is to be correct.

"The app also has species profiles with example images and species information. Users can record a photo of the bug, its identification and the geographic coordinates and local time to help build out the database and inform biosecurity responses."

Microsoft Australia National Technology Officer, Lee Hickin, said: "Since establishing our partnership with CSIRO in June 2020 our focus has been on supporting CSIRO in their scientific and research work. By leveraging Microsoft AI tools and Image classification technology, CSIRO has been able to rapidly build the stink bug detection models needed to help confidently identify the brown marmorated stink bug. All whilst developing new skills in automated machine learning and cloud automation tools."

While Australia has around 600 named native stink bug species, as well as several thousand more undescribed species, the brown marmorated stink bug is native to China and has spread to many countries around the world, where it is a threat to crops such as apples, stone fruits, hazelnuts and grains.

It breeds in large groups in well-lit areas, such as car plants, then pregnant females hibernate in dark places, such as cars awaiting export. This can cause infestations in new countries where they lack specialised natural enemies to keep their populations in check.

The research team behind the app hopes to expand the work in two different directions.

"We want to add AI models for more types of biosecurity threats, beyond stink bugs, and we also hope to involve the public in biosecurity work so that people can identify and report pests and weeds," Dr Schmidt-Lebuhn said.

CSIRO are using a 3D imaging system to take images of stink bugs from many angles to train the AI inside our app. This requires several hundred images per species.

HORTICULTURE FOCUS AT WEEDSMART WEEK

The horticulture-focused event within the 2022 WeedSmart Week program at Mildura will include visits to two horticultural operations, with presentations on spray technology, fleabane biocontrol options and alternatives to glyphosate.

Weed control can become contentious in regions like the Victorian Mallee where sensitive horticultural crops neighbour broadacre grain production farms.

Herbicide spray drift can cause significant damage to sensitive crops, as can the evolution and spread of herbicide resistance in weed populations.

As part of the WeedSmart Week event in Mildura this year, organisers have included a standalone event on Thursday, 1 September to provide industry cross-over information on weed control in and around sensitive areas.

The horticulture-focused event will include visits to two orchards, with presentations on spray technology, fleabane biocontrol options and alternatives to glyphosate. The day will include a networking lunch, with presentations and discussion.

WeedSmart's program leader, Jessica Strauss said that adopting an area-wide approach to weed management will benefit all industries and land managers.

"We know that stacking both herbicide and non-herbicide weed control tools into a long-term strategy is the best way to reduce weed seed set and minimise the risk of herbicide resistance," said Ms Strauss. "In diverse landscapes it is also necessary to factor in tactics that minimise the spread of problematic weeds. The strategies used in one industry can have a powerful effect on another industry within the region, either positive or negative."

"To promote cross-industry discussion and information exchange we are inviting both horticultural and broadacre grain producers to register for the full three day program that includes an information forum, machinery expo and field trips to farms in the region to hear first-hand about the diverse tactics being employed to keep downward pressure on weeds in the Victorian Mallee.'

Low weed seed banks underpin all profitable farming enterprises. Keeping weed numbers low and quickly regaining control of blow-outs is the sole purpose of the WeedSmart program. The horticultural-focus event within the 2022 WeedSmart Week program is a standalone price of $60 (early bird), including lunch. The full 3-day fully catered event runs from 30 August to 1 September. Registrations are open on the WeedSmart website.

GROWER CONCERNS TRIGGER RESEARCH INTO BLUEGREEN APHID RESISTANCE TO INSECTICIDES

Source: Agrifutures Australia

In response to growing concerns, AgriFutures Australia (AgriFutures), together with industry body, Lucerne Australia, has invested in preliminary research to investigate potential evolutionary resistance of bluegreen aphid populations to commonly used insecticides.

Bluegreen aphids (Acyrthosiphon kondoi) are a major pest of lucerne and other legume crops. These tiny pests feed directly on the foliage, damaging the plant and spreading harmful viruses through infected crops. Currently, lucerne seed growers have access to a limited range of insecticides to control bluegreen aphid populations. During the past two years, several growers and agronomists in New South Wales and South Australia have reported that currently registered insecticide sprays are no longer effectively controlling bluegreen aphid populations.

Dr Evatt Chirgwin, Cesar Australia is leading the AgriFutures supported project on Understanding bluegreen aphid resistance in the pasture seeds industry. Dr Chirgwin is testing bluegreen aphid populations collected from key lucerne-growing regions in New South Wales and South Australia for signs of evolutionary resistance.

“Our previous investigations through collaborative research with CSIRO, and funded by the Grains Research and Development Corporation, suggest these field populations may have evolved resistance to insecticides,” said Dr Chirgwin.

“So far, results from this project strongly suggest that all three field-collected populations of bluegreen aphids have evolved resistance to organophosphates (omethoate and chlorpyrifos) and carbamates (pirimicarb). These field populations were collected in 2020 and 2021 after we received reports from producers of chemical control failures. We will now test for bluegreen aphid resistance to a third group of insecticides – pyrethroids.”

While the evolution of insecticide resistance is reasonably common in some species of crop pests, such as green peach aphids, the resistance reported in bluegreen aphids as part of this project appears to be the first of its kind in this species.

“To better understand the mechanism underlying insecticide resistance in bluegreen aphids, we are also undertaking some preliminary molecular work. To do so, we are exploring whether any shifts in the DNA of the bluegreen aphid samples collected from our three field populations differ to a reference population of bluegreen aphids, which we know remains susceptible to current chemical control options.”

“A better understanding of what molecular mechanisms create resistance in bluegreen aphid populations will help us determine the likelihood these populations will have cross-resistance to other insecticides with different modes of action.”

The project team is also keen to determine just how far resistance may have spread to get a clear understanding of the potential impact.

“We’d like to develop a ‘map of resistance’ so to speak, so we can better understand which regions are most at risk during the coming season,” said Dr Chirgwin.

Growers experiencing issues with bluegreen aphid control are encouraged to contact Cesar Australia to help with the development of this resistance map.

Recommendations based on science

The rapid response to industry concerns around emerging resistance is allowing the research team to gather the critical information required to formulate a plan for lucerne growers to better manage bluegreen aphids going forward.

“Based on the findings of our experiments, we will provide recommendations to AgriFutures Australia and Lucerne Australia for managing bluegreen aphids in the short term and identify any additional work required to solidify long-term control options,” said Dr Chirgwin.

Katrina Copping, Lucerne Australia’s Executive Officer, has highlighted the importance of investing in the science behind reports of resistance to any agricultural chemicals before making industry-wide management recommendations.

“Without confirmation regarding what is happening in the field we are flying blind —this is imperative to informing future management strategies for the industry,” said Katrina. “The results of this preliminary research will ensure future investment in bluegreen aphid control is well directed.”

Katrina believes the collaboration between AgriFutures Australia and Lucerne Australia is critical for the lucerne seed industry. “Bluegreen aphids can be a major issue for lucerne seed growers and if we cannot achieve adequate control, it can negatively impact yield,” she said.

Emergency use permit for MainMan® offers an alternative option

Since the preliminary research project started Lucerne Australia has sought an emergency use permit for MainMan® — a Group 29 insecticide registered for the control of aphids in other crops, including apples, pears, cotton, cucurbits, potatoes and canola.

“This emergency permit will provide growers with another option for this season until the full results from the project have been delivered,” said Katrina.

“The willingness of the Australian Pesticides and Veterinary Medicines Association to respond so quickly to our call for an emergency permit indicates the level of industry-wide concern regarding the lack of options to protect the industry against pests, such as bluegreen aphids.

“The lucerne seed industry is a relatively small player on the broader rural industries stage and there has been concern leading into this season. This will give growers confidence until we can better understand insecticide resistance and implement management strategies accordingly.”

In the meantime, Dr Chirgwin and the project team will continue their work to identify any evolutionary DNA changes occurring in the resistant aphid populations. They are also testing the impact of other potential insecticide options, which could assist with future aphid management.

“Our bioassays will be finalised in the next few weeks and the results will form the basis of our recommendations back to AgriFutures Australia and Lucerne Australia,” said Dr Chirgwin.

Emma Rodham, AgriFutures Australia Program Manager is working closely with Lucerne Australia and Cesar Australia to respond quickly to grower concerns.

“I really commend Lucerne Australia for the strong relationship with its members, which supports such a rapid and proactive response to a key industry issue,” she said.

“This preliminary research paves the way for ongoing investigations into bluegreen aphid resistance and control. These results come at a good time to allow the Program to continue our investment in bluegreen aphid research. AgriFutures works with industry and with our research partners to identify and address such issues to ensure our industries remain viable and profitable. ”

Growers experiencing issues with bluegreen aphid control are can contact Dr Chirgwinvon echirgwin@cesaraustralia.com

To read more about AgriFutures Pasture Seed Program, visit: www.agrifutures.com.au/rural-industries/pasture-seeds/

TICKLE THOSE WEEDS THIS AUTUMN

Using the right tool at the right time is central to the implementation of a diverse weed control program. Surface disturbance is one tool that can put pressure on the weed seed bank and help provide a clean seedbed for the crop.

In an otherwise no-till farming system, using a skim plough, harrow, rake or disc chain implement to disturb the top few centimetres of soil can stimulate an even germination of weeds that can then be controlled prior to planting the crop.

This tactic is best suited to weeds such as annual ryegrass, paradoxa grass, wild radish and fumitory, which are easily released from dormancy. Soil type is also very important, with surface disturbance tactics being considered not suitable for sandy soils, non-wetting soils and those that develop surface crusts.

The effect of soil type is two-fold. One concern is the potential increased risk for wind erosion, and the second is that the autumn tickle relies on even wetting of the topsoil.

The ideal scenario for using the autumn tickle is following 20 mm of breaking rains on suitable soils with moderate to heavy stubble. The resulting germination of seedlings must be treated before seeding, preferably using a double-knock of glyphosate followed by paraquat, or seedbed tillage.

Kelly Tillage response to herbicide resistance

Shane Kelly's family has farmed at Booleroo Central, in South Australia's low rainfall zone for around 100 years. For the last 50 years, their focus has been on restoring the stony red brown earth soils that had suffered from severe erosion during the previous 50 years of farming.

"These soils have only five centimetres of topsoil over a dense clay subsoil. When we started the restoration program in earnest, we would budget for reseeding 20 per cent of the farm," said Shane. "After years of effective stubble management, we no longer need to budget for reseeding."

Shane is now leasing their 1000 ha farm to their neighbour so he can concentrate all his effort on their engineering business, Kelly Tillage, which is located on the farm.

"Our journey with shallow tillage implements started in the 1980s when we adopted minimum-till farming and full stubble retention to rebuild our soils and reduce water erosion risk," he said. "In the early days we used prickle chains to knock down the stubble, and by the early 2000s we had developed blunt disc chains for stubble mulching."

"Using the chains with clients in New South Wales, we saw they were very effective for managing summer weeds that had escaped herbicide treatment. From 2003 to 2006, there was rapid development of the technology, with weed control becoming the primary emphasis."

Shane Kelly, Kelly Tillage has found the autumn tickle strategy gives them at least five or six weed-free weeks after seeding where the crop can establish and compete against any late germinating weeds.

At the same time, the Kellys were also responding to herbicide resistance in annual ryegrass on their own farm. Their initial strategy was to use the blunt disc chain to stimulate weed germination immediately after breaking rains in autumn, followed by a double knock treatment ahead of seeding. Having a large, uniform flush of weed germination results in maximum herbicide efficacy as compared to staggered germination that usually occurs after a rainfall event.

"In 2012, we developed sharp discs that can interchange with the blunt discs and be used to kill the weed seedlings, including crop volunteers, that germinate after using the blunt discs," he said. "We still had big swathes of ryegrass germinating because there was no suitable harvest weed seed control tool at the time. The weeds would all come up at once, and we could then reduce our reliance on knockdown herbicides by following up with the sharp discs when seeding."

Shane found this strategy gave them at least five or six weeks where the crop could establish in a weed-free environment. They grow crops on 18 cm row spacing and sow at high seeding rates to ensure crops are as competitive as possible, expecting that the wheat and barley might only produce two or three viable tillers in their low rainfall environment (400 mm).

"In the first few years of stubble mulching, we saw evidence of nutrient tie-up in the crop," said Shane. "Now the system is working well, the soil organic matter has increased and the nutrients cycle quickly. The stubble is left standing until the autumn rains, and then we use the blunt discs to lay the stubble on the ground and stimulate the weeds. The nutrients are tied up for about four weeks, and by the time we plant they are being released and the crops just jump out of the ground on the same amount of starter nitrogen as others in the district apply."

Shane said their lease farmer has maintained the same farming practices and introduced oaten hay to the rotation with wheat, barley, canola, field pea and sometimes lupins.

Weed numbers are now much lower across the farm due to their persistent seed bank management. The disc chains are used once, and often twice, across the whole farm.

"We use all the WeedSmart Big 6 strategies except harvest weed seed control, but realistically the disc chains are fulfilling the same job as harvest weed seed control tactics like chaff lining and impact mills by killing seed that survived the previous year's control program," he said. "The operating costs for the disc chain implement, including wear and tear, are typically less than $10/ha, and the operation rate is normally around 15 ha/hr."

Kelly Tillage is a WeedSmart financial partner sharing in the philosophies of sustainable herbicide use and diverse farming systems in Australia and around the world.

For more information about managing herbicide resistant weeds, please visit the website: www.weedsmart.org.au

The blunt discs can be swapped for these sharp discs and used to kill the weed seedlings that germinate after one pass with the blunt discs on the chain.

UNEARTHING SOIL CONSTRAINTS TO CROP PRODUCTION

Growers and advisers will be better equipped to manage soil constraints in their paddocks after the development of a three-dimensional (3D) mapping strategy, currently trialled at farms in western Victoria.

This will give a greater understanding of the dynamics and location of constraints to crop production that lurk in the depths of the soil profile.

Agriculture Victoria senior research scientist Professor Roger Armstrong is leading the research, working closely with a team of scientists, technicians and PhD students.

The research effort is part of the Victorian Grains Innovation Partnership (VGIP) between Agriculture Victoria and the Grains Research and Development Corporation (GRDC).

“Growers often have trouble identifying what the soil constraints are in their cropping paddocks, the soil profile can be highly variable, and often they only analyse the topsoil,” Professor Armstrong said.

“However, our research is enabling us to use soil sensor technologies to 3D-map the location and severity of multiple soil constraints at a paddock scale.

“We then use the soil maps we have created and overlay them with ‘above-ground’ crop growth rates, which were developed using a range of crop sensor technologies,” he said.

“Combining the soil and crop-focussed maps links the 3D spatial arrangement of soil constraints within a paddock to crop performance. It can then provide a basis of how to manage these constraints, including soil amelioration using gypsum, organic matter or whether to leave unchanged.

“Our findings will inform the way growers assess soil-based crop constraints and how to tackle the problem to achieve optimal crop production and maximum profitability,” Professor Armstrong said.

So far, four farmer’s paddocks have been mapped using the new sensing techniques, located in the state’s medium-rainfall zone at Nurcoung, Nurrabiel and Wallup and in the high-rainfall zone at Wickliffe. Commercial crops grown in these paddocks included wheat, barley, faba beans and canola.

The VGIP aims to improve the enduring profitability of Victorian and Australian grain growers through world-class research and innovation.

For more information about research at Agriculture Victoria visit agriculture.vic.gov.au/about/our-research

For more information on the project led by Professor Armstrong visit this GRDC GroundCover article groundcover.grdc.com.au/agronomy/soil-and-nutrition/3d-mapping-profiles-soil-based-constraints

Source: Agriculture Victoria

PREPARING INDUSTRY ADVISORS TO GROW THE GRAINS SECTOR INTO THE FUTURE

Turlough Guerin, Director, Ag Institute of Australia (AIA) and CEO Landcare NSW

An industry-wide Chartered Agricultural Scheme (referred to as the Scheme) has been developed to recognise individuals that demonstrate professional expertise and understand practical ethics.

The scheme, is a global first, and focuses on enhancing governance at the individual leader level, and will help provide protection, as well as maintain the reputation and service delivery capability of, the growing agricultural and NRM sectors. It is voluntary and developed by the sector, for the sector.

The scheme is designed to enable a stronger, more resilient professional cohort in the sector. It is likely to be only a matter of time before the same scrutiny from the banking, the disability and host of industry reviews and Royal Commissions into mistrust and behavioural issues in Australia, will be applied to other professions in other sectors and industries. Agriculture and natural resource management (NRM) will be no exception.

The need for good governance, including practical ethics, for advisors in the financial sector was raised in the Royal Commission into the Banking and Financial Services Sector. It would be reasonable to assume that it will only be a matter of time before the same intensity of scrutiny is applied to other industries including agriculture and NRM.

Existing Certification & Accreditation Schemes

There is no shortage of professional certification schemes in most sectors. However, existing professional bodies focus on building technical capabilities but excluding the broader professional skills including training in ethics. The agricultural and NRM, is no exception. For example, in North America, there are approximately 50,000 professionals accredited to a range of competencies in the sector with varying requirements for attainment of certification. In Australia, several programs cover technical accreditation of those working in agriculture. The Ag Institute of Australia (AIA) has the Certified Practising Agriculturalist (CPAg: a professional development-based scheme recognising CPD points), with more than 100 members, Soil Science Society of Australia administers the Certified Practising Soil Scientist (CPSS) which has more than 130 members accredited. The AgSafe® accreditation program has around 5,000 registrations on the database for safe handling and storage of farm supplies, and the Fertcare® program has accredited more than 260 advisors for the fertiliser industry. Both programs provide premises accreditation with around 1,080 Fertcare® and 1,200 AgSafe® accredited premises. In addition, Irrigation Australia also provides specialist accreditation such as Certified Irrigation Professional. There are many other similar schemes that are tied to specialisations across the sector. While most current professional agricultural societies in Australia provide accreditation for technical competencies, there is no over-arching accreditation in non-technical, professional competencies such as business management, communication, legislative requirements, industry engagement and leadership. It is important to note that these schemes do not recognise, test nor do they build capability in ethics. Specialisation in the sector has driven this technical orientation in professional development, ignoring the fundamental need for ethics training and evaluation: a core element for demonstrating governance.

So Why Another Scheme?

The need for a more comprehensive scheme was identified as a need by members of the AIA as a "whole-of-industry" accreditation program to address a perceived market gaps. The Scheme builds upon the AIA's CPAg program, providing the next level up in the membership grading as well as recognising individuals that demonstrate expertise, professional experience, relevant accreditation and certifications, leadership and professional skills in the agricultural industry and those maintaining continuing professional development (CPD), and requires a practical knowledge of ethics. It embraces the principle of encouraging ownership of risk at the individual level, particularly in relation to risks associated with ethical considerations in decision making. The Scheme is now in its fourth year of operation. The Scheme is open to all agricultural professionals working in agriculture: those folks providing advice to farmers and landholders.

Requirements of the Chartered Scheme

Good governance, it can be argued, starts with effective professional development. By its nature as an accreditation scheme, it seeks to recognise high levels of expertise, ethics and knowledge across the whole agricultural industry, with associated rigorous requirements and eligibility. Professionals from other affiliated organisations that apply to the Scheme will use their relevant association's technical recognition requirements, ensuring applicants are certified from a technical or specialisation perspective, by that particular association. The AIA, as the "steward" for the Scheme, therefore, does not undertake the detailed evaluation of technical competence of applicants from outside the AIA. The technical evaluation is undertaken by subject matter experts within the applicant's own association such as the Soil Science Society of Australia, Crop Consultants Australia, or the Agronomy Society of Australia

Therefore, when a professional applies to be Chartered, they need to demonstrate that they are recognised i.e. accredited, by an affiliated organisation. Applicants can then complete the next steps towards becoming a CAg. The Scheme recognises leaders of the agricultural industry, and the application process ensures that the Scheme is robust and professional. The details of the CAg Scheme are outlined in the Scheme design document which is available publicly (see www.aginstitute.com.au). The requirements for becoming Chartered under the Scheme are listed in items 1-7 in the following subsections.

1. Formal qualifications
   Postgraduate training – the equivalent of the Australian Qualifications Framework (AQF) level 9 to conform with Chartered International best practice. These qualifications can be a Master's in agriculture (or related field) or Bachelor Honours, Graduate Diploma in Agriculture or NRM and a Masters in any other area.
2. Professional organisation
   The applicant is currently certified by a professional organisation i.e., CPAg (AIA), CCA Accreditation, CPSS (Soil Science Society of Australia), Irrigation Australia, etc.
3. Professional work experience
   Minimum of 5 years' experience with a minimum of 3 years in a senior management position to show that you are a leader in the agricultural industry.
4. Professional standards
   Demonstration of your knowledge, leadership, consulting skills, and problem solving, interpersonal skills, business and organisational skills, all of which support sustainable agriculture and NRM (see Table 1).
5. Pass the ethics exam
   The Ethics Policy and Code of Ethics form a foundation on which the Chartered Scheme is based. Applicants are required to adhere to this policy and code and will be required to pass a timed ethics examination (70 minutes, 10 questions, and 2 case studies). To pass requires knowledge of the AIA Code of Ethics and a working knowledge of ethics from senior agricultural consulting and advisory roles.
6. Show evidence of reflective learning
7. Successful applicants will provide evidence that they have undertaken reflective learning throughout the assessment period. This could include evidence of journal entries.
8. Maintain your status through Continuing Professional Development (CPD)
9. Build upon your existing activities and record 60 CPD points over three years to maintain your commitment to growth and your Chartered status. Chartered CPD activities may include attendance at conferences, conference presentations, PhD or masters training, field trips, AIA or affiliated organisational CPD events.

Keeping it Professional

The Scheme development has been an industry initiative, an example of industry self-regulation. The most notable acknowledgement of the Scheme has been the "mainstreaming" of ethics into the membership language, including in publications, communications, and the delivery of an ongoing webinar series on ethics in agriculture, referred to as the Ethics Masterclass Series.

The requirement to pass the timed ethics exam caused some concern by applicants. The application process involves 3 chances to complete the timed exam before individuals were required to consult with the Chartered Scheme Committee to receive coaching and feedback. The majority of applicants have exceeded the pass mark set at 50%. Enrolments in the Scheme have been low relative to the total addressable market of professionals in the wider population that are active in the agriculture and natural resource sector. Nevertheless, the current cohort of 80 represents the initial, early adopters, and this number is expected to increase over time. There are limitations of course in such industry self-regulation. For example, there are very few mandates or requirements (from clients or government agencies) that specify CAg (or many other agricultural and natural resource management accreditations for that matter). The absence of government or stronger industry self-regulations that require Scheme membership as a requirement to doing business (or winning a tender), is a barrier to uptake. But this is also a "chicken and egg" situation, as the existence of the Scheme itself is expected to drive uptake of demand as professionals seek to set themselves apart and as corporate-minded farmers look to have their managers recognised as leaders.

Conclusions

Australian agriculture is a booming industry and the grains sector is at the centre of this growth. The industry has set its own target to be a $100 bn annual revenue sector by 2030. Recent estimates at $78 bn in 2021-22 suggest it may reach this goal before then. Yet the social licence, practices and ethics of farmers and the agricultural industry are under regular scrutiny in Australia. The debates on the sustainability of meat versus plant proteins, and intensive agricultural production, whether of crops or livestock, are just two examples. Further, the expectations of professionalism from consultants, from farmers (advisor's clients), industry, government, as well as consumers, are increasing. The Chartered Agriculturalist Scheme has been developed to deliver a new approach to professional accreditation at the highest professional grading, within the agricultural and NRM services sector in Australia. While none of the initiatives taken as a result of the Scheme development are mandated by governments or their agencies, they can only help strengthen the governance of the sector.

About the Author

Turlough Guerin is the CEO of Landcare NSW He is a Fellow of the Governance Institute of Australia and a Graduate Member of the Australian Institute of Company Directors. He is also a Director, Ag Institute of Australia.

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MAXIMISING THE BENEFITS OF NEW PRE-EM CHEMISTRY

Cindy Benjamin, WeedSmart

New pre-emergent herbicides on the market have increased growers' options for mixing and rotating modes of action in cereal and broadleaf crops this winter.

Greg Condon, WeedSmart extension agronomist for southern NSW, said the wet conditions experienced last season gave some useful insights into the new chemistries under commercial field conditions.

"In central and southern NSW, the 2021 winter cropping season started dry and soon became very wet," said Greg. "There was a lot for us to learn with five new pre-emergent herbicides either coming to market or in their final pre-release trials."

"Last season, we observed the importance of matching the right herbicide to the soil type and soil moisture levels, and how critical it is to get the seed depth right and the furrow closed to ensure crop safety and effective weed control."

Heading into the 2022 winter cropping season, Greg emphasises the need for growers and agronomists to familiarise themselves with how these new herbicides behave in the soil.

"These herbicides are all well-suited to minimum and no-till systems with significant stubble load," he said. "Collectively, they are generally more mobile in the soil and wash off stubble easier than many of the older pre-emergent herbicides. Following the label directions carefully will provide the best protection of the crop from potential damage."

"These new products offer growers increased flexibility in application timing and bring new modes of action for rotational use in cereals and broadleaf crops," he said. "Having more diversity in any herbicide program will extend the effective 'life' of all the products used."

Overwatch – cereals and broadleaf crops – annual ryegrass and some broadleaf weeds

FMC Australia introduced Overwatch (bixlozone, Group 13 [Q]) for application in cereals and canola in 2021, and the registration will extend to include faba bean and field pea for the 2022 season. Greg said that in the wet conditions experienced in southern NSW in 2021, Overwatch reduced early crop growth and caused crop bleaching, particularly in barley, and the slow recovery in some crops resulted in reduced crop competitiveness. These effects were less noticeable in wheat and canola crops, which generally fully recovered from any crop injury. In all cases, the herbicide provided effective ryegrass control.

"If conditions are wet, I would be cautious using Overwatch in barley on sandy and low organic matter soils or high stubble load fields," said Greg. "Accurate seeding depth and closing the furrow is critical for crop safety. Even under wet conditions, Overwatch is an excellent rotation option for ryegrass control in wheat and canola."

Mateno Complete – cereal crops – grass and broadleaf weeds

Bayer Australia has launched Mateno Complete, which includes three active ingredients (aclinofen [Group 32], pyroxasulfone [Group 15 (K)] and diflufenican [Group 12 (F)]), for the 2022 season. It is registered for application in wheat and barley and offers the flexibility of both incorporated by sowing (IBS) or early post-emergence (EPE) application timing.

"Mateno Complete provided good control of grass and broadleaf weeds in the pre-release demonstration crops in southern NSW in 2021," said Greg. "It performed particularly well when applied early post-emergence (EPE) in wheat. An effective strategy is to apply a lower cost pre-emergent before or at sowing, followed by Mateno Complete soon after crop emergence. This strategy provides long residual control, particularly of shallow germinating weeds, and is considered a herbicide 'mix' even though the products are applied separately."

Callisto – cereal crops – broadleaf weeds

Syngenta Australia's Callisto (mesotrione, Group 27 [H]) provides pre-emergent control of broadleaf weeds in wheat and barley. Greg said the product was observed to provide 10 to 12 weeks of residual activity on sowthistle and volunteer Clearfield and Roundup-Ready canola.

"Callisto must be applied using a knifepoint press-wheel system only," he said. "For crop safety, plant at a depth of 30 to 40 mm, and close the furrow. In 2021, weeds were observed in the furrow, and crops recovered well from any crop damage. Callisto is a relatively lower cost option for strategic use in a herbicide program."

Greg Condon, WeedSmart extension agronomist for southern NSW, said the five new pre-emergent herbicide products offer growers increased flexibility in application timing and bring new modes of action for rotational use in cereals and broadleaf crops.

Untreated pulse crop (left) compared to treated with new pre-emergent herbicide, Ultro (right).

Ultro – pulse crops – grass weeds

Ultro (carbetamide, Group 23 [E]) is new chemistry from Adama Australia to target ryegrass, brome and barley grass in pulses in 2022. Greg said care is required in sandy and low organic matter soils and high stubble load fields.

"In the wet seasonal conditions experienced in southern NSW in 2021, we saw Ultro provide excellent control of the target grass weeds and minimal crop safety problems in the pre-release demonstration crops," he said.

Reflex – pulse crops – broadleaf weeds

Reflex (fomesafen, Group 14 [G]) is another new product from Syngenta Australia, providing another option for pre-emergent control of broadleaf weeds in pulses.

"In 2021, Reflex did not have any crop safety issues, even in wet conditions," said Greg. "It is important to check the label carefully and follow the directions for each pulse species. Depending on the rainfall outlook and weed spectrum, Reflex can be mixed with simazine, diuron or Terbyne."

Voraxor and Terrad'or – pre-sowing knockdown with residual activity – alternative to glyphosate

BASF's Voraxor (two Group 14 [G] actives, saflufenacil + trifludimoxazin) and Nufarm Australia's Terrad'or (tiafenacil, Group 14 [G]) are both knockdown spikes with residual activity. "These herbicides can be mixed with either glyphosate or paraquat, with paraquat being the preferred mix partner, as part of a double or triple knock program. This has been effective for treating sowthistle, fleabane or glyphosate-resistant annual ryegrass," said Greg. "Take note of the plant back period when using these products as a spike, particularly when canola is planned for the field."

"Pre-emergent chemistry is a key tactic in an integrated weed management program, and these new releases significantly expand the options for growers to mix and rotate modes of action throughout the crop sequence," said Greg. "Obviously, the seasonal conditions will vary between seasons and regions, so it pays to be very familiar with the specific use patterns for these new products."

"The WeedSmart Big 6 recommends stacking many tactics up against weeds. A combination of pre-emergent herbicide and strong crop competition is a very powerful way to suppress weed growth and weed seed production."

For more information about maximising the benefits of new chemistry, please visit the website: www.weedsmart.org.au

CHECK PLANTS FOR BLUEBERRY RUST

Australian growers have been urged to check plants for signs of blueberry rust, after laboratory analysis confirmed a detection of the serious fungal disease in a nursery near Perth.

Blueberry rust, which has not been detected in Western Australia before but is found in the eastern states, is a notifiable disease that impacts blueberry fruit production by causing reduced vigour, premature leaf loss and reduced yield.

The Department of Primary Industries and Regional Development (DPIRD) is working with the nursery and horticulture industries to contain the disease, which is spread by tiny spores.

The department is undertaking tracing and delimiting surveillance to determine the spread of the disease, which will be supported by monitoring and reporting by industry and the public.

DPIRD Chief Plant Biosecurity Officer Sonya Broughton urged gardeners and growers to inspect plants regularly for disease symptoms and to report any suspect observations to the department's Pest and Disease Information Service or via the MyPestGuide Reporter app.

"Symptoms are most noticeable on the underside of leaves, where yellow pustules can appear, which release thousands of yellow spores that can infect other leaves and spread the disease," she said.

"Also look for small reddish spots on the upper surfaces of young leaves, which can darken with age and often surrounded by a yellow halo. Disease pustules may also appear on fruit later in the season."

Blueberry rust can be managed using permitted fungicides or by planting tolerant varieties. Good on-farm and garden hygiene is also imperative to prevent the disease from spreading, including using clean garden tools, washing shoes and clothing and limiting the movement of vehicles and garden implements near plants.

Dr Broughton encouraged growers and gardeners to employ a 'come clean, go clean' approach to crop and garden management. "It is important not disturb or move the plant, while care should be taken to ensure that any clothes or equipment do not become contaminated," she said.

"If you suspect blueberry rust is present in your plants you must report it immediately, as it is a notifiable disease."

The DPIRD website has detailed information on disease symptoms, onfarm hygiene measures and monitoring and reporting measures.

Report suspect blueberry rust symptoms to the department via the MyPestGuide® Reporter app or to its Pest and Disease Information Service on +61 (0)8 9368 3080, email padis@dpird.wa.gov.au

FREE FTR GRASS HERBICIDE RESISTANCE TESTING

Riverina and Central West farmers are being invited to send feathertop Rhodes grass seeds to the NSW Department of Primary Industries (DPI) for free herbicide resistance testing, as researchers strengthen strategies to manage the weed.

NSW DPI principal research scientist, Dr Hanwen Wu, said resistance to glyphosate and Group 1 (previously A) herbicides has been identified in plants from northern NSW and southern Queensland.

“Samples from cropping paddocks only are needed, ideally 30 mature seed heads with tiny black seeds from 10 different plants in each paddock,” Dr Wu said.

“We know glyphosate control of feathertop Rhodes grass has been variable in southern NSW, and Group 1 herbicides are prone to developing resistance.

“With feathertop Rhodes grass continuing to spread south, where it devalues pasture and reduces productivity, this survey will allow us to benchmark herbicide resistance in southern NSW to help growers better manage this invasive weed.”

Test results will be sent directly to farmers and will help inform a joint Grains Research and Development Corporation (GRDC) and NSW DPI research project, led by Dr Wu, which is investigating management tactics best suited to southern NSW.

Farmers are asked to: Place seed heads in an envelope labelled with the date of collection, your name, mobile phone number, nearest town and GPS location, if available.

Please send samples to:

Feathertop Rhodes grass
NSW Department of Primary Industries
Wagga Wagga Agricultural Institute
PMB Pine Gully Road
Wagga Wagga NSW 2650

BE ON THE LOOKOUT FOR SPONGY MOTH

Call the Exotic Plant Pest Hotline, 1800 084 88, if you see signs of the exotic pest. Its distinctive hairy caterpillar has five pairs of blue and six pairs of red spots.

The NSW community has been asked to look out for signs of spongy moth following recent heavy rainfall, providing an ideal environment for the exotic plant pest to thrive if it were to arrive here.

NSW Department of Primary Industries (DPI) Chief Plant Protection Officer, Satendra Kumar, said spongy moth, Lymantria dispar, poses a serious biosecurity risk to Australia.

“Spongy moth caterpillars feed on the leaves of more than 600 species of trees, including eucalyptus, fruit and ornamental plants,” Dr Kumar said.

“This pest has not been found, and is not wanted, in NSW. With the potential to damage and completely defoliate trees, it could devastate our environment, agribusinesses and horticultural industries.”

Spongy moth eradication programs in North America and New Zealand have cost $20 million and more.

Moth egg masses, about 40 by 20 mm in size, are covered in yellowish scales, can contain more than 1000 eggs and tolerate extreme temperatures and moisture.

If weather conditions are right, freshly hatched larvae can spin silk threads and drift on air currents for up to eight kilometres. Feeding damage from larvae appears as holes in the leaves or irregular leaf margins. As larvae grow, whole leaves may be consumed. Each larva consumes about one square metre of leaves in its lifetime.

The distinctive hairy caterpillar has five pairs of blue and six pairs of red spots on its back. Grey-brown adult males have a wingspan of 30 to 40 mm. Female moths are pale yellow with dark brown markings with a 40 to 70 mm wingspan and can fly distances of up to 40 km.

Spongy moth, formerly known as gypsy moth, is a notifiable plant pest in NSW – if you think you have found one, call the Exotic Plant Pest Hotline on 1800 084 881 or send a clear photograph via an online form or to biosecurity@dpi.nsw.gov.au with your contact details.

FREE SCREENING SERVICE TO TEST FOR INSECTICIDE RESISTANCE IN THE REDLEGGED EARTH MITE

Have you noticed a chemical control failure or suspect insecticide resistance in redlegged earth mite (RLEM)? If so, we can help to test whether your local RLEM populations have developed insecticide resistance.

RLEM is a major pest affecting crops and pastures across southern Australia. Chemical pesticides available for their control are decreasingly effective due to the evolution of resistance. Insecticide resistance in RLEM is increasing across southern Australia and resistance to both pyrethroids (SPs) and organophosphates (OPs) is now widespread across Western Australia and since 2016 has been confirmed in multiple populations from South Australia and in Victoria.

Cesar Australia is offering a screening service to test for insecticide resistance in RLEM within South Australia, Victoria, NSW and Tasmania. The screening is at no-cost for Australian grain and pasture growers and advisers, thanks to funding by the Grains Research and Development Corporation (GRDC) and additional co-investment by AgriFutures and Meat and Livestock Australia (MLA).

We are particularly interested in hearing from growers or advisors who have had noted recent or past failures or have paddocks that are frequently impacted by the mites, and often require spraying.

The service will not only help detect any resistance before it becomes widespread but will also help identify the best control options for growers.

Cesar Australia will be undertaking field trips in the coming months to collect RLEM for resistance screening, so get in touch if you would like us to collect RLEM from your area. A collection kit can also be provided containing the necessary equipment to send mites in for screening if required.

For further information or to access the resistance testing service, please contact:

Dr Aston Arthur, Cesar Australia
Phone 0427 875 040
aarthur@cesaraustralia.com

Image Credit: Andrew Weeks, Cesar Australia

FIRST INTERNATIONAL DAY OF PLANT HEALTH HIGHLIGHTS NEED TO PRIORITISE PEST AND DISEASE MANAGEMENT

The United Nations (UN) has nominated the 12th of May as the first International Day of Plant Health to raise global awareness of the impact of pests and diseases to food security, agricultural productivity and livelihoods.

The UN is campaigning for policies and actions that promote plant health which are fundamental to reaching Sustainable Development Goals particularly focussed on global hunger and the environment. These issues are core to the mission of the plant science sector.

Plants make up 80% of the food we eat and 98% of the oxygen we breathe and yet they are under constant attack from pests and diseases which destroy up to 40% of food crops every year.

Chief Executive Officer of CropLife Australia, the national peak industry organisation for the plant science sector, Mr Matthew Cossey, said, “CropLife Australia welcomes the UN’s decision to establish an annual International Day of Plant Health. It reinforces the need for policy and regulation which is informed by science and enables farmer access to the important tools and products of the plant science industry.

“Prioritising investment in plant health related research, outreach, technologies and innovation is crucial to delivering better environmental and food security outcomes. The plant science industry invests billions of dollars each year into the research and development of new crop protection products to support this endeavour.

“Our industry’s products are used on the frontline of defence for maintaining plant health and natural environments. These products restrict the spread of invasive weeds on farming land and in our national parks as well as counter the risks posed to farming by insects, pests and diseases.

These challenges will only be further exacerbated in the face of climate change. Growing heathy plants also ensures that harvested product is free from disease and safe for humans,” said Mr Cossey.

“The plant science industry also invests in the development of new plant varieties that can withstand biotic and abiotic stressors through new breeding techniques enabled by biotechnology. These new varieties support the growth of healthy plants in changing and challenging environments, such as crops that are drought tolerant or resistant to insect damage.

“The plant science industry is playing an active role in achieving global sustainability targets by providing farmers and environmental land managers with the tools required to adapt and respond to the ever increasing challenge of sustainably producing food. However, this can only happen if all key sectors including industry, farmers, governments, NGOs and the community more broadly work together,” concluded Mr Cossey.

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