AUTUMN 2021

CropLinks

THE LATEST PLANT SCIENCE INDUSTRY NEWS

Fruits and vegetables take centre stage

INTERNATIONAL YEAR OF FRUITS AND VEGETABLES 2021

But Australians need to increase their intake

The United Nations declared 2021 as the International Year of Fruits and Vegetables to raise awareness of the nutritional and health benefits of fruits and vegetables as part of a balanced diet and healthy lifestyle.

The World Health Organization recommends consuming at least 400 grams of fruit and vegetables each day. Fruit and vegetable consumption has been linked to benefits including improved growth and development in children; longer life span; better mental well-being; a healthy heart; lower risk of developing some cancers; lower obesity risk; lower diabetes risk; better gut health; and improved immunity.

Globally we consume only about two-thirds of the daily recommended intake of fruit and vegetables. These numbers vary around the world due to a lack of availability, challenges in production, transport and trade, and high prices. These factors can make fruits and vegetables inaccessible to many, especially in developing countries.

Did you know?

Red fruits and vegetables can help lower the risk of cancer and improve heart health.

Orange or yellow fruits and vegetables contain carotenoids that help keep eyes healthy.

Green fruits and vegetables contain phytochemicals with anti-cancer properties.

Purple or blue fruits and vegetables have antioxidant properties that can reduce the risks of cancer, stroke and heart disease.

Brown or white fruits and vegetables contain phytochemicals with antiviral and antibacterial properties as well as potassium.

Inside this issue

REPRESENTING THE BEST OF THE PLANT SCIENCE INDUSTRY

CropLife Australia

THE LATEST PLANT SCIENCE INDUSTRY NEWS

Matthew Cossey
Chief Executive Officer, CropLife Australia

CropLife acknowledges the original farmers and custodians of the land.

From the CEO

In her first address to the National Press Club, Australia's newly appointed Chief Scientist, Dr Cathy Foley AO, talked about how science seems to be at its best when faced with a crisis, such as pandemics, or major challenges, such as feeding the world.

This is something that the plant science industry knows all too well, as it is the challenge of feeding the world which is the foundation of the science that is the origin of our industry.

The innovations of the plant science industry, specifically new seed varieties and chemical crop protection products, along with the adoption of modern scientific methods of farming, were at the centre of the Third Agricultural Revolution. The Green Revolution, as it is more commonly referred to, occurred more than half a century ago and remains the foundation of our modern farming systems that delivered a step change in production and productivity.

It is the innovations of the plant science industry that will be at the core of the fourth agricultural revolution, which will be required to achieve another leap in production and enable farming to become even more environmentally sustainable. This fourth revolution will need to be undertaken by the farming sector and supporting industries in even more challenging circumstances in every sense; climatically, economically, socially and scientifically.

Pesticides have had a hugely positive impact on global food production, yet there remains a serious lack of understanding about their safety and importance, not just to farming but to the protection and restoration of our natural environment and human health.

Crop protection chemistry remains vital to supporting modern food production. Almost three-quarters of all food produced in Australia is directly attributed to the use of crop protection products. That means more than $20 billion of Australian crop production is enabled by pesticides. Without pesticides, the world would lose up to 50 per cent of crucial food crops, devastating global food supply.

Australia's agricultural sector continues to grow with confidence in the knowledge that advanced crop protection technologies will continue to successfully manage the dynamic, evolving and ever challenging pest risks that farmers face. That cannot be taken for granted. It is crucial that Australian farmers continue to have access to necessary farming inputs for farming now and into the future.

This will allow our farming sector to continue delivering for Australian consumers, who are increasing their demand for a greater variety of high-quality safe foods, as well as remain a globally competitive agricultural exporter, to even more international markets.

Fruits and vegetables take centre stage

(cont from page 1)

In Australia, fruit and vegetable consumption rates are alarmingly low despite having access to a bountiful supply.

Half of Australian adults and two-thirds of children have an adequate daily intake of fruit and just seven per cent of Australian adults and five per cent of children are meeting the recommended guidelines for daily vegetable intake. The International Year of Fruits and Vegetables provides an opportunity for Australians to increase their consumption and reap the health benefits.

A Deloitte Access Economics report released in 2018 estimates that up to $20.6 billion of Australian agricultural output (or 73 per cent of the total value of Australian crop production) can be directly attributed to the use of chemical crop protection products. Without pesticides the world would lose up to 50 per cent of crucial food crops, devastating global food supply.

While the International Year of Fruits and Vegetables has a focus on fresh produce, it recognises processed forms of fruit and vegetables as important sources of income for farmers, a key part of diets for people unable to easily access fresh produce and a means to reduce food waste, another focus of the International Year of Fruits and Vegetables.

Food waste contributes around eight per cent of global greenhouse gas emissions and can cause as much damage to our planet as plastic waste. Food is wasted for cosmetic reasons like size, shape or colour, by consumers who misunderstand "best before" labels and general overbuying. The waste reduction efforts of the United Nations and governments around the world have a strong ally in the plant science industry.

As consumer demands for the "perfect" fruit and vegetables lead to half of all produce being thrown away, gene-edited products like Arctic Apples are being introduced. Developed using CSIRO technology by a Canadian company and now available to purchase in the US, these apples essentially eliminate browning and are therefore less likely to be thrown away, cutting food waste.

Restaurants and hotels across the globe have taken notice of the International Year of Fruits and Vegetables with popular establishments like Canberra restaurant Monster Kitchen and Bar going vegetarian for the year.

As part of a commitment to environmental sustainability the restaurant has said it will incorporate techniques from previous experiences to "showcase vegetables through a refined menu offering", with fermenting and pickling to be prominent across the menu, as well as produce from the in-house kitchen garden.

* FAO. 2020. Fruit and vegetables – your dietary essentials. The International Year of Fruits and Vegetables, 2021, background paper. Rome. https://doi.org/10.4060/cb2395en
* Deloitte Access Economics. 2018. Economic activity attributable to crop protection products. Canberra. Report commissioned by CropLife Australia.
* Australian Institute of Health and Welfare 2019. Poor diet. Cat. no. PHE 249. Canberra: AIHW. Viewed 13 April 2021, https://www.aihw.gov.au/reports/food-nutrition/poor-diet

Crop Protection

New guide released to inform about the importance of pesticides

Misha Schubert, Science and Technology Australia CEO, Hon. David Littleproud MP, Minister for Agriculture, Drought and Emergency Management and Matthew Cossey, CropLife Australia CEO

CropLife Australia has released *The official Australian reference guide for organic, synthetic and biological pesticides* to ensure better informed and fact-based discussions about the regulation and essential role of pesticides in agriculture, environmental management and human health.

Industry and farmer group representatives and academics were joined by several Parliamentarians for the launch on 18 March at an event at Parliament House as part of Science meets Parliament.

Minister for Agriculture, Drought and Emergency Management, the Hon. David Littleproud MP, officially launched the Guide. CEO of Science and Technology Australia, Misha Schubert, also addressed attendees on the importance of effectively communicating science.

CEO of CropLife Australia, Matthew Cossey, also spoke at the event on the importance of the community having a better understanding of the crucial importance of pesticides and on farming more broadly.

Mr Cossey said, "The innovations of the plant science industry were at the centre of the Third Agricultural Revolution and it will again be the innovations of the plant science industry that will be at the core of the fourth agricultural Revolution.

That is what Australia needs to achieve another leap in production and enable farming to become even more environmentally sustainable. Access to new modern pesticides is crucial for Australia to meet its food production goals and aspirations, protect the natural environment from invasive species and safeguard human health from disease-spreading pests and harmful crop and produce funguses."

In Australia, like the rest of the developed world, food has never been safer and never has there been such variety of produce available to consumers. Mr Cossey said now more than ever, there is peak interest in food amongst growing urban populations, however, it is correlating with a peak in ignorance of how food is produced and farming generally.

"The world needs to produce as much food over the next 50 years as we have since the beginning of humanity, more than 30,000 years ago.

That is a staggering challenge requiring a massive effort from the entire agricultural sector. Farmers will need access to all and every safe tool, product and innovation to do it, especially pesticides – be they organic, synthetic, or biologically based."

The Guide has been compiled using information and data from leading specialists here in Australia and around the world, with contributions and analysis from expert technical committees.

Matthew Cossey concluded by saying, "Better informed and fact-based discussion and public policy development are crucial for Australia to meet its food production goals. This Guide seeks to constructively contribute to that outcome. We need the broader community to have a better understanding of modern farming so they recognise what is great about it and don't seek to dictate certain outcomes from a position of ignorance, that may indeed work against what the community actually wants from farming."

The official Australian reference guide for organic, synthetic and biological pesticides will help consumers understand the essential role pesticides play in not only agriculture but also in environmental conservation and human health and is available at **croplife.org.au**

Blackberry, one of Australia's worst weeds

Ensuring environmental health through pesticides

Protecting the Australian environment is a battle for environmental land managers. The Australian environment is constantly under attack from invasive weeds and other pests.

Like farmers, Australia's environmental land managers, such as the parks and wildlife services, rely on the use of pesticides to effectively defend and protect our natural environment from threats.

Invasive weeds and other pests can have major negative impacts on Australia's natural environments as they can damage the diversity and balance of ecosystems.

These changes threaten the survival of many native plants and animals because weeds compete for space, moisture, nutrients and sunlight.

Endangered species face numerous threats, including development, pollution and climate change. The greatest threat they face is from established invasive species. Pesticides are crucial tools employed by environmental land managers in protecting Australia's endangered species.

The plant science industry provides Australia's land managers with the innovative tools that are crucial to controlling invasive weeds and pests throughout Australia's national parks, in public parks, golf courses, gardens and to control weeds alongside roads, buildings, pathways and other public infrastructure.

In a great example of environmental conservation targeted weed control, the ACT Parks and Conservation Service has used the tools of the plant science industry to successfully control the spread of blackberries in the wet sclerophyll forests of the northern area of the Namadgi National Park.

While we all love blackberries in fruit salad, in the pristine environments of national parks the blackberry bush can spread rapidly if not controlled, destroying the native flora and compromising the natural ecosystem.

Without the use of a range of specialised pesticides and the hard work of park rangers, spray contractors and other environmental land managers, ecosystems such as those in Namadgi National Park would succumb to the significant threat of invasive species.

Blackberry invasion

Post targeted herbicide spraying program

Native plants return

Crop Biotechnology

Crop
BIOTECHNOLOGY

Modernising Australia's Gene Technology Scheme

Following the Third Review of the National Gene Technology Scheme, the Federal Department of Health is seeking to modernise and futureproof Australia's National Gene Technology Scheme. This presents an opportunity for Australia to remain a world-leader in biotechnology regulation.

In 2018 the Legislative and Governance Forum on Gene Technology declared that products created through the gene-editing technique SDN-1 would be exempt from regulation given the outcomes were indistinguishable from products created through conventional methods. With biotechnology making huge leaps in the areas of agricultural and medical research, the regulatory system must keep pace. Now is the time to go further and de-regulate gene-editing techniques like SDN-2 and Oligo-Directed Mutagenesis (ODM), the products of which could quite literally save lives.

These types of techniques were used in the new cancer treatment known as CAR T-cell therapy, via the product Kymriah® (tisagenlecleucel), which was approved by the Therapeutic Goods Administration of Australia in early 2021. It is used for the treatment of leukaemia and lymphoma in patients where alternative treatment options have been exhausted. CAR T-Cell therapy is a once-off, individualised treatment that uses gene-editing techniques beyond the capability of SDN-1 to reprogram the patient's own T-cells to fight cancer.

Prior to approval, Australians receiving immunotherapy were required to have blood collected and sent overseas to undergo the reprogramming process before the cells could be returned and used for treatment.

Enabling Australia's first onshore commercial manufacture of the therapy substantially reduced patient treatment time. Government approval also led to subsidised access to the treatment, providing eligible patients with new hope and the prospect for improved quality of life.

Due to this approval, institutions such as the Peter MacCallum Cancer Centre can continue to explore the technology and expand possibilities for the treatment of other cancers.

Interest in agricultural applications for these techniques is also growing. In late 2020, a Japanese start-up was granted approval by Japanese regulators for the commercial release of a new tomato variety with enhanced nutritional properties. The tomato was gene-edited to increase the accumulation of the naturally occurring amino acid, gamma-aminobutryric Acid (GABA). It has nutritional benefits for treating metabolic disorders and reducing blood pressure and stress.

Set for release in May 2021, the Sicilian Rouge High GABA tomato will be the world's first direct consumption gene-edited tomato.

Widespread government-led marketing campaigns in Japan to educate consumers about the difference between genetically modified organisms (GMOs) and gene-edited crops, means there is a higher level of understanding and acceptance of these products than in other parts of the world.

The Sicilian Rouge High GABA tomato took over 15 years to produce. Commercialisation was only viable because unnecessary regulation was removed providing clarity on gene-edited plants and their products where they are developed comparably to natural processes of genetic mutation.

Many applications of SDN-2 and ODM use site-specific guides and repair templates that allow for highly specified changes and predictable outcomes in comparison to randomly induced mutations when using SDN-1 techniques. This increased specificity not only accelerates product development but allows for greater predictability and increased success of the desired alteration.

Continuing to regulate techniques such as SDN-2 and ODM which have a history of safe use as genetic modification will hamper the development of critical technologies in medicine and new nutritious produce choices.

Plant-based vaccines

Due to COVID-19, everybody is talking about vaccines. But did you know we can use plants to produce vaccines, in a safe, rapid and scalable way?

Medicago, a biopharmaceutical company based in Canada is doing just that using innovative plant-based technologies to provide rapid responses to emerging global health challenges, developing vaccines and therapeutics. Medicago is known for the production in plants of "virus-like particles" (VLP), that mimic the structure of viruses. VLP, once purified, can be used as vaccines, inducing an immune response without causing infection. So far, the technology has been used to develop vaccines against viruses such as the flu, or viruses causing severe vomiting and diarrhea.

The technology allows for the rapid production of a vaccine that matches circulating variants.

The Australian National University has recently signed a five-year collaboration with Medicago to develop new methods for monitoring the growth and performance of the plants producing VLP, in a non-invasive way. The Centre for Entrepreneurial Agri-Technology (CEAT) played a crucial part in bringing a cross-disciplinary team together from the ANU College of Engineering and Computer Science and the ANU node of the Australian Plant Phenomics Facility (APPF). The APPF is enabled by the National Collaborative Research Infrastructure Strategy and this project reflects the aim of NCRIS to support high-quality research that will drive greater innovation and address key national and global challenges.

CEAT was founded by the ANU, CSIRO and the ACT Government in 2018 and has since become an ANU Innovation Institute. CEAT's mission is to bring together experts from a range of disciplines to collaborate with producers, industry and end-users, to co-design innovative solutions to challenges facing agriculture in Australia and beyond.

Centre for Entrepreneurial Agri-Technology

NSW to get full access to approved GM crops

Farmers in New South Wales will be able to access all approved genetically modified (GM) crops, following the government's announcement in early March that it would not seek to extend the moratorium due to expire on 1 July.

This will bring NSW into line with all other mainland states and Australia's major international agricultural competitors. Such a decision allows farmers to grow what best fits their needs and business model, which is crucial as they face periods of drought and increasingly harsher conditions in a changing climate.

GM crops are not new to NSW. Farmers have grown GM cotton and GM canola since 1996 and 2008 respectively through specific exemptions.

Since the adoption of GM cotton in the mid-90s, cotton growers have reduced pesticide use by 97 per cent per bale with the average number of insecticide sprays each season down to three, in comparison with an average of 11 sprays prior to its introduction. This significant reduction in insecticide use, coupled with better pest management, has contributed to on-farm savings, reduced CO2 emissions and improved sustainability.

The NSW agricultural sector is highly trained and experienced in managing the co-existence of GM and non-GM crops on farm and in the supply chain. All the processes for accreditation, licensing or stewardship are already in place with the NSW Farmers' Association in support of the use of approved biotechnology to progress agricultural production and improve choice for all farmers.

The expiration of the moratorium will encourage stronger research and innovation and facilitate access to current and future GM crops approved for commercialisation.

Industry Stewardship

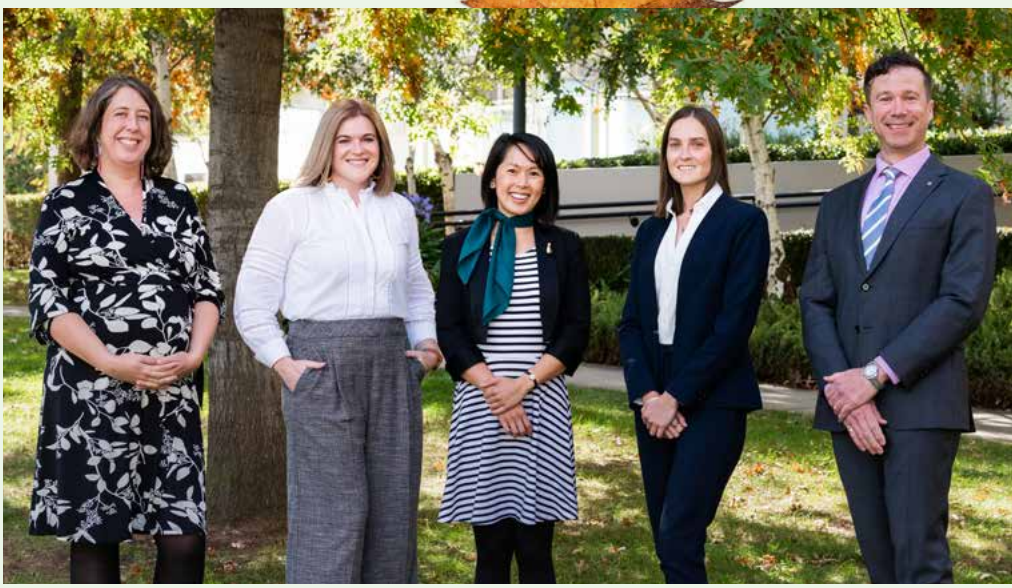
Meet the team committed to assisting Australian agriculture for CropLife

It has been half a century since world renowned agronomist and plant breeder Norman Borlaug was awarded the Nobel Prize for his contributions to global food security. Since then, science-based research and development, and the innovations that stemmed from it, have enabled farming to continue the Green Revolution that Dr. Borlaug started.

Agriculture is moving beyond just improving food security to underpinning our ability globally to achieve the UN Sustainable Development Goals. A new generation of farmers, environmentalists and policy makers will help shape how agriculture intersects with not just climate change, biodiversity and livelihoods, but also social rights, including how agriculture can improve equity in the developing world.

As the national peak industry organisation for the plant science sector in Australia, CropLife represents the developers of agricultural chemicals and biotechnology innovations that are key to the nation's cropping productivity, profitability and sustainability. The team, based in Canberra, seeks to achieve a strategic regulatory environment that provides the plant science industry the freedom to responsibly operate, grow and enhance its ability to support Australia's farmers and environmental land managers through industry leadership and professional advocacy.

Climate change has been identified as one of the biggest threats facing Australian agriculture. Dr Anne-Sophie Dielen, CropLife's Director of Crop Biotechnology Policy reflects on this, "Changes in weather patterns and the increased number of extreme weather events have had and will continue to have a massive impact. Australian farmers are very resilient and know how to adapt to our harsh environment but these skills by themselves won't be enough to address the challenges we are up against.



(L-R) Dr Anne-Sophie Dielen, Katherine Delbridge, Dr Jana Phan, Lucy Darragh, Gregory Sekulic

"Crop improvement and biotechnology will play a crucial r ole to ensure we remain a food secure nation," she said.

Director of Agricultural Chemical Policy, Gregory Sekulic, is new to Australian agriculture after a decade working as an agronomy specialist at the Canola Council of Canada. He noted some of the underpinnings of agricultural sustainability are soil and water health, and conservation – a changing climate challenges all of these.

It's not all bad news though. In facing these challenges there is great hope in science and innovation. From his international perspective Mr Sekulic sees Australia as an agricultural leader.

"From the pioneering use of zero-tillage in conservation agriculture, to proactively managing pesticide resistance through classifications, to the early adoption of genetic tools in plant breeding and crop production, I'm excited to join the Australian ag sector and contribute to an even safer, more productive and sustainable cropping industry."

Dr Jana Phan leads CropLife's efforts in stewardship and sustainability and acknowledges how important the development and adoption of new technologies will be. "Australian agriculture is undergoing a transformation to 'Agriculture 4.0.' The plant science industry will be at the forefront as we strive to be able to increase the quantity and continually improve the quality with less.

"New technologies are coming onto the market almost daily. We're seeing advances in molecular and synthetic biology, soil science, robotics and engineering, and data science – just to name a few. All of these will be beneficial to Australian ag," said Dr Phan.

"We're already seeing technology being embraced by farmers," says Director of Corporate Affairs, Katherine Delbridge. "You only need to visit a farm to see just how much adoption of innovation is taking place. This planting season is the first time South Australian growers will be able to choose to grow GM crops and farmers and agronomists are getting accredited to use these biotechnology traits in spades. It's a really exciting time for our industry."

Dr Dielen agrees and can't wait to see what the next 10 years will bring in terms of new techniques and improved plant varieties. "Imagine what a difference it would make for farmers to be able to quickly adapt to changes in circumstances, during a growing season."

"We need to celebrate and promote the scientific advances in agriculture. We're talking about pesticides that contribute to food safety and security, and GM and gene-edited crops that could combat environmental stresses and deliver nutritional gains for people in developing nations. These are important, life-sustaining advances that need the attention and support of our Parliamentarians," said Ms Delbridge.

Lucy Darragh has recently taken on the role of Manager of Crop Biotechnology Policy. She's joined CropLife from a national grower organisation allowing her many insights into the pressure these challenges put on farmers.

"The importance of policy and regulation for agricultural development can't be understated. We need to make sure Australia keeps pace with the rest of world so that our farmers continue to get the best access to technology and innovation.

"CropLife is committed to working with the broader agricultural sector, science community, governments and policy makers so everyone better understands agricultural practices, processes and associated impacts. When people are left out of shaping the solutions to the problems they face, the solutions fail.

"I'm passionate about fostering a sustainable world and finding innovative solutions to real-world problems, policy and grassroots advocacy is an important part of this," said Ms Darragh.

Dr Phan is just as committed, recognising that agriculture is a melting pot for the key issues that drive her. "Agriculture isn't just about the work that leads to us being fed and clothed. It's got a role to play in mitigating climate change and a role to play in nutritional and health benefits for the world. I take my part in that role seriously."

Agsafe goes online to help industry professional development

Croplife Australia's stewardship programs organisation, Agsafe, is now providing plant science companies with updated online training through the AgBytes platform. AgBytes are short training videos which provide Agsafe members with a cost effective and time saving pathway to keep employees up-to-date with their agchem industry professional development.

Releasing four AgBytes each year, the online modules range of topics include 'Chemical Product Stewardship' through to 'Incompatible Chemicals and Segregation' as well as 'Hazards, Risks and Controls' and are developed in consultation with Agsafe trainers and key corporate members. The continued rollout of new modules ensures training remains relevant while providing Agsafe with the ability to create new training modules which reflect recent changes in the industry.

Agsafe can also produce training that addresses concerns or topics that have been identified by members through the Industry Reference Group.

Agsafe identified 'time away from their role' as one of the main barriers to effective continued professional development for employees of Agsafe member companies. While Agsafe's flagship training continues with the face-to-face (and via webinar) Agricultural Chemical Supplier course, there was a growing need for more flexible training options, particularly for those who had previously completed the flagship training.

Agsafe

Find out more at agsafe.org.au/training/agbytes

CropLife members' news and events

Syngenta Australia and Landcare Australia have announced a two-year partnership to create biodiverse habitats for endemic species, including pollinators, and restore and promote native ecology on a selected agricultural site in Australia. An online best management practice toolkit will also be developed to provide farmers with up-to-date, high-quality information on how to improve on-farm biodiversity across Australia.

Image: Dr Shane Norrish, Landcare Australia CEO and Mr Paul Luxton, Syngenta Australia Managing Director.

syngenta.com.au

Ever wondered what goes into making sure Nufarm continues producing 2,4-D products in Australia safely, sustainably and reliably? A proactive maintenance shutdown of the 2,4-D manufacturing plant in Laverton is underway. It will take four weeks, 20 vessel inspections, more than 600 individual work order tasks and involves an additional 120 contractors on site!

Image: Commercial General Manager Australia, Peter O'Keeffe, and Regional General Manager, APAC, Brett Sutherland, get a progress update from Site Manager, Matthew West, and Lead Mechanical Planner, James Grima.

nufarm.com/au

The Crop Science division of Bayer has launched a new digital farming business committed to enabling farmers to work smarter, by combining their expertise and knowledge of the land with modern, digitally-enabled tools.

"As the world's population grows and factors such as urbanisation, climate change and soil degradation limit the amount of broadacre farmland, agricultural productivity will need to continue its rise to safeguard our food supply in the long term," said Managing Director, Joerg Ellmanns.

bayer.com.au

For the third consecutive year, BASF was pleased to support the National Farmers' Federation's 2021 Diversity in Agriculture Leadership Program. Through mentoring and networking, the program supports aspiring female leaders with a passion for agriculture develop into key-decision makers within the industry.

basf.com/au

UPL Australia has launched a podcast series to inspire and provide new ways of dealing with the challenges faced by Australian agriculture.

Image: Episode 4 features comedian Anthony 'Lehmo' Lehmann with episode 3 chatting to 'BrowsUp' consultant Neville Brady.

upl-ltd.com

Nutrien Ag Solutions will have its latest recruits join their IT Graduate Program, recognising the changing skillsets required by the agriculture industry. Nutrien's investment ensures its own IT systems and tools make it easier and more convenient for farmers to access advice, products and services, and ultimately contribute to ag tech innovations solving problems farmers face.

nutrienagsolutions.com.au

Elders has boosted its investment in the health and wellbeing of rural and regional communities with a three-year extension of its major sponsorship of the Royal Flying Doctor Service Central Operations, serving South Australia and the Northern Territory. Elders will make another contribution direct to the program for the perennial upgrade of its fleet of flying intensive care units.

elders.com.au

Corteva Agriscience proudly sponsored the Active Farmers 'Run for Resilience' 10km course at Lake Centenary, Temora. Challenging, fun and family-friendly, the 'Run for Resilience' is designed to foster healthy, happy and resilient rural communities.

corteva.com.au

FMC and rural retail stores have joined forces to donate much needed funds to the Queensland Royal Flying Doctor Service to aid rural communities in Queensland through the sale of selected products.

fmccrop.com.au

ADAMA

ADAMA Australia continues its strong stewardship focus through its ReefAware app, a unique tool which helps sugarcane growers and agronomists maximise herbicide efficacy whilst minimising run-off and its potential impact on the environment. ReefAware assesses the suitability and timing of herbicide applications by taking recent, current and short-term forecast weather conditions into account, along with site soil type and moisture, topography and proximity to water courses. It supports growers to ensure the essential water they use does not damage the reef.

adama.com/australia

BeeConnected™

The future of sustainable and productive agriculture to ensure global food security will require the continued judicious use of crop protection products while protecting pollinators, like honey bees. This highlights how crucial it is that the honey bee and plant science industries and the broader farming sector approach this challenge in a cooperative and coordinated partnership.

Pollination is a critical part of farming, so too is the use of crop protection products – with as much as half of the world's food supply threatened by destructive pests, invasive weeds and fungal diseases. Real solutions, based on science, that protect pollinators while still enabling modern farming practices must be embraced.

Australian beekeepers and farmers will now be even better equipped to protect our precious pollinators after the launch of an updated and improved BeeConnected app, developed by CropLife Australia in partnership with the Australian Honey Bee Industry Council.

BeeConnected is a nation-wide, user-driven smart-phone app that enables collaboration between beekeepers, farmers and spray contractors. The app allows farmers to easily log the location of their properties through a Google Maps-based platform with GPS capability. Beekeepers can use the same functions to log the present or future locations of their beehives. When a beehive is logged nearby a farmer's property, both users are sent automated notifications and can chat further about their activities via a secure internal messaging service.

BeeConnected can be downloaded from Google Play and the App Store.

CropLife Australia is the national peak industry organisation representing the plant science sector in Australia.

CropLife's members are the world-leading innovators, developers, manufacturers and formulators of crop protection and crop biotechnology products.

The plant science industry, which enables more than $20 billion a year of Australian agricultural production, provides products to protect crops against pests, weeds and diseases, as well as developing crop biotechnologies key to the nation's agricultural productivity, profitability and sustainability. CropLife is part of the plant science industry's 91 country international federation.

CropLife represents the best of the Australian plant science industry

Nufarm

BAYER

syngenta

ADAMA

Nutrien Ag Solutions

FMC

CORTEVA agriscience

Elders

BASF We create chemistry

UPL OpenAg

SIPCAM Innovation Not Imitation

SUMITOMO CHEMICAL

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CropLife Australia