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**Strong weed
control helps yields,**
*reduces seedset
in a tough season*

**Profitable chickpea
crops require**
attention to detail

**Bayer's
Big Fish Challenge**
*is helping tackle
a big issue*

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Post-sowing edition 2018



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Fulfilling the demand for quality, nutritious food for all depends on visionary thinking, courage and creativity. At Bayer, our spirit of innovation and curiosity means we are always looking to develop more advanced solutions to meet these future challenges.

On and off the farm, we work closely with our customers, our business and research partners and the wider community to improve the security of our food and fibre supplies and our overall quality of life. This great tradition is also our commitment to the future – entirely in line with our mission: Science For A Better Life.

We have been investing in Australian agriculture for almost 100 years, supplying leading brands backed by expert advice in the areas of seeds and plant biotechnology, crop protection and non-agricultural pest control. For every \$10 spent on our products, more than \$1 goes towards creating even better products for our customers.

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Cover image:
Elders Merredin Agronomist Cam Smith with Mukinbudin grower Tim Squire.

Welcome

to an all-new issue of cultivate



Growers around Australia are well versed in the threat of herbicide-resistant weeds and the major challenge they present to the productivity of broadacre cropping in this country and around the world. However growers are now also becoming increasingly concerned with fungicide resistance which is why we've made this a key focus in our latest edition of cultivate.

We were pleased to be able to raise awareness and help answer some of the questions around fungicide resistance recently with our special 'Let's Talk Innovation' Roadshow hosted by Bayer. These events across Australia featured global fungicide resistance experts and were a unique opportunity for industry advisors and agronomists to come together. Importantly, the events enabled the sharing of international and local knowledge, with the aim of giving farmers the tools to implement successful resistance management strategies and prolong the life of all fungicide products.

It's exciting that two new products are coming to the fore in this space – Aviator® Xpro® and EverGol® Energy. They are set to not only take on-farm disease control to new highs, but they will be a great fit within effective resistance management strategies into the future. Good results with Aviator Xpro are revealed in this edition surrounding its use in chickpeas in South Australia and in a barley demonstration in Western Australia.

It is also good to hear how Bayer's post-emergent herbicide, Velocity®, is helping growers in more marginal areas to get control of wild radish and other broadleaf weeds. Another highlight in this issue is our insight into how WA's South Coast cropping industry is going to great lengths to achieve 10 t/ha yields with long season winter wheats.

The team at Bayer remains committed to strongly supporting farmers and the wider industry throughout the year.

Tobias Marchand,
Managing Director

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After a challenging start to the season in the eastern wheatbelt last year, many growers had to up the ante in weed control to help maximise yields.

This was certainly the case for Mukinbudin farmer Tim Squire, who farms with his wife Jill, brother Dudley and sister-in-law Janine. Dudley and Janine's son, Calvin, also works on the property.

The Squire family farms more than 9,000 hectares (7,000 ha arable), cropping 5,500 ha and running 1,000 crossbred sheep.

Last season's cropping program comprised 3,600 ha of wheat and 1,000 ha of barley, with the remainder being canola and pulses.

According to Tim, effective summer weed control is vital, and they do their best to stay ahead through a summer spraying program, fallow and running livestock.

"We also grow pulses as a rotation crop to help us keep on top of weeds," Tim said.

"Over the summer, we'll spray a standard brew including Roundup® and 2,4-D Ester, but we have been finding that 2,4-D Ester just isn't doing the job for radish anymore."

Referred to as "Wialki orchids" by the local Mukinbudin Elders representative, wild radish is one of the Squire's biggest weed burdens.

The Squires pre-emergent herbicide regime includes trifluralin and Sakura® for effective control of annual ryegrass.

They began using the post-emergent herbicide, Velocity®, about three years ago for wild radish control after it was recommended by their agronomist.

"We're finding Velocity is the strongest option we've got against radish now," Tim said.

"We try and get in to get a good post-emergent hit when the crop is at that three to five leaf stage.

"Velocity is a bit softer on the crop than some of the other options available and there's no leaf burn."

Velocity, from Bayer is based on the active ingredient pyrasulfotole and includes bromoxynil and Bayer's crop safener, mefenpyr-diethyl.

It provides highly effective control of a wide range of broadleaf weeds including wild radish, bifora, wireweed, bindweed, bedstraw, capeweed and doublegee.

The high level of crop safety provided by Velocity means it can be applied to a young crop without harm, but also does not slow the growth of the crop or produce a yield drag effect that can occur with some other products.

"Velocity hits a range of weeds well – for us, it gets the job done," Tim said.

For Elders Merredin Agronomist Cam Smith, Tim's sentiment is not an isolated one. He heard similar reactions after recommending Velocity to other growers near Mukinbudin and Southern Cross last season.

"Last year was a challenging one in terms of crop timing and weed control timing, because we had a very staggered germination of crop and weeds," Cam said.

"So we introduced Velocity, mainly as a radish control, but also for other broadleaf weeds."

Cam said crops were at mid-tillering stage when they went in with a mix of Velocity and LVE MCPA, with excellent results achieved.

He said, typically, Velocity would not have featured in these growers' programs previously, but with the results they had seen last year, it would likely be a product they use again.

“Growers were really satisfied with the results and you could see the comparison with paddocks where Velocity was used and where it wasn't.”

"It was worthwhile for them in terms of the investment. They have helped reduce seedset and it's given them confidence to use those products again in the future, where required.

"Velocity is a really good tool to have in the toolbox for growers out here.

"Reducing seedset is so important with wild radish, among other weeds we can get in the paddock, so we've got to keep on top of it as much as we can."

Strong weed control helps yields,

*reduces seedset
in a tough season*

Left:
Elders Merredin Agronomist Cam Smith with Mukinbudin grower Tim Squire, who was able to control wild radish this season using the post-emergent herbicide, Velocity.

Profitable chickpea crops require attention to detail

Chickpeas are emerging as a profitable pulse crop throughout South Australia's Mid North, but a local agronomist in the region has cautioned that successful production by growers requires attention to detail and a sound fungicide strategy.

Andrew Parkinson is the Agronomist and Branch Manager at Landmark Riverton, which supports a region from just north of Gawler, out toward Mallala and Balaklava up, then up towards Auburn and Manoora, and down to Marrabel. Average annual rainfall in the region varies from 350 to 540 mm.

Andrew is supported by Bronwyn Palmer and Gary Fuss in merchandise and a further four staff at the branch, including in livestock, real estate and property management.

He said crop rotations in the region for some had moved towards a pulse crop, followed by canola and then two years of cereal crops, largely to tackle issues with annual ryegrass control.

Chickpeas have started to become favoured due to poorer prices and highly variable yields with faba bean and lentil crops, as well as other pulses such as field peas. Lentils can be a challenge to grow due to waterlogging issues on some soils.

Andrew said Genesis 090 and PBA Monarch were the current popular varieties and growers should try to select paddocks with low ryegrass pressure, good moisture-holding capacity; inoculate seed with rhizobia bacteria for successful nodulation and maximum yield potential; and apply a fungicidal seed treatment.

He said the very poor resistance of chickpeas to ascochyta blight was one of the greatest challenges in growing this crop and significant applications of chlorothalonil and, more recently, Aviator® Xpro® fungicide had been applied.

"A sound fungicide strategy can include as many as five to seven sprays depending on rainfall and the conditions," Andrew said.

"I spoke with a grower recently who said in 2015 he put two sprays on his chickpea crops and probably didn't need one. In 2016 it was a wet season and he did seven applications and never really felt that he had the disease under control."

He said last year they had excellent subsoil moisture leading into the season, a late April break, very dry June and good July, August and early September, before it became drier.

"Ascochyta blight infection came in quite strongly from mid to late August. We were finding it readily in the canopy. Growers applied four to five fungicide applications, including one that was Aviator Xpro, and this strategy, combined with fine weather, cleaned up the infection."

"Growers had some hotspots of disease develop where spray coverage had not been adequate or the timing (of applications) not quite right, in particular where the first application was a bit late."

"Aviator Xpro appeared to do a really good job where disease had started to develop. We were also fortunate, however, that the weather dried up, which I think definitely helped as well."

Aviator Xpro, from Bayer, contains bixafen, a new member of the Group 7 (SDHI) fungicides, which offers a new mode of action for resistance management, as well as the proven performance of prothioconazole. In addition to ascochyta blight in chickpeas, it is also registered for blackleg and sclerotinia control in canola, while additional registrations across cereals (wheat and barley) and pulses (faba beans, field peas and lentils), including aerial application, have since been added to the label for the 2018 season.

Above:
Bayer Commercial Sales Representative Graham Hatcher and Landmark Riverton Agronomist and Branch Manager Andrew Parkinson check the quality of a 20-hectare seed production crop of the Genesis 090 chickpea variety near Saddleworth. The crop had received three applications of chlorothalonil and one application of Aviator Xpro.

Xpro considering its time of application, even though its grazing withholding period was five weeks. Whereas the use of chlorothalonil fungicide, depending on the product supplier, varies from zero grazing to 14 days grazing withholding, plus an export slaughter interval of 63 days for stock grazing the stubbles.

"Bayer advises applying Aviator Xpro only twice as part of a preventative spray program including other fungicides, with a 28-day interval required between the two applications."

"Depending on the crop stage, disease severity and the conditions at the time, I will definitely be recommending Aviator Xpro," Andrew said.

"There could be a couple of chlorothalonil applications before Aviator Xpro depending on the season, then we'll look at the pre-canopy closure timing with Aviator Xpro. I expect that Aviator Xpro applications will be used mid to late in the season, to help extend the fungicide activity."

He encouraged growers to use high water rates and a medium droplet spectrum to help achieve maximum spray area coverage, which is important with any fungicide application.

Meanwhile, Andrew said he also expected Aviator Xpro would have a good fit for management of foliar disease in canola crops through the region, predominantly for sclerotinia.

Aviator Xpro also offers good compatibility and its patented LeafShield™ formulation system enhances its activity against diseases. Its short rain-fast period, estimated at around 30 minutes to one hour, is particularly beneficial for chickpea growers spraying ahead of rainfall events.

Andrew said it was an advantage to have a new mode of action to assist chemical rotation against ascochyta blight and resistance management, while the LeafShield technology would be particularly valuable for applications prior to rainfall events.

He said there were also no real grazing concerns following the use of Aviator

WA's South Coast targets 10 t/ha long season winter wheat crops

Western Australia's South Coast high rainfall cropping industry is continuing to explore opportunities to capitalise on early season potential by growing long season winter wheats.



Left:
Bayer WA Business Development Manager Jeff Lander pictured late last year inspecting a Manning long season winter wheat crop near Avoca in Tasmania.



Right:
Nicky Tesoriero, Agronomy Focus, Bayer Commercial Sales Representative Graham Nicol and WA Business Development Manager Jeff Lander look over a triticale crop near Deloraine, Tasmania.

With yields reaching up to 8 t/ha and aims to achieve 10 t/ha, the project has resulted in a number of industry members heading to Tasmania and more recently to New Zealand, the latter where yields have notched up to 16.79 t/ha and, together with the UK, there are plans to hit 20 t/ha by 2020.

Agronomy Focus Director Quenten Knight, who is based in Esperance, is one of the key drivers of the project, together with trial work being undertaken by grower groups including South East Premium Wheat Growers Association and Stirlings to Coast Farmers (SCF), as well as Cooperative Bulk Handling.

"The work is running to extend the message to growers that with early seeding opportunities, there is potential to grow hyper yielding winter wheat crops," Quenten said.

He said summer rainfall in the region often provided for late March-early April sowing opportunities.

"This is a bit early for canola, because you can still get warm weather and staggered germinations, but with wheat, you can sow it deep onto moisture and get good establishment."

Quenten said under early warm conditions, traditional spring wheats also can quickly enter their reproductive stage, whereas long season winter wheats have a vernalisation requirement before becoming reproductive.

"You want to sow a long season winter wheat with a weaker fertilisation gene and have it sit there before maturing and filling grain at the same time as spring wheats," he said.

"We have been conducting trials for a number of years, but the limitation has been having the right genetic material. A lot of the winter wheats have been too long (to maturity) at this stage.

"A lot of the varieties also have been only feed quality wheats, although these tend to yield more, so what you lose on grain quality and price, you pick up in yield and overall return."

Late last year, Quenten, together with Bayer WA Business Development Manager Jeff Lander and other industry members, attended Tasmania's second Hyper Yielding Cereal Project Field Day held at its Hagley trial site near Launceston.

Funded by GRDC and coordinated by the Foundation for Arable Research (FAR), the project aims to boost the State's production of high quality feed grain cereals, thereby reducing the reliance on supplies from the mainland for its dairy industry and other livestock users.

Despite a more favourable climate and greater yield potential, the average feed wheat yield in Tasmania is only around 4.5 t/ha, however the research has

shown yields in excess of 16 t/ha and commercial yields of 12-14 t/ha are possible.

Quenten said in Tasmania they looked at long season winter wheat varieties and the full agronomic package required for their production, including aspects such as row spacing; plant density and therefore seeding rate; the use of plant growth regulators due to strong vegetative growth that can cause lodging; and employing more extensive fungicide programs.

The visit to New Zealand earlier this year, funded by GRDC, also highlighted the need to adopt more robust and regular fungicide applications.

"In both New Zealand and 'Tassie', they apply up to four fungicide applications," Quenten said.

"By doing this, they believe it has contributed to an extra 20-40% yield.

"Another factor they have looked at closely is getting applications right in line with critical growth stages.

"At this stage (on the South Coast), we have just done a fungicide application at flag leaf and maybe two applications, whereas we could be looking at applications at flag-2, flag-1, flag and then full ear emergence to protect the critical leaves that drive yield."

Jeff Lander, who is now supporting the wider WA industry in his Business Development Manager role with Bayer, said in Tasmania and New Zealand, the fungicide strategy followed was all about ensuring green leaf retention to help maximise yield potential.

Jeff said the visit to Tasmania also provided the opportunity to meet with FAR Managing Director Nick Poole and New Zealand world wheat record holder Eric Watson, who was paid a further visit by Quenten and other industry members during their New Zealand trip earlier this year.

The tours also highlighted that to achieve high yields, it was vital to select cultivars with the correct phenology for the sowing date adopted.

Quenten said the long season winter wheat variety, Longsword, had been trialled on the South Coast over several seasons and additional varieties potentially suiting the environment would be involved in plot trials and paddock demonstrations again this season. There are also a number of commercial plantings in the region, with one grower having sown 700 ha to a long season winter wheat from April 7th.

Quenten said the local project would also continue to refine the whole agronomic package for growing long season winter wheats in the region.

Bayer's Big Fish Challenge

is helping tackle a big issue

From the Reel Screammers of Katanning to the Delta Hombres of Wagga and the Codfathers of Koolunga, teams of rural stores and growers across the country have enthusiastically embraced the Big Fish Challenge in support of the mental wellbeing of men in agriculture.

Bayer's AgSpirit Big Fish Challenge has fired the competitive spirit in over 80 fishing-crazy teams around the country as they strive to be the best state-based rural fishing team in this year-long, three-event challenge. But while the Big Fish Challenge is a friendly fishing competition for rural stores and growers nationwide – with 30 prizes on offer – partnering with The Fly Program means that it will also help tackle another big issue: the mental wellbeing of men in agriculture.

Ben Thompson, National Key Account Manager at Bayer said: "Many Bayer agents have been touched by suicide in their communities. We wanted to show our support and it just seemed too distant to write a charity cheque for such an important issue. Not surprisingly, our agents jumped at the chance to catch fish whilst doing their bit for men's mental wellbeing."

Run under the aegis of Bayer's AgSpirit charity program, the Big Fish Challenge is co-ordinated through the website www.agspirit.com.au. Teams of up to 6 people register on Bayer Crop Centre and are sent an AgMat (the competition's version of a fishing Brag Mat) to measure and photograph the fish they catch. These photos are then uploaded to the website to determine the prizes and the amounts donated to charity. The eligible fish types –

from Barramundi to Bass, Carp to Trout – have been carefully chosen to ensure that each team has an even chance of success. The Big Fish Challenge 2018 is donating a dollar amount for every centimetre of the largest fish caught (per type, per team) and has committed a minimum of \$20,000 to The Fly Program charity, with the winning teams all having an opportunity to take part in a hands-on Fly Program experience.

The Fly Program, a not-for-profit organisation, seeks to raise awareness and combat the impacts of depression, post-traumatic stress disorder and suicide in the Australian adult male community through a unique program built around four key components: Explore, Cast, Discover and Recover.

Whether it's a guided fly fishing day in the streams and creeks of a National Park or mountain biking across the rugged terrain of an epic alpine wilderness, The Fly Program uses participation in the natural world as a reprieve from the day-to-day challenges. The aim is to create life changing experiences for Australian men by giving them some time to recharge and reset.

Matt Tripet, CEO of The Fly Program said: "We're incredibly proud to partner with Bayer for the Big Fish Challenge.

It ties in perfectly with the design of The Fly Program, which is about enhancing men's well-being by bringing them together in the great outdoors as active participants. Farmers are a tough breed but there are too many suicides in our rural communities. The Big Fish Challenge is a great way for Aussie blokes to simply get together and throw in a line in some inspirational locations."

As the Reel Screammers and the Delta Hombres and the Codfathers head out to the rivers and streams to cast a line, they, along with everyone taking part in Bayer's Big Fish Challenge, provide yet another uplifting example of the generosity of spirit and solidarity of support for Australian men working in agriculture.

Ben Thompson says "As an avid fisherman myself, I understand how a few days stalking fish gets the primal juices flowing and at its core that's what The Fly Program is all about – helping people feel more grounded and alive. So, if you know someone participating, it's a great excuse to take them out to your secret spot... for a good cause."

The Bayer Big Fish Challenge is still open for entries. If you're interested in competing, talk to your local store, and if they're not already taking part, encourage them to enter a team.



**BAYER BIG FISH
CHALLENGE 2018**

agspirit
for Charity

Above:
Bayer Key Account Manager Ben Thompson with Matt Tripet,
founder of Australian registered charity 'The Fly Program'.



Landmark Jolpac

kicking big goals at Bordertown

Newly acquired Landmark South Australian rural retailer, Landmark Jolpac at Bordertown, formerly Jolpac Rural Supplies, has come a long way from its early days as a farm chemical agent, but a strong relationship with Bayer remains a mainstay for the business.

Established in 1982 by the late John Jolly, John's son, Peter, has been one of the drivers of the business in recent years, alongside Jamie Weatherald.

The business moved into new premises at Bordertown early in the new century and Graham Merrett, Ethan O'Sullivan and Ben Perry are also part of the team.

Peter said the most distinguishing feature of farming in the area was access to underground water, with an aquifer sitting about 75 metres below the surface. In addition to traditional broadacre crops and livestock, it has allowed good production from fodder crops like lucerne, as well as horticultural crops including potatoes, onions and wine grapes.

Peter said lucerne was grown widely for seed and hay production, with a lot of the hay sold to southern dairy farmers.

The region also receives around 400 mm average annual rainfall, although recent seasons have been significantly wetter.

Livestock production has increased in the area due to the improved commodity prices, edging the crop-to-stock ratio back towards the typical two-third to one-third respectively.

Peter said the range of cereal, oilseed, pulse and pasture crops grown included wheat, barley and oats, the latter boosted by a local milling oat plant, as well as canola, faba beans, lentils, chickpeas and clover pastures, including for seed production. The area sown to canola increases in better seasons, while faba bean sowings are determined by crop rotations and returns.

Peter said the region was one of the first where Group A-resistant annual ryegrass was detected, which he said wasn't helped by spraying Fusilade® several times a season in lucerne crops.

Broadleaf weeds were also becoming harder to control and crop diseases were dominant in the recent wetter seasons.

Peter expected managing diseases such as septoria and rusts in cereals would become a strong focus through the area, especially considering the penchant for consecutive years of cereal production in some paddocks.

Rhizoctonia root rot also continues to hinder production in some areas.

Peter said growers generally targeted yields of 5 t/ha for cereals, although yields of 7.5 t/ha have been achieved

in recent years, as well as 3-3.5 t/ha for faba beans and 2-2.5 t/ha for canola.

Bayer has been a keen supporter of the business through Commercial Sales Representative Craig Jackson, with various paddock demonstrations of Bayer products conducted with its grower customers.

Peter said with the various crops grown in the region, a wide range of Bayer products were used.

The pre-emergent herbicide Sakura® has been in high demand to help control annual ryegrass and he expected it to continue following the wetter conditions and high ryegrass populations in recent years.

Prosaro® fungicide has also been popular for a range of crop diseases, although with many new label claims, Aviator® Xpro® fungicide is also expected to attract attention this season.

Aviator Xpro was demonstrated on over half of a targeted 3 t/ha, high input canola crop on a local property last year. The windrow operator in the crop said it was the best he had ever windrowed.

Aviator Xpro contains bixafen, a new member of the Group 7 (SDHI) fungicides, which offers a new mode of action for resistance management, as well as the proven performance of prothioconazole. In addition to its use in canola for blackleg and sclerotinia

control, and in chickpeas for ascochyta blight, registrations for Aviator Xpro across cereals (wheat and barley) and pulses (faba beans, field peas and lentils), including aerial application, have since been added to the label for the 2018 season.

Aviator Xpro also offers good compatibility and its patented LeafShield™ formulation system enhances its activity against diseases. Its short rain-fast period, estimated at around 30 minutes to one hour, is particularly beneficial for growers spraying ahead of rainfall events.

Peter said controlled traffic farming in the region was also expanding and there had been a constant focus on earlier crop sowing due to it proving highly beneficial for many growers.

Bayer facility tour

Meanwhile, as part of its strong relationship with Bayer and in conjunction with Craig Jackson, last year the business took car loads of local growers over to the company's research site near Horsham in Victoria, to gain an appreciation of the company's extensive research and development.

Peter said it was understandable that growers had to make economical decisions on their properties about product usage, but the tour provided an insight into the depth of research and development into products.

It also updated tour participants about the \$45 m partnership between GRDC and Bayer and how this could help deliver new herbicide modes of action to the industry as early as possible.

Jamie said it was the most impressive local facility he had seen in his 30 years in the industry.

"The technology is unbelievable – it opened up a lot of eyes," he said.

"They had active ingredients there that they were comparing and the growers were very impressed.

"It instils great confidence for us and growers in anything that Bayer releases, since we have seen the technology and effort that goes into it."

Local grower Daniel Feder, whose family farms at Bordertown, Wolseley and Serviceton, said it was fantastic to have an exchange with the team at the Horsham facility and to explain the local environment and what was needed.

The Feders grow a range of crops including wheat, barley, canola, lentils, faba beans, oats, vetch and clover, the latter including some for seed production. They also produce trade lambs.

"It was good to see how much goes into research and development – it is quite painstaking to get it right," Daniel said.



Above: Bayer Commercial Sales Representative Craig Jackson (second from left) pictured late last year with some of the Jolpac team, including Jamie Weatherald, Graham Merrett, Peter Jolly and Ethan O'Sullivan.

In seasons where he receives above average rainfall on his southern Riverina property,

Allan Clarke knows he has to keep a close eye on diseases in his crops. »

Wet year provides **stern challenge for fungicides**



Mr Clarke's 320-hectare property 'Delby Park', at Tocumwal in NSW, consists of sand through to heavy clays, with the variability allowing for a broad cropping rotation.

"Our main summer crop is lucerne hay and we grow rice when water's available, while our winter crops are oaten hay for export, wheat and canola," he explains.

The lucerne hay is particularly valuable as it can be cut early to free up ground for double-cropping into soybeans or rice when water is available for the coming summer.

While he considers water availability to be his biggest challenge, along with building up soil organic matter, Mr Clarke says disease management is also critical.

He believes tighter rotations, with an increasing amount of canola, have growers on high alert for crop diseases.

"Sclerotinia seems to be creeping in a little bit more — we noticed a few years back in a paddock that had soybeans in it previously, and we had it quite bad in the same paddock again since then."

The very wet 2016 winter cropping season was a perfect example of a season in which Mr Clarke turned to Prosaro®420 SC Foliar Fungicide from Bayer to protect his canola from disease.

"It was a bulky crop that started flowering really early and with the wet season we were really worried about disease taking off, so we applied Prosaro early, at around 20 per cent flower.

"We then did a second application at 50 per cent flower just because it was so early and it was going to be flowering for a long time in wet conditions and that seemed to have controlled it quite well," he explains.

Mr Clarke also applied Prosaro to a smaller paddock next to the sclerotinia-infected crop, but with a slightly different approach.

"As that crop was quite thin it wasn't worth doing the whole area, so we just applied a protective boundary of Prosaro, which seemed to work quite well," he explains.

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Even before harvest, Mr Clarke says it was obvious the product had made a significant impact.

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Even before harvest, Mr Clarke says it was obvious the product had made a significant impact.

"The main crop had a lot of sclerotinia pressure in it, which had the potential to do a lot of damage but it didn't seem to have done too much at all.

"That year saw lot of petal drop and crops staying wet for long time, so probably ideal conditions for fungal disease, but Prosaro did a pretty good job of holding the disease up," he says.

Mr Clarke is planning to continue using Prosaro, which contains the active ingredients prothioconazole and tebuconazole, so he can keep canola in his rotation.

"It's too valuable of a crop to pull out and you don't have to lose a lot of crop to cover the cost of Prosaro - even though it's not a cheap product, I think it's been effective," he says.

Right:
Grower Allan Clarke at his property 'Delby Park' in Tocumwal NSW.



More than meets the eye in formulation game

Seeing a truckload of chemistry heading out the gate to 'fix a problem' still gives David Clark a buzz after 31 years. As Head of Product Supply for the Crop Science division in Australia, Mr Clark oversees a supply chain which includes two Bayer formulation plants in Australia; one in Perth, and one in Brisbane where he is based.



Just the fact Bayer has formulation plants in Australia is a point of interest – they are one of several R&D companies in the country to have such facilities, and there's a good reason why they've invested in this area explains Mr Clark.

"We want to be close to the market, we want to be flexible, and our two formulation plants enable us to make product as close as possible to market supply requirements as we can," he says.

"Our job is to take the active ingredient, blend it with other components to turn it into a useable and effective formulation, pack it and then put the product into our distribution centres. Based on the forecast from customers and the orders that come in, it will then get distributed through transport companies to customers.

"There's obviously a lot of demand volatility based on weather conditions in Australia which can change supply requirements, so to help us level things out regionally, we are part of a network of nine formulation sites Bayer has to service the Asia-Pacific Region."

While many may not stop to consider what goes into getting a product on-farm, it is an involved process, which starts with the formulations themselves being developed globally.

"The products go through a rigorous testing program and registration process, which if we're only looking from the active ingredient discovery to the formulation stage, could take somewhere around three years, while developing the active ingredient itself can take something like 8 to 10 years," Mr Clark says.

"It's a very long process to get to the point where our Australian formulation facilities are taking the active ingredient and formulating to the registered recipe, and then going through quality testing processes to make sure the product meets specification, before releasing the packaged product to customers."

It's critical, according to David Clark, that they follow the specific recipe at the formulation plant to ensure the quality of the end product and compliance with the conditions of the product registration.

"We need to make sure the product performs to the highest possible standard over the largest number of different scenarios faced by end users," he says.

"If the formulation isn't optimised it can have an impact on the efficacy of the product, so that's why it's important to develop a really robust formulation and then test it very widely before releasing it for farmer use."

The scope of the work just at the Brisbane formulation plant is impressive, manufacturing around 140 different formulations, and packing them off as nearly 350 different end-use products to supply Bayer's crop and environmental science businesses in Australia.

"We've got six different work centres in Brisbane, each of which focuses on a different product type, so we do suspension concentrates, emulsifiable concentrates, soluble liquids, and we pack granules," Mr Clark says.

"It's really important that we manage

any cross-contamination - for example, we have separate work centres for herbicides and non-herbicides, so there's minimal chance of any crossover."

Every product has a specification it must meet before leaving the site, a process which is underpinned by both a quality control facility and a quality assurance facility working to ISO 9001 and ISO 14000 standards.

"Our laboratory will take samples of every product, and we retain samples to test the product against the specification before it's released for distribution," Mr Clark explains. "We can track all products by batch number, by manufacturing date, and if we ever have an issue, we can trace back to find out what, if anything, went wrong from a formulation perspective."

It's clear that, having been in the formulation business for 31 years, David Clark has seen plenty of changes in the formulation industry, particularly around the technology delivering active ingredients to the market.

"There's been a pretty significant changeover in this industry, back from the very manual days and very big volumes of one active ingredient low-activity products, to today where the volumes are much smaller, and we might have one product with four different active ingredients in it to provide a complete solution," he says.

"The ways in which we're formulating probably haven't changed so much, but the technology that's packed within the formulation is the thing that's changed considerably.

“

What I still enjoy is seeing trucks rolling out the gate and you know there's a quality solution on the way to solve someone's problem, and as an innovation company, that's really what we're bringing to the table.

”



Above: David Clark,
Head of Product Supply

“Let’s Talk Innovation”

Australian farm consultants and advisors who recently attended Bayer’s Innovation Roadshow were given the opportunity to learn from two of the world’s leading fungicide resistance experts.

*Global fungicide
resistance experts*

tour Australia

Consisting of a series of events around Australia in February and March 2018, the “Lets Talk Innovation” Roadshow made stops in Wagga Wagga and Moree (NSW), Adelaide, Perth and Bendigo (Vic).



At each event there were both local staff, as well as experts from the Crop Science division headquarters in Monheim, Germany, presenting the latest fungicide technical information and best practice resistance management techniques.

Brand, Advertising and Campaign Manager for Bayer, Gareth Sheehan, says the Innovation Roadshow provides an important forum for exchange of information between Bayer and customers.

“The Innovation Roadshow was a great platform for us to share knowledge not only locally, but internationally as well, particularly on the important issue of fungicide resistance,” Mr Sheehan says.

“Bayer’s in a fortunate position to be able to facilitate the sharing of knowledge between industry to get the best results out of both our products, as well as best practice methods for prolonging the lifespan of active ingredients.”

“

Dr Mehl believes the Innovation Roadshow presented a valuable opportunity to address critical fungicide resistance questions from growers and advisers face-to-face.

”



Making the trip from Germany to share their knowledge on fungicide resistance at the Innovation Roadshow was Bayer Senior Scientist Dr Andreas Mehl (Wagga Wagga, Moree and Adelaide) and Head of Product and Project Support Dr Friedrich Kerz-Moehlendick (Perth and Bendigo).

Dr Mehl believes the Innovation Roadshow presented a valuable opportunity to address critical fungicide resistance questions from growers and advisers face-to-face.

“I have been really impressed with the feedback and culture of Australian growers and advisers,” he observed.

“They were really interested in the information we discussed and asked a lot of questions, which really ensures a good exchange of knowledge between all of us, resulting in a better understanding of resistance management and disease control in Australia.”

During the Innovation Roadshow, Dr Mehl emphasised that progress on resistance management is a key objective of both Bayer and the industry generally, to promote long-term sustainable use of all fungicide products.

“Over the last three decades, the industry has worked together through the CropLife International Fungicide Resistance Action Committee (FRAC) to align on use recommendations for individual fungicide groups, such as SDHI’s, and Bayer has led from the beginning in these discussions,” explains Dr Mehl, who represents Bayer on the FRAC.

“It is Bayer’s aim to communicate best resistance management strategies and use guidelines in all parts of the world, in particular in Australia, to ensure a long period of sustainable use of all fungicide products.”

At each Innovation Roadshow event, the international speakers were backed up by a range of local Bayer technical staff, who drilled down into technical aspects, including local trial results and product information.

Bayer’s Customer Advisory Manager, Rick Horbury, says the topics discussed at the Innovation Roadshow were selected based on feedback received from industry.

“We know there have been a lot of queries around fungicide resistance, and with two new products coming from Bayer into the market in 2017 and 2018, being Aviator® Xpro® and EverGol® Energy, respectively, it was important to address those issues,” he says.

“

We talked about Aviator Xpro a lot at the events, this product is a broad-spectrum fungicide with the active ingredients bixafen and prothioconazole.

”

“With Leafshield™ technology, Aviator Xpro shows excellent rainfastness and a formulation delivering excellent spreading and penetrant abilities for control of a range of key diseases. We think this product is going to produce an excellent return on investment for Australian growers.” Following the registration in 2017 of

Aviator Xpro for canola and chickpeas, the product has also been registered for use in wheat, barley and a number of pulses in 2018, along with approval for aerial application.

“EverGol Energy, a new seed treatment product from Bayer, was also discussed in depth. EverGol Energy is a combination of penflufen, metalaxyl and prothioconazole. It will supersede EverGol Prime, with a broader label to include diseases such as pythium and crown rot.

An application for registration of EverGol Energy has been made. At the time of publication this product is not registered.

“It was really great to take the time to explain how these products will not only elevate on-farm disease control to a new level, but also how they fit into the broader concepts of effective resistance management strategies our global colleagues discussed at the Let’s Talk Innovation Roadshow.”

It was this mix of local and global knowledge and expertise at each event which attendees found particularly valuable, as Mark Habner, an agronomist with Landmark Cummins (SA), found when he attended the Innovation Roadshow in Adelaide.

“I came along to hear a quality international speaker, as well as hear about new products that we could be using in our paddocks, because there’s always quality data and information that Bayer provides, and being able to get that quality information at a time that suits is really good,” Mr Habner says.

“I attended the GRDC Updates while in Adelaide too, and being able to come the day before to the Innovation Roadshow, so that it fits in with a busy time of year, is really important.

Mr Horbury agrees the response from industry was good, with all events well attended by agronomists, advisors and consultants right across Australia.

“**Having access to high quality information is really critical, and while not all companies can do that, Bayer do it particularly well.**”

“The attendees were really happy to have our international speakers sharing their knowledge on fungicide resistance, but also getting that local knowledge on Bayer’s products, so they can make recommendations to their growers,” he says.

“It is very important for Bayer to not only be bringing innovative chemistry to the market, but to also share both global and local knowledge with industry, and that’s why we hold the Innovation Roadshow.”



Left to right: Andreas Mehl, Angus Calder and Rick Horbury speaking at the Bayer Innovation Roadshow



Left: The Innovation Roadshow venue in Adelaide.



New cereal fungicide set to
improve disease
control, yields

A demonstration trial of a new cereal foliar fungicide has shown improved final grain yield compared with other standard treatments.

Canna grain grower, Darrel Beattie, always suspected he would run into disease problems in a paddock at a leased property near Three Springs, where Scope barley was being grown for the second consecutive year.

Upon discussions with his local Landmark agronomist and Bayer Commercial Sales Representative, Darrel agreed to trial the new Aviator Xpro fungicide over a 10-hectare area in the paddock, alongside the traditionally-used Amistar® Xtra and other fungicides.

He said the products were applied at label rates with 70 L/ha of water using 06 nozzles on a Case IH AIM Command spraying system set at 3.8 bar pressure.

Darrel said the disease control provided by the different fungicides was similar, although there appeared to be more disease lower in the canopy where Amistar Xtra was applied.

“The crop and disease levels looked the same visually, but there was a difference at harvest,” Darrel said.

“The paddock yielded just shy of 2 t/ha and it was about 200 kg/ha better where the Aviator (Xpro) was applied. It was about an 8-10% increase in yield.”

Aviator Xpro contains bixafen, a new member of the Group 7 (SDHI) fungicides, which offers a new mode of action for resistance management, as well as the proven performance of prothioconazole. In addition to blackleg and sclerotinia control in canola, as well as ascochyta blight in chickpeas, it has recently gained registration for use across cereals (wheat and barley) and pulses (faba beans, field peas and lentils), including aerial application.

Aviator Xpro also offers good compatibility and its patented LeafShield™ formulation system enhances its activity against diseases. Its short rain-fast period, estimated at around 30 minutes to one hour, is particularly valuable for applications prior to rainfall events.

The Beatties grow wheat, barley, canola and some lupins over 2,200 ha at their ‘Suncrest’ property near Canna plus the leased land at Three Springs, while they also run about 400 Merino ewes.

They previously ran an agricultural contracting business, ‘Undaminda Spraying’, operating three spray rigs and covering a region from the far northern wheatbelt down to Coorow. They have retained one of the sprayers, a Case IH 4430 Patriot with the AIM Command system.

“Darrel said the new registration of Aviator Xpro for use in cereal crops would add important new chemistry to the “chemical toolbox”.”

Darrel said the new registration of Aviator Xpro for use in cereal crops would add important new chemistry to the “chemical toolbox”.

He said they also encountered problems controlling powdery mildew disease and some existing fungicides did not provide good residual

control, so opening up the chemical use window to assist resistance management would be beneficial.

Anthony Smyth, Landmark Mingenew, said an estimated 5-6% swing to barley plantings in programs this season could result in more “barley-on-barley” paddocks and require growers to consider their disease management options.

He said net form net blotch and, to a lesser degree, powdery mildew were the primary diseases in barley crops throughout the region, while powdery mildew, yellow spot and septoria nodorum were prominent in wheat.

“Powdery mildew has become quite concerning and many growers have to spray for it every year,” Anthony said.

“Having a different mode of action to rotate with our existing chemistry will be good. We do it (chemical rotation) well with herbicides, but not so much with fungicides.

“We haven’t got resistance with fungicides, but it may come if we keep going over and over again with the same chemicals.”

Anthony said growers generally applied one to two fungicide sprays depending upon whether they were curative or preventative treatments.

He said having the option of Aviator Xpro as a curative spray with longer activity would be excellent.

Left:
Agronomist Anthony Smyth of Landmark Mingenew with grower Darrel Beattie discussing cereals foliar fungicide options near Three Springs, WA.

Precept takes control under *high pressure weed burden in NSW*

Leasing property with a high weed burden means Glenn Pugh, from Tomingley (NSW), has to carefully manage his chemical options.

To effectively manage the long-term cropping country, which is in a barley, wheat and lupin rotation, Mr Pugh particularly has to target wild radish, capeweed and wireweed.

"It's critical we control weeds, keeping both the fallow country clean and making sure paddocks are clean when we go to harvest, as weeds compete against the crops, reducing yield and grain quality," he says.

To help in the task, Mr Pugh introduced Precept® selective herbicide from Bayer in what turned out to be a very wet 2016 winter cropping season, in which 1,075 millimetres of rain fell, nearly double the farm average.

"It was exceptionally wet here, so we applied Precept with a helicopter and we got an excellent result, taking out wild radish, wireweed and a lot of the other broadleaf weeds, so I'm very happy with it."

The recommendation to use Precept came from Mr Pugh's agronomist, Matt Landsey from Delta Agribusiness in Dubbo.

"At the time, everything was stressed, waterlogged and it wasn't ideal conditions by all means for spraying but the helicopter got there on a nice bright sunny day and it did an amazing job," Mr Landsey explains.

"The main push behind the move to Precept is that with this being old farming country, the old Group B chemistry isn't as effective anymore.

"Precept has opened up a different avenue in terms of being able to hit the same weeds with a different herbicide mode of action and get better results, especially on bigger weeds that have gotten away a bit more, it really does work very well."

Mr Landsey says, importantly, that Precept fits well with Mr Pugh's rotation, with no underlying chemical residual activity to affect lupins or lucerne the season after a Precept application.

Mr Landsey also believes strongly in looking after the newer herbicide chemistry such as Precept, which offers a different mode of action (Group I and H) to traditional broadleaf products.

"You want these good products to hang around for as long as possible and Precept just shows that if you treat it right, it's got a lot of promise for years to come," he says.

"Some chemistries have come and gone very quickly, particularly for ryegrass, but Precept is one of those herbicides that if you use it right, it will do the job for you - it may cost a little bit extra, but you get the performance you pay for.

"In terms of Glenn's location, where the weeds can get a little bit away before you can get onto them, Precept has still got the legs on those bigger radish plants, it just fits in very well."

“

It was exceptionally wet here, so we applied Precept with a helicopter and we got an excellent result, taking out wild radish, wireweed and a lot of the other broadleaf weeds, so I'm very happy with it.

”

The importance of being able to potentially do single pass weed control can't be understated, as Mr Pugh's need for a helicopter in 2016 demonstrated.

"Precept partners very well with Topik®, allowing it to do a good job on black oats even though generally a broadleaf partner tends to reduce the efficacy of a grass partner," Mr Landsey commented.

The efficacy and flexibility of Precept has meant it will stay in Mr Pugh's chemical rotation for the coming seasons.

"We had such a good result with it in what was an exceptionally wet season — if it can work in a season like that, it can work in a normal year," he says.



Above: Glenn Pugh





Talk to our
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