

the link



FarmLink Member Newsletter Autumn 2023



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Welcome to the autumn edition of **The Link**. Following a late finish to the season we hope everyone has had the opportunity for some much-deserved rest before embarking on the year ahead. **2022 was a challenging but rewarding year for the FarmLink Team.**

With the continued support of our Partners and Collaborators we were able to deliver a broad suite of projects for our Members. We expanded our research & extension team, enhanced our communications platforms and acquired new equipment to ensure we can continue to meet the needs of our Members going forward. This includes the recent addition of new sheepyards and handling facilities at the TAIC, recognising the mixed farming nature of our geography and the need to invest in livestock RD&E.

In this edition of *The Link* we provide some articles across a range of topics – Crown Rot, N-Banking, Climate Services for Ag, Preseason learnings from the Improving Farming Systems project, a case study on managing risk with vetch in a rotation, the use of latest EID and handling technology at TAIC and much more.

As was the case in 2022, FarmLink will be running some 'Breakfast Wraps' before the end of March in Tallimba, Caragabal, Wallendbeen and the The Rock.

A range of partners will combine with the FarmLink Team to provide a locally-relevant round up of current projects, learnings and what's in the pipeline. We also hope to hear from you on future priorities. More details on the events will be out soon. We hope to see you at one of the events.

All the best,

Andrew



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FarmLink's Board inspect TAIC trial sites, cropping and grazing areas.



FarmLink staff demonstrate the new TAIC sheep management systems to the Board.



Frank McRae recently joined the FarmLink Board.



James Brady also joined the FarmLink Board in 2022.



The FarmLink Board recently participated in FarmLink's Annual Strategic Review (L-R) Frank McRae, Colin McCrone, James Brady, Jenny Thompson (Deputy Chair), Rob McColl (Chair), Ron Heinrich, Andrew Bulkeley (CEO). (Not present) John Stevenson, Mark Swift.

The FarmLink Board has for many years played a pivotal role in shaping the strategic direction of the organisation and enabling the team to deliver for our Members. As CEO I am delighted with the breadth of experience, passion for agriculture, honest insights and significant time commitment that our current Board provides to FarmLink. This was further reinforced through our FarmLink Strategic Review held in Temora on the 16th and 17th March. This is an annual event that includes the Board and Senior FarmLink staff.

The forum provides the opportunity to assess our performance, engage with the broader team, reflect on the feedback from our Members, review and renew our business strategy and agree the priorities and pathway for the 2-3 years ahead.

The event was highly productive. In summary, as we move through 2023-24 our priorities will include:

- ▶ 1. Expanding our portfolio of RD&E projects into the areas of pastures and livestock recognising the mixed farming character of our membership footprint
- ▶ 2. Leveraging the TAIC facilities for a broad range of trials and demonstrations to enhance the value to our Members

- ▶ 3. Continuing to strengthen our organisational capability through people development and process improvement
- ▶ 4. Targeted equipment investment to enhance efficiency in our operations

We invite Members to join us at the Annual General meeting on the 5th May 2023 if they wish to discuss further our strategic plan and priorities for the year ahead.

If you have a passion for agricultural innovation and would like to find out more about becoming a member of the FarmLink Board or our RD&E committee please contact Andrew Bulkeley on 0488 448 236.

Expression of interests sought for FarmLink projects

Drought Business Decision Project

The question I am most regularly asked regarding drought is when and how hard to go when making business decisions, as drought conditions build. Objective data is always key to making accurate decisions confidently.

As a result, I am seeking expressions of interest from livestock producers who are interested in an EID (electronic identification) demonstration trial, designed to increase the efficiency of decision making in relation to the onset of drought.

This trial will involve producers in the self-replacing merino and cattle sectors.

Ideally, trial participants will engage in demonstrations on farm, while being assisted in data collection and manipulation of traits directly related to profitability.

We are aiming to kick the project off in the next 12 months.

For more information, please contact Rob Martin (details below).



Cultural connection project (drought)

One of the processes going on at the Hub at the moment is thanks to the engagement of two First Nations Engagement Officers. All Hub staff have been given the opportunity to undertake Indigenous engagement. This is proving to be a fulfilling and thoroughly enjoyable process.

Another benefit coming from the opportunity to engage with our First Nations Engagement Officers is that it gives the Farming Systems Group Alliance membership base access to 60,000 years of handed down experience in 'reading the country' and land management.

As farming practitioners, we have traditionally looked for the 'one percenters' that add to our business via science and innovation.

By looking at the land through a different lens, producers have the opportunity to learn historical and environmental aspects to their land that they may not have considered.

It often comes as a surprise that First Nations knowledge played a part in the early development of many aspects of our lives such as location of many towns and cities and the path of major roads. The Hume freeway is probably the best-known example of a path utilized for thousands of years as an access and trading route (songline) being shown to early settlers and maintained as the 'best path' in modern society.

Through mutual respect and relationship building, an opportunity exists for beneficial, organically developed connections in a culturally safe space for all.

Please contact Rob Martin (details below) if interested in participating in either of these projects.



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SUSTAINABLE AGRICULTURE, LANDSCAPES AND COMMUNITIES



FarmLink Breakfast Wrap

TALLIMBA 20 MAR | CARAGABAL 21 MAR
WALLENDREEN 22 MAR | THE ROCK 23 MAR

N BANKING COULD HOLD THE KEY TO LONG-TERM PROFITABILITY

Prof James Hunt (UNIVERSITY OF MELBOURNE)

8-12:30

ALL WELCOME – FARMLINK MEMBERS AND NON-MEMBERS

FarmLink Update

Intercropping, Mixed species pastures, Digitising our sheep flock – James, Hayden and Ehlena

Using the Climate Services for Agriculture tool in your farm business Southern NSW Innovation Hub Update

Rob Martin – FarmLink SNSW Innovation Hub Knowledge Broker

Animal Health – Local Land Services Riverina

LLS District Veterinarians

Local Agronomist Update – '22 Season review

8AM START WITH BREAKFAST AND 12.30PM FINISH WITH LUNCH. REGISTRATIONS ESSENTIAL FOR CATERING PURPOSES.



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Vetch provides flexibility in this Riverina cropping system

GRASSROOTS AGRONOMY



Pasture mix – mid April growth prior to the 1st graze.

After battling with pulse profitability in the Riverina for some time, Warakirri Cropping's John Stevenson has found that vetch has a good fit in their farming system.

"We'd have loved to be able to emulate what our peers are doing in the Wimmera-Mallee with lentils, but due to our acidic soils, it just didn't happen," John says, "so faba beans have been our fallback. However, they're a challenge to market, they can have their ups and downs production-wise, and they're not generally that lucrative. They also have a really big clash with our main season canola and wheat planting times."

The ongoing issues with faba beans led John to examine some alternatives.

"We're running a four-year rotation: pulse-canola-wheat-barley," John says. "Both farms are now running a full strip and disc system – so disc seeding, stripper front harvest – and we just need a robust system that works. This led us down the path of thinking we might need to sacrifice some of our faba bean area to try vetch, or vetch mix pastures. And then we thought if we're going to grow vetch, why don't we value add? Rather than targeting the hay market, which can be very fickle, we decided to use it in combination with our grazing cereals to run stock."

The vetch is part of a pasture mix that also includes brassicas, radish, turnips and winter wheat. They usually put a grass

spray over the paddocks around late August to take the grasses out.

They only do trade lambs, so they bring them onto the vetch pastures through the season, contract as they go and then turn them off when they hit target weights.

John has tried grazing a straight vetch pasture before but was caught out by a frost that decimated the crop and left him with insufficient feed.

"There was a big learning in that not to be reliant just on vetch," he says. "We had lambing ewes on it that year, so it also taught us that bringing in lambing ewes is high risk for us on our scale."

The vetch is always sprayed out prior to seed set, rather than taking it through for hay.

"What we've observed with others taking vetch through to a hay crop is that it puts quite a bit of pressure on farm teams. It's intensive, it's expensive, and it's high risk," John says.

"If we're full contract hay production, our hectare costs of harvest are huge. And it only takes one rain event and you're baling compost really. You lose a lot of nutritional value. So we've introduced some flexibility into our farm in terms of

GRASSROOTS AGRONOMY



Harvesting wheat & barley with a stripper front to optimise stubble retention prior to the vetch grazing mix & subsequent double break with canola.

GRASSROOTS AGRONOMY



Vetch mix establishment into wheat stripper stubble, sown into marginal moisture with a disc seeder in March.

GRASSROOTS AGRONOMY



Winter feed on the vetch mix in August, ready for its 2nd grazing.

GRASSROOTS AGRONOMY



Final spring grazing before spray fallow & double knock.

workload: we can plant early and we don't have to harvest it. If we can still bring in an income from the livestock that will rival the gross margins of the faba beans, then we're in a pretty good place. And by terminating early, we're carrying more moisture through into the next canola crop."

The timing of the spray operation is determined by the ryegrass control that is needed.

"We'll spray whenever the ryegrass tells us to, so we'll go at milky dough stage or soft dough stage for ryegrass will be our termination timing, generally early to mid-October," he says.

For producers looking to introduce vetch into their systems, John has some advice.

"I think it comes down to workload: how does your current workload look?" he says. "Would you like to spread your seeding window a bit more? Is there too much pressure on in the seeding window? Are you undercapitalized at harvest, so 100% crop is too much for you? If so, vetch might be a good option."

In terms of things to look out for, John says, "If you're taking it through to seed, there's a carryover risk. It is a hard-seeded crop and can become a weed, particularly if you have got any high-value pulses in your plan."

"Make sure you've got an alternative source of feed – that's why we run our winter wheat. The autumn break can be variable. Frosts can be harsh. And if you don't have somewhere else to put your animals, you could have some pretty high stocking rates in need of feed pretty quickly. You've always got the option of selling, but that's not where you want to be."

"Finally, do a sound budget with your advisor and get a feel for what your stocking rates should look be and what returns you should expect."

John says they're not far enough down the track just yet to quantify the nitrogen benefit the vetch is giving them, but says it's on par with the CSIRO farming systems trials being run by John Kirkegaard.

"We're cycling a lot of vegetative matter through the sheep so the nitrogen is ending up in the soil rather than on the surface. So rather than losing it to oxidation, sitting in the weather, it's plant-available underneath. It's got lots of wins."



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Nitrogen banking: a long-term approach to risk

Nitrogen banking could hold the key to long-term profitability



The University of Melbourne's Dr Arjun Pandey compares treatments at the GRDC nitrogen management trial at Dookie in north-eastern Victoria. Photo: James Hunt, University of Melbourne

Nitrogen fertiliser is a costly input and its use increases the cost of production and Value at Risk (VaR) for growers. The idea of applying sufficient nitrogen to maximise yields regardless of the season is a source of trepidation for many growers and advisers.

Instead, many try to match nitrogen fertiliser to seasonal yield potential – but Australia's highly variable seasonal rainfall and the limited predictability of seasonal forecasts make this difficult.

The cost of nitrogen fertiliser is a factor in these decisions, but concerns about the potential for crops to hay-off under high nitrogen and terminal drought stress, and environmental losses of nitrogen through volatilisation, denitrification and leaching, also play a role.

It is often assumed that if nitrogen from fertiliser is not taken up by the crop in the year of application, it is a lost cost. However, unused fertiliser plays a vital role in maintaining the fertility of continuous cropping systems and is taken up by crops at least two years after the initial application.

Wheat crops typically only extract about 30 to 40 per cent of their nitrogen requirement from fertiliser. The most important source of nitrogen for crops – about 60 to 70 per cent – is the 'bank' of mineral nitrogen that is already in the soil, or which mineralises from organic nitrogen during crop growth.

On average, less than half of nitrogen fertiliser is taken up by crops in the year of application, making unused fertiliser the biggest source of 'deposits' into the nitrogen bank in continuous cropping systems.

In medium and low-rainfall regions with heavy textured soils, the majority of applied nitrogen that is not used in year of application will remain in the soil for use in subsequent seasons and is not a lost cost. This means there is little downside risk to occasional over-application of nitrogen, provided cashflow can be managed.

While it might seem pragmatic to reduce risk by lowering nitrogen applications, the result is a chronic long-term decline in soil organic nitrogen and a corresponding reduction in soil organic matter. A whole-of-system approach is needed to rebuild crop potential.

Nitrogen management systems such as Yield Prophet® and nitrogen banking, which use a soil test for mineral nitrogen, have been shown to increase both profitability and sustainability of cropping systems.

KEY POINTS

- ▶ Current seasonal risk approaches to nitrogen fertiliser are often based on the assumption that nitrogen fertiliser is a lost cost if it is not used in the year of application
- ▶ One Victorian trial has shown a simpler approach based on nitrogen banking can improve soil fertility, long-term yield and gross margins

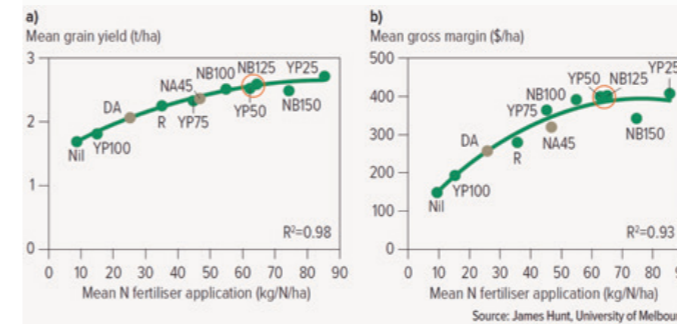


Figure 1: Both nitrogen banking (NB) and the Yield Prophet® (YP) strategies closed the yield gap (a) and improved gross margins (b) at Curyo, Victoria. Sum of results for 2018 to 2021 with five-year average costs and prices. NA = national average, DA = district average, R = replacement.

Measuring profitability

In 2018, the Birchip Cropping Group established a field trial to evaluate strategies for top-dressed nitrogen at Curyo with pilot funding from La Trobe University. The site was supported by the Mallee Catchment Management Authority through Landcare funding from 2019 to 2021.

The strategies were:

- ▶ replacement – replacing the nitrogen removed in grain;
- ▶ national average – 45 kilograms nitrogen per hectare;
- ▶ nitrogen banks – soil mineral nitrogen plus fertiliser total of 100, 125 or 150kg of nitrogen/ha (NB100, NB125 and NB150);
- ▶ Yield Prophet® probabilities – YP100 (100 per cent chance of achieving target yield, decile 1 rainfall required), YP75 (75 per cent, decile 2 to 3), YP50 (50 per cent, decile 4 to 7) and YP25 (25 per cent, decile 8 to 9); and
- ▶ nil – only starter nitrogen was applied.

The first year (2018) was dry with little rainfall after the nitrogen was top-dressed, yet soil testing at the start of 2019 found 58 per cent of applied fertiliser nitrogen remained as mineral nitrogen and had moved into the soil profile. It is unknown how much of the remainder had been immobilised into organic nitrogen and how much was lost from the system.

Both the nitrogen banking and Yield Prophet® strategies were able to close the yield gap and improve gross margins (Figure 1) by profitably alleviating nitrogen deficiency. But the banking approach is simpler and less time-consuming than the seasonal risk-based approach as it does not rely on calculations of seasonal yield potential.

These strategies remained profitable even when the fertiliser price increases observed in 2022 were used to calculate gross margins.

These profits held, regardless of whether the grain prices were based on the five-year average or the higher 2022 prices (Figure 2). Using a urea price of \$1400 per tonne and 2022 grain prices, the most profitable strategies were YP50 and NB125.

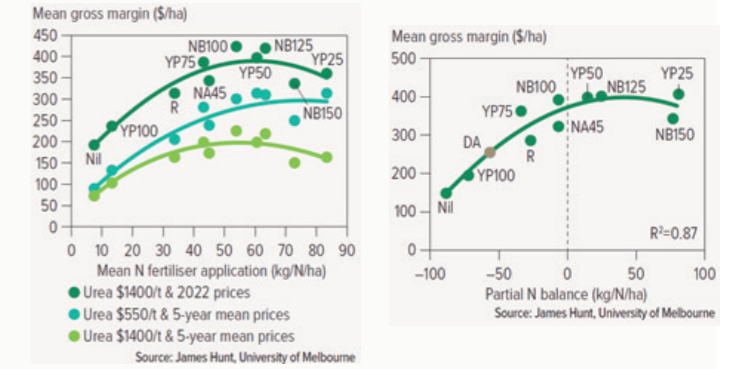


Figure 2: The nitrogen banking (NB) and the Yield Prophet® (YP) strategies remained profitable even with the higher fertiliser prices observed in 2022, regardless of whether the grain prices were based on the five-year average or the higher 2022 prices. NA = national average, R = replacement

Figure 3: The most profitable systems (total for the four years 2018 to 2021) had a small positive nitrogen balance. NB = nitrogen banking, YP = Yield Prophet®, NA = national average, DA = district average, R = replacement.

Positive N balances

The most-profitable strategies had a small positive nitrogen balance (Figure 3), whereas the district average mined an average of 50kg of nitrogen/ha in soil organic nitrogen and, in theory, about 600kg/ha of soil carbon.

Legumes and organic wastes could provide effective alternatives to nitrogen fertilisers while prices are high but, regardless of the source, high grain prices mean investment in nitrogen is well worth the expense.

While the field research has only been conducted at a single location over a limited number of years, crop simulation modelling suggests the findings are applicable across a wide range of rainfalls and soil types. The most-profitable nitrogen bank target depends on environmental yield potential and ranges from 80kg of nitrogen/ha in low-rainfall environments to 275kg/ha in high-rainfall environments.

More work is needed to confirm the value of nitrogen banking in multiple environments, including quantifying the potential for losses in different soil types and rainfall zones.

To achieve this aim, GRDC invested in the Curyo trial in 2022 and added 11 new field sites in Victoria and South Australia, and four in southern New South Wales.

These were managed by Birchip Cropping Group and FarmLink and preliminary results are expected to be delivered in March 2023.

GRDC Codes BWD2204-003RTX, BWD2204-002RTX, FLR2206-001RTX

Authors Professor James Hunt, James Murray, Hayden Thompson

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<https://groundcover.grdc.com.au/grdc-groundcover-supplement?supp=nitrogen-march-april-2023>

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The N Bank
bcg.org.au/the-n-bank-a-nitrogen-management-strategy

Know your Fusarium crown rot risk to protect grain yields

The costly fungal pathogen *Fusarium*, which causes Fusarium crown rot and Fusarium head blight, is likely to be in more paddocks than expected this year. Protect against this unseen cereal killer by sending samples of grain, soil or stubble for testing to guide appropriate management.



Bleaching of heads due to Fusarium head blight as seen at the Weather or Not site in Ganmain, 2021.



AT A GLANCE

NSW Department of Primary Industries senior plant pathologist Dr Steven Simpfendorfer says:

- ▶ Wheat, barley and durum are susceptible to Fusarium head blight at flowering and early grain fill
- ▶ Fusarium head blight can cause up to 100% grain yield loss and downgrading of grain
- ▶ sowing Fusarium-infected grain can introduce crown rot into clean paddocks through seed infection
- ▶ seed from crops where Fusarium head blight or white grains were evident must be tested as the fungus also lowers seed germination and vigour
- ▶ sowing Fusarium-infected seed can result in seedling blight (death), negatively affecting plant establishment
- ▶ widespread Fusarium head blight in 2022 was predominantly the Fusarium crown rot fungus letting you know that it has not disappeared
- ▶ know your risk in paddocks planned for cereals, especially if sowing durum
- ▶ test soil or stubble before sowing to identify individual paddock risk.



Basal browning from Fusarium crown rot



Basal browning from Fusarium crown rot as seen at the Weather or Not site in Ganmain, 2021.

Fusarium crown rot is expected to cause significant grain yield losses if rainfall is average or below-average this year, especially during spring.

Typically caused by the fungal pathogen *Fusarium pseudograminearum*, plant pathologists say a brown infection at the base of tillers signals the disease.

Fusarium head blight can be caused by the fungus *Fusarium graminearum* and likely comes from spores hosted on maize or sorghum stubble or grasses.

However, the crown rot fungus *Fusarium pseudograminearum* can also cause Fusarium head blight:

- ▶ in warm temperatures (20 to 30°C);
- ▶ when humidity (more than 80%) is prolonged; and
- ▶ when rain splash moves the fungus from the lower stems to the heads at flowering or early grain fill.

Both diseases are visible after flowering. Fusarium head blight requires 36 to 72 hours of wet weather during flowering and grain fill. Crown rot becomes visible as whiteheads after dry weather during grain fill.

Season 2022

Dr Simpfendorfer says spring's prolonged mild conditions extended the flowering window for wheat and durum.

"Combined with extended high humidity, these seasonal conditions facilitated Fusarium head blight infection across much of New South Wales," he says.

"As a consequence, the prevalence of Fusarium head blight and white grain disorder (*Eutiarospora spp.*) across large areas of eastern Australia was unprecedented.

"Developing a plan to minimise the presence of these two diseases at early flowering is critical by understanding the risk factors."

A constant threat

Dr Simpfendorfer says crown rot did not disappear during the past three wet seasons.

"The risk was elevated in northern NSW before planting in 2022," he says.

"The increased frequency of cereal crops within rotations after the 2017-19 drought, along with reduced sowing of chickpeas, were the key underlying causes.

"Fusarium crown rot requires moisture for infection, so inoculum levels have been building within paddocks during the past three years.

"But wetter and milder springs have limited the expression of infection as whiteheads."

A widespread problem

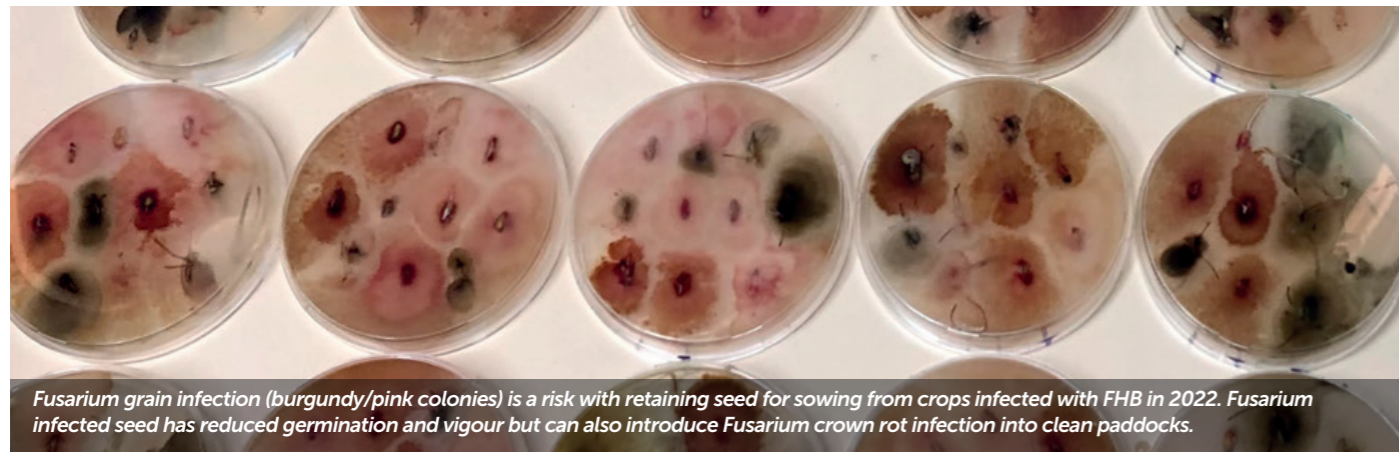
In 2022, Dr Simpfendorfer says Fusarium head blight, which caused premature partial bleaching of heads and white or pink grains, was widespread at varying levels across eastern Australia.

"To date, tests of 218 heads or grain samples indicate that about 90% of Fusarium head blight, found across NSW and southern Queensland in 2022, was related to tiller bases infected with Fusarium crown rot," he says.

"This means that Fusarium infection in wheat and durum crops became visible as Fusarium head blight because of the wet and mild conditions at flowering and grain fill.

"The Fusarium infection in the tiller bases would have expressed as whiteheads if crops became temperature or moisture stressed at flowering and grain fill in 2022.

"This is a massive warning sign; do not ignore it. Testing to know your risk is critical."



An agronomist's perspective

Riverina Independent Agronomy senior agronomist Neil Durning agrees, adding that he has already sent multiple seed samples away for testing.

"There was such variability in grain yields from last year that I am wondering if some growers may have inadvertently kept seed from paddocks infected with Fusarium head blight in 2021," he says.

"One of my clients, who runs a continuous wheat/canola rotation and routinely does a late burn to eliminate stubble-borne diseases, has wheat stubble that is riddled with crown rot.

"The basal browning was evident on the lower stems of the stubble, which just shouldn't happen.

"Last year, his crops looked like they would yield six tonnes a hectare, but they only yielded 4t/ha.

"When we sent the grain from that paddock to Dr Simpfendorfer's laboratory for Fusarium testing, the results indicated a medium level of Fusarium grain infection.

"He will now have to find another seed source for sowing."

Testing a must

With head blight widespread in 2022, Dr Simpfendorfer says the disease will have significant implications for seed retained from infected crops.

"Fusarium grain infection reduces germination and causes seedling blight or death in plants arising from infected grain," he says.

"The fungus replaces the contents of infected seed with its mycelium, so while seed treatments can help reduce the level of seedling blight, they cannot restore the quality of heavily infected seed sources.

"Sowing Fusarium-infected seed also introduces Fusarium crown rot into paddocks. The level of pink or white grains in a sample is likely to under-represent the actual level of Fusarium grain infection.

"Later infections when there is high humidity during grain fill encourages the Fusarium pathogens to spread into formed grains that appear normal.

"Sourcing quality unaffected seed for sowing in 2023 will likely be challenging."

Never assume

Accordingly, Dr Simpfendorfer says that assuming your seed will be disease-free could be a costly exercise.

"If you had any Fusarium head blight in crops retained for sowing seed or noticed white or pink grain at harvest, send a sample of your grain to a commercial germination and vigour testing service," he says.

"Alternatively, send a sample to the NSW Department of Primary Industries for free testing well before sowing."

In addition, he says, any paddock planned for cereal on cereal needs to be assessed for crown rot risk using either the PREDICTA® B or NSW DPI and NSW Local Land Services cereal stubble plating before sowing.

"Testing is imperative in any paddock where Fusarium head blight was noticed in 2022 because there is a high (90%) probability that the infection arose from Fusarium crown rot in the base of plants."

Dr Simpfendorfer says that of the 198 cereal stubbles tested from the 2022 harvest, crown rot levels were:

- ▶ low (less than 10%) in 44% of samples;
- ▶ moderate (11 to 25%) in 26% of samples;
- ▶ high (26 to 50%) in 16% of samples; and
- ▶ very high (more than 50%) in 14% of samples.

"Fusarium crown rot levels will vary according to the paddock," he says.

"Avoiding sending samples for testing is like sending your neighbour for a prostate test to see if you will be okay!

"Having cereal stubble and seed tested is less painful than having a prostate test. It will help with paddock planning and prevent you from sowing infected seed."



Paddock planning

Dr Simpfendorfer says if test results indicate the crown rot risk is moderate to high, sow a non-host break crop such as faba bean, chickpea or canola.

If you still wish to plant a winter cereal:

- ▶ sow bread wheat or barley varieties with improved tolerance (not durum wheat);
- ▶ use a registered fungicide seed treatment (at label rates) to suppress early disease development;
- ▶ sow at the start of the recommended window for each variety for your location;
- ▶ consider inter-row sowing if previous cereal rows are intact;
- ▶ consider a late stubble burn to reduce above-ground inoculum levels. However, this must be weighed against other benefits of stubble retention. Burning is not a 'quick-fix';
- ▶ avoid cultivation as it spreads inoculum;
- ▶ be conservative on nitrogen application at sowing because urea exacerbates crown rot, and 'hyper-yielding' is potentially 'hyper-risk' when the pathogen is present;
- ▶ apply zinc at sowing to ensure that crops are not deficient;
- ▶ check infection levels at growth stage 39 to guide other in-crop management decisions such as applying a fungicide at GS61 for head blight if the season warrants.

Dr Simpfendorfer says you can complete an at-home test for germination and vigour if you want to avoid sending samples away for testing.

"Count three lots of 100 random seeds and sow in separate spaced rows in the garden and see what comes up," he says.

"Seed quality cannot be assured after the exceptional conditions in 2022.

"Potentially, seed retained from 2021 may be of better quality for planting in 2023.

"You don't know if you don't test. But don't do a whole-paddock experiment to find out."

Spraying crops

Dr Simpfendorfer encourages growers who have planted wheat into paddocks with an elevated risk of crown rot to be prepared if conditions are conducive to head blight during flowering.

"Have Prosaro® available for a flowering (GS61) application using twin nozzles that are forward and backward-facing to cover both sides of a wheat head with at least 100 litres per hectare of water," he says.

"Aerial applications provide poorer head coverage and typically provide up to 40 to 50% of the control achieved with a properly set-up ground rig."

Mr Durning says he saw a big difference in the performance of different fungicide formulations, with tebuconazole providing little if any control of Septoria and Fusarium head blight.

"Growers who applied a GS61 application of Prosaro® with a self-propelled spray rig went on to harvest excellent grain yields and reported no sign of stripe rust infection or Fusarium head blight," he says.

"Last year, we saw plenty of people deliver distorted grain that appeared pink or white, which indicated a likely Fusarium head blight infection.

"While infection levels last year were unprecedented, in reality there were very few opportunities to protect against Fusarium head blight because the GS61 head wash cannot be done by air, and it was simply too wet in many cases for ground rigs.

"The disease could be even more devastating this year if seed from those infected crops is sown, so the message is to find a clean seed source."



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FARMLINK PARTNERSHIPS

GOLD PARTNERS



SILVER PARTNERS



FarmLink

change • adapt • prosper

FarmLink partners make a valuable contribution to the continuation of research, development and extension in all facets of grain and livestock farming in Southern New South Wales. FarmLink embraces its partnerships with industry leaders and customises partner packages to be mutually beneficial to both parties. As a result benefits flow through to FarmLink partners and the agricultural industry at a local, regional, state and national scale.

If you would like to discuss the possibility of partnering with FarmLink, CEO, Andrew Bulkeley would be happy to meet with you. Simply call (02) 6980 1333 to arrange a suitable time.

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BRONZE PARTNERS



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New Fusarium crown rot treatment

NSW Department of Primary Industries senior plant pathologist Dr Steven Simpfendorfer says the currently available seed treatments registered for Fusarium crown rot suppression are inconsistent in reducing the extent of grain yield losses.

"A new succinate dehydrogenase inhibitor (SDHI) fungicide called cyclobutrifluram (VICTRATO® Seed Treatment) appears to have more consistent and stronger activity on limiting yield loss from Fusarium crown rot, but it will not be available until at least 2024," Dr Simpfendorfer says.

"However, under high infection levels, as created with artificial inoculation in our experiments, significant yield loss may still occur, particularly in dry seasons.

"Consequently, fungicide seed treatments, including VICTRATO® should not be used as standalone control options for Fusarium crown rot.

"Rather they should be used, at label rates, as part of integrated disease management that includes a range of tactics."

These tactics, he says, include stubble management, growing wheat varieties with a higher level of tolerance to Fusarium crown rot, sowing time, growing one or two non-host crops in succession and reducing the harvesting height.



Cereal seed and stubble testing is worthwhile

NSW Department of Primary Industries senior plant pathologist Dr Steven Simpfendorfer says free cereal seed and/or stubble tests will help detect the risk of crown rot, take-all and common root rot in paddocks.

The laboratory test is an initiative of the NSW DPI with investment from GRDC being undertaken in collaboration with NSW Local Land Services (LLS).

Sample kits are available at NSW LLS offices in Temora or Wagga Wagga and collected samples will be bulk-delivered to Dr Steven Simpfendorfer.

The sampling protocol is available via tinyurl.com/3hckt57d with all the instructions on what information to provide and the address.

GRDC Code DPI2207-04RTX



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Useful Fusarium resources

PREDICTA® B: https://pir.sa.gov.au/research/services/molecular_diagnostics/predicta_b

PREDICTA® B sampling procedure: https://pir.sa.gov.au/__data/assets/pdf_file/0007/291247/Sampling_protocol_PreDicta_B_Northern_regions.pdf

Crown rot in winter cereals: https://grdc.com.au/__data/assets/pdf_file/0029/165917/grdc_tips_and_tactics_crown_rot_southern_web.pdf

Germplasm with better resistance to Fusarium crown rot: <https://groundcover.grdc.com.au/weeds-pests-diseases/diseases/wild-wheat-relative-leads-to-crown-rot-gene-discovery>

The importance of quality planting seed in 2023 after the challenges of 2022:

<https://soundcloud.com/user-889937785/the-importance-of-quality-planting-seed-in-2023-after-the-challenges-of-2022>



Online improvements provide more support for farmers

The Climate Services for Agriculture (CSA) platform had a new release in February, with new commodities added, and a range of new features, following input from across the agricultural sector.

CSA is an online platform to support farmers manage climate risks and build drought resilience. FarmLink has supported the development of CSA since the beginning of 2021, connecting project partners CSIRO and the Bureau of Meteorology with growers and producers, and the broader agricultural community. It is one of FarmLink's largest projects.

The improvements to the platform follow engagement across the agricultural sector, including testing the platform prototype in pilot regions, to ensure it provides practical information to help build farmers' climate adaptability.

Minister for Agriculture Fisheries and Forestry, Senator Murray Watt, said new additions to the Climate Service for Agriculture (CSA) platform would give more farmers and agricultural businesses a clearer picture of climate trends likely to impact them.

"Regions across Australia have experienced widespread and devastating flooding for the past three years," Minister Watt said.

"However, drought is also a natural part of our landscape, and periods of drought are likely to become more frequent and severe with climate change.

"That's why innovative digital tools for farmers, like CSA, are essential to prepare for the return of dry conditions and the changing climate.

"Farmers can use CSA to assess how the climate variables that matter to their business could change in the future at their location.

Minister Watt said the CSA platform was developed through the Bureau of Meteorology and CSIRO, with funding from the Future Drought Fund.

"Australian farmers have a great story to tell when it comes to sustainability and by building resilience on farm their sustainable credentials will only increase," he said.

"The Albanese Government is committed to ensuring our agricultural industry has the tools it needs to be sustainable, helping them reach their own climate goals."

CSA provides historical climate data, seasonal outlooks and future climate projections to help inform decision making and build drought resilience – now, and in the future.

To explore how Climate Services for Agriculture can assist you on farm, visit: <https://climateservicesforag.indraweb.io/>

CSA is free and requires no registration or log-ins. If you would like to organise a demo, contact Sarah at FarmLink on comms@farmlink.com.au or on 0419 165 771.



You can explore the CSA platform here:

<https://climateservicesforag.indraweb.io/>

Crown rot inoculum a surprising find



Brad Baxter discusses Predicta® B results at a GRDC Soilborne Pathogens Field Walk in Ben Langtry's trial paddock (August 22).

A small trial on Ben Langtry's family farm near Marrar, New South Wales, shows just how costly Fusarium crown rot can be in wet conditions.

The six-hectare trial was set up in 2020 as a soil-borne disease demonstration, with GRDC investment, after Ben found bare patches in his Planet (PBR) barley and phoned FarmLink operations manager James Holding.

Back then, James and Ben suspected Rhizoctonia was the dominant disease because bare patches were evident in the crop.

In 2021, the pair sowed different crops to compare their effect on disease inoculum levels in the soil. The crops sown were vetch, barley and field peas.

In 2021 and 2022, James collected soil samples for PREDICTA® B analysis using the required sampling procedure (tinyurl.com/3b4pbv34).

The results showed high levels of Rhizoctonia, as expected, but the pair was surprised by how high the crown rot levels were in 2021 and 2022 (Table 1).

In 2022, Ben Langtry and his family planted Beckom (PBR) wheat across the trial site.

James says that where successive cereal crops had been grown without a break crop, the emergence and biomass production of the 2022 Beckom (PBR) wheat was patchy and poor.

"Germination and seedling vigour for the wheat was improved where a single break crop of field peas or vetch was planted in 2021."

Grower's perspective

Ben, who sows using a Bourgault single-disc seeder set on 19.05-centimetre (7.5-inch) row spacings, usually runs a crop rotation comprising a pulse/canola/wheat/barley/pulse/canola.

For the demonstration trial, the entire area had all stubble retained.

"We planted a wheat crop into the barley stubble across six hectares for James' demonstration trial," Ben says.

"It was quite alarming to see how high the crown rot inoculum was in our soils when the PREDICTA® B test results were returned.

"Where wheat was planted into barley stubble, the grain yield was about 0.75t/ha less than where wheat was planted into pea or vetch stubble.

"The grain yield penalty of planting cereal after cereal was clearly evident."

Table 1: PREDICTA® B results from soil sampled from FarmLink's soil-borne disease demonstration on Ben Langtry's family farm near Marrar, NSW.

Site	2021 Crop	2021	2022	2021	2022	2021	2022
		Take-all (pgDNA/g Sample)	Take-all (pgDNA/g Sample)	Rhizoctonia (pgDNA/g Sample)	Rhizoctonia (pgDNA/g Sample)	Crown rot (pgDNA/g Sample)	Crown rot (pgDNA/g Sample)
Marrar	Barley	0.74	0.75	1.55	2.01	3.29	1.23
	Field peas		0.00		1.54		1.26
	Vetch		0.00		1.03		0.78

Risk to yield loss categories	Low risk	<1	<1.5	0.1<1.5		
	Medium risk	<2	<2	1.5<2.5		
	High risk	≥2	≥2	≥2.5		
Population densities	Low				<1.2	<1.4
	Medium				<2.1	<2
	High				≥2.1	≥2

Source: James Holding, FarmLink Research

After hosting this small demonstration over the past two years, Ben says the work shows that growing two years of break crops is helping to drive down the complex of diseases in his soils.

Going forward, he says the land used for the trial is earmarked for planting to narrow-leaved lupins to line it up with the rest of the paddock.

A late burn is never out of the question, he says, where stubbles are thick or where he grows a single-break crop such as canola.

"We didn't see any signs of Fusarium head blight, pink or white grains anywhere else on our farm and we will discuss the merits of further PREDICTA® B testing with our agronomist," he says.

Single break disadvantages

NSW Department of Primary Industries plant pathology researcher Brad Baxter says a single break crop such as one year of canola or a pulse might not be enough to drive down the Fusarium crown rot inoculum to safe levels for cereals.

"Research shows that a double break crop can significantly drive down the Fusarium crown rot inoculum level, but not every system is set up to accommodate a double break," Mr Baxter says.

"In continuous wheat/canola systems, the Fusarium crown rot inoculum may be maintained or increase over time, depending on what you do with the cereal stubble and any other integrated management plans put in place.

"Our research shows that after a single canola break, about 50% of commercial paddocks in southern NSW still had

medium to high risk levels for Fusarium crown rot. This can equate to up to a 60% grain yield loss risk in a bread wheat before the crop is sown.

"Paddock surveys show crown rot is found everywhere. However, farming systems with more-diverse rotations generally have lower levels of crown rot and root diseases."

Riverina Independent Agronomy senior agronomist Neil Durning agrees, adding that a double break also delivers weed control and nitrogen benefits to the farming system.

"If you saw distorted white or pink grain or white heads in 2022 crops, have your soil, stubble or seed tested to assist with rotation and crop management planning," he says.

"Avoid at all costs the sowing of infected seed, because when wheat costs \$1000/ha to grow, there's little point compromising such a large investment with poor-quality seed.

"Crown rot left undetected can be a silent killer, so if the season turns dry, we could see catastrophic effects on grain yields."



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FarmLink Flock Goes Digital – Getting Started

With the addition of 190 Australian White ewes to the Temora Agricultural Innovations Centre (TAIC) in 2022, FarmLink is looking to optimise its new enterprise in 2023 using the latest sheep technologies and ideas. To aid in this, FarmLink has recently installed EIDs in all sheep, upgraded our sheep yards and bought a sheep handler.

A set of custom designed 1200 Sheep StockPro yards were recently installed. These yards have been designed to increase stock flow through the yards, while minimising jumping and animal stress. The race, handler and bugle are completely covered under a large, roofed area.

In addition to the yards, FarmLink has also purchased a brand-new Te Pari HD3 sheep handler, Revolution Dosing Gun and iST7 stick reader. The handler has been placed in

line with the main drenching race, instead of having its own race branching off the bugle. The idea behind this being that the sheep get trained to go down the same race every time they enter the yards. The Revolution Dosing gun in combination with the handler will allow us to give individual weight-based drench doses.

With this technology FarmLink also hopes to be able to keep track of sheep genetics, as Aussie whites do not have ASBVs. The handler will also allow us to monitor our sheep's weights and draft automatically in a timelier manner. Being able to record individual sheep's data will allow for better decision making in the future.

A good example of this is our recent foray into EID stick reading. In January of this year, before the new equipment

had arrived, our ewes were pregnancy scanned. Each ewes' individual results were recorded onto a borrowed stick reader. We also took the opportunity to record the sheep's wool status i.e., how much wool they had shed. With this information alone and Microsoft Excel, we now have the resources to cull sheep that do not fit our breeding criteria. If adverse farming conditions were to arise, we would also now have a basis to cull upon. This is a simple example of how EIDs could be integrated into a livestock enterprise.

In the coming year it is hoped that TAIC staff will be able to build on their knowledge and technology skillset to improve farming practices and provide an example as to what can be achieved with these types of technology.



FarmLink's Ehlena Lea testing the new equipment and facilities



Handler controls



TAIC's recently installed race and handler



Te Pari iST7 EID stick reader



Revolution Dosing gun in combination with the handler will allow us to give individual weight-based drench doses.

Keep your acid soil management up-to-date.

FutureSOILS – Charles Sturt University (CSU) researcher Dr Jason Condon and NSW Department of Primary Industries (DPI) development officer Helen Burns are urging growers to act now to address acid soils.

KEY POINTS

- ▶ Past liming practices have not stopped acid layers from forming in productive soils
- ▶ Check crops and pastures for poor growth
- ▶ Dig up any stressed plants and inspect the roots
- ▶ Poor vigour, stunted root growth and/or poor nodulation could indicate an acid soil constraint
- ▶ Use a soil pH test kit to check and compare soil pH profiles from areas of good and poor growth
- ▶ Collect soil samples in five-centimetre increments to a depth of at least 20cm if subsurface acidity is suspected
- ▶ Send the samples to an accredited laboratory for testing for pH, aluminium percentage and cation exchange capacity
- ▶ The test results will confirm the depth and severity of acidic layers
- ▶ Use the test results to develop a targeted acid soil management program
- ▶ Incorporate lime to the depth of acid layers, if possible
- ▶ Where acidity is deeper than the depth of lime incorporation or if incorporation is not possible, maintain a soil pH_{Ca} of more than 5.5 in soil overlying the acid subsurface layers
- ▶ If soil pH_{Ca} falls below 5.5 in the zero to 10cm layer, apply lime to move back to a pH_{Ca} of 5.8
- ▶ Lime will not move unless soil pH_{Ca} is above 5.5



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Current recommendations

Dr Condon says soil testing every two to three years is the best way to determine if your management is effective or if acidity is still constraining yields.

Based on the latest research, he says, the new recommendation is to target a pH_{Ca} of 5.8 in the soil that sits over an acidic subsurface layer.

“Keeping pH_{Ca} over 5.5 in the top 10cm will ensure the alkali from the lime moves into the deeper acid soil layers,” he says.

“The rate of movement will depend on soil type, rainfall and acidification rate, so predicting the rate of movement is difficult.

“Above a pH_{Ca} of 5.5, we can expect, over time, that the alkali will fix the acid layer beneath the depth of incorporation.

“History has shown us that if you have a pH_{Ca} of less than 5.5 in a layer, the alkali will not move.

“The message in the 1980s should have been ‘fix the problem now!’

“With land now costing up to \$20,000/ha, the relative price of lime is very low compared with the 1980s; people can’t afford to buy more land but they can afford to fix the land they have.”

Dr Condon says current FutureSOIL research will help to answer two questions:

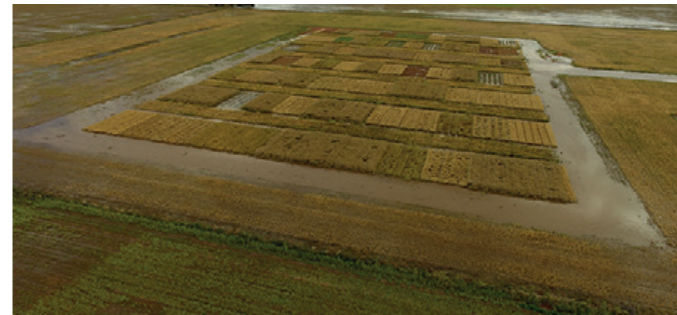
- ▶ What is the most effective way to manage acid soils?
- ▶ What is the best method to achieve the target pH in certain soil layers?

He says the research will ultimately produce new tools to assist management.



FutureSOILS
<https://farmlink.com.au/futuresoils>

Pre-season learnings for season 2023



The 2022 season has been one of the wettest seasons on record in Sth NSW, with both the Condobolin site and the Urana site suffering periods of inundation, and periods where it was difficult to spray fungicides or top cut hay. The Wagga Wagga site and the Greenethorpe Site were also very wet but being more free draining didn’t have the same level of trafficability issues. The regular ongoing wet conditions meant that fungal disease of all crops required repeated sprays and lodging of some crops will make harvesting difficult. This has been the 3rd wet season in a row, and although high rainfall drives high yield potential, the required input levels also create high costs and greater risk. After 3 consecutive wet seasons and entering another summer with full profiles and more rain predicted, the team nominated the following list of learnings that could be considered as growers plan for the 2023 season.

- ▶ **Paddocks may take time to clean up for sowing.** The delayed and wet harvest, with significant risk of bogging and damage to soil is likely to require some attention to restore paddocks for ease of sowing in 2023. Consider what measured may be required to deal with tracks, washes to ensure an even field for timely and effective sowing.
 - ▶ **Keeping seed?** Weather damage on seed is likely in 2022 so for crops being kept for seed, get it tested for germination and vigour before sowing. Consider purchasing new seed, but have it tested (trustworthy source) as it will be a widespread problem in 2023.
 - ▶ **Manage stubble from harvest.** Based on your seeding equipment, ensure stubble loads are managed to a level that your seeding equipment can handle without blockages or delays – timely sowing is critical. Less stubble will be required in wet summers so loads can be reduced while maintaining 100% cover.
 - ▶ **Control weeds in summer to preserve water and N.** In wet summers and with full profiles of water and a wet outlook, only weeds are likely to rob fallows of water and N and to act as a green bridge for diseases and pests to infect early-sown crops. Maintain a strict summer fallow weed control strategy where possible.
- ▶ **Be prepared to sow early:** Water is unlikely to be a limiting factor so that early sowing opportunities are likely. Ensure good weed control and stubble management from the time of harvest to ensure paddocks are ready for sowing in a timely way. Earlier sown crops have tended to weather the wet seasons better and have a higher yield potential. Manage lodging risk with grazing or deferred N and moderate plant populations.
 - ▶ **Don’t guess – soil test paddocks up front.** After such a difficult and wet year with high crop N demand, but potential N losses from waterlogging, runoff or leaching, it is very difficult to predict the residual soil N levels. A \$70 soil test in a few key paddocks will be well worth the money to plan early N application needs to ensure early crops have sufficient N to reach grazing and yield potential.
 - ▶ **Benefit of residual N from legumes and canola.** Our results suggest legumes will leave an average of 50 kg/ha more N at sowing of subsequent crops, but the range can be 20 to 180 kg/ha. The more legume biomass left in the field, and the less N removed in grain, the more N will be provided by the legumes, provided they were well nodulated and healthy.
 - ▶ **Canola crops can also leave quite a lot of N in their residue,** as the leaves and petals fall in spring, and the harvest index is only 0.3 (compared to 0.45 for wheat) meaning a higher proportion of N is left in the paddock. While warm moist conditions will favour mineralisation of legume residues, periods of prolonged inundation, especially under warmer temperatures may lead to N losses through denitrification. It’s difficult to predict these processes, so measuring soil N levels will be a good investment to plan the 2023 N strategy.
 - ▶ **Legumes leave more water, but this can diminish over the summer:** Legumes often don’t root as deeply or use as much water as cereals or canola so at harvest may have more water left in the profile. However, this advantage diminishes over summer because cereals and canola leave more soil cover compared to legumes, so more summer rainfall is stored. Extra water is of less importance in years where the soil profile remains full at harvest.
 - ▶ **Moving to varieties with higher disease resistance.** In wet seasons, the disease burden is higher and the need for fungicides on susceptible varieties is increased, yet the ability to get onto paddocks for timely spraying is reduced. Under these circumstances, varieties with higher genetic resistance will have lower disease levels and higher yield potential and will also place less pressure on pest and disease populations to develop resistance to the fungicide chemicals.



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GRDC Project code: CSP2110-004RMX

Photosensitisation in Livestock



By Adelaide Nunn

What is photosensitisation?

Photosensitisation is a disease affecting cattle, sheep and goats whereby the consumption of toxic plants causes an overload of photodynamic agents which react with sunlight to cause skin damage.

There are two forms of photosensitisation, primary and secondary, which are categorised based on how the disease develops.

Primary photosensitisation is caused by the ingestion of toxic plants containing light-sensitive agents which react to sunlight. In Australia, the most common of these is called phylloerythrin. When livestock ingest these toxic plants, the phylloerythrin is absorbed into the bloodstream and when exposed to sunlight, these pigments can fluoresce, resulting in skin damage. In these cases of primary photosensitisation, production losses can be significant, but the liver is not damaged and mortality of stock is less likely to occur.

Plants containing toxins that cause primary photosensitisation include:

- ▶ St John's wart
- ▶ Buckwheat

Secondary photosensitisation occurs when there is liver disease which stops the normal metabolism of photodynamic agents by the liver. The levels of photodynamic agents then build up in the bloodstream. If an overload of these agents occurs, skin exposed to sunlight becomes severely damaged. The initial cause of liver damage may be through the consumption of certain toxic plants or by other insult. If the liver damage in livestock is severe, there are often mortalities.

Plants containing toxins that cause secondary photosensitisation include:

- ▶ Hairy panic
- ▶ Sweet grass
- ▶ Caltrop
- ▶ Heliotrope
- ▶ Paterson's curse
- ▶ Lantana
- ▶ Fungus of lupinosis

Clinical signs?

Signs of photosensitisation include red, weepy and swollen skin, which may lead to ear drooping or closed eyelids. If excessive swelling is present, animals may have difficulty breathing or grazing. In severe cases, the surface of the skin may crack, turn black and slough off.

In sheep, the face, ears and muzzle are the worst affected areas, however, sheep that have been recently shorn may be affected over the whole body.

In cattle, lesions are usually limited to white-coloured areas but skin damage can occur along the back and on the udder.

There is intense irritation and pain associated with the skin damage. Affected animals will be agitated and lose their appetite, seek shade and scratch against fixed objects.

The severity of the skin lesions depends on the type and amount of toxic plant ingested, the stage of growth of the plant and the amount of sun exposure.

In cases of secondary photosensitisation with liver damage, animals may also become jaundiced in the eyes, skin and gums.

In cases of primary photosensitisation, signs generally appear within 2-3 days of ingesting the plant. However, in cases of secondary photosensitisation, signs of may not occur until weeks after the animals have been removed from the toxic pasture.

Treatment?

Treatment strategies are directed at removing the toxic plants and protecting livestock from sunlight:

- ▶ Remove stock from the paddock where the disease is occurring.
- ▶ If possible, put stock in a darkened shed.
- ▶ Provide stock with water and cereal hay (or lower quality hay with no green colour).
- ▶ Seek veterinary attention for severely affected or valuable animals.

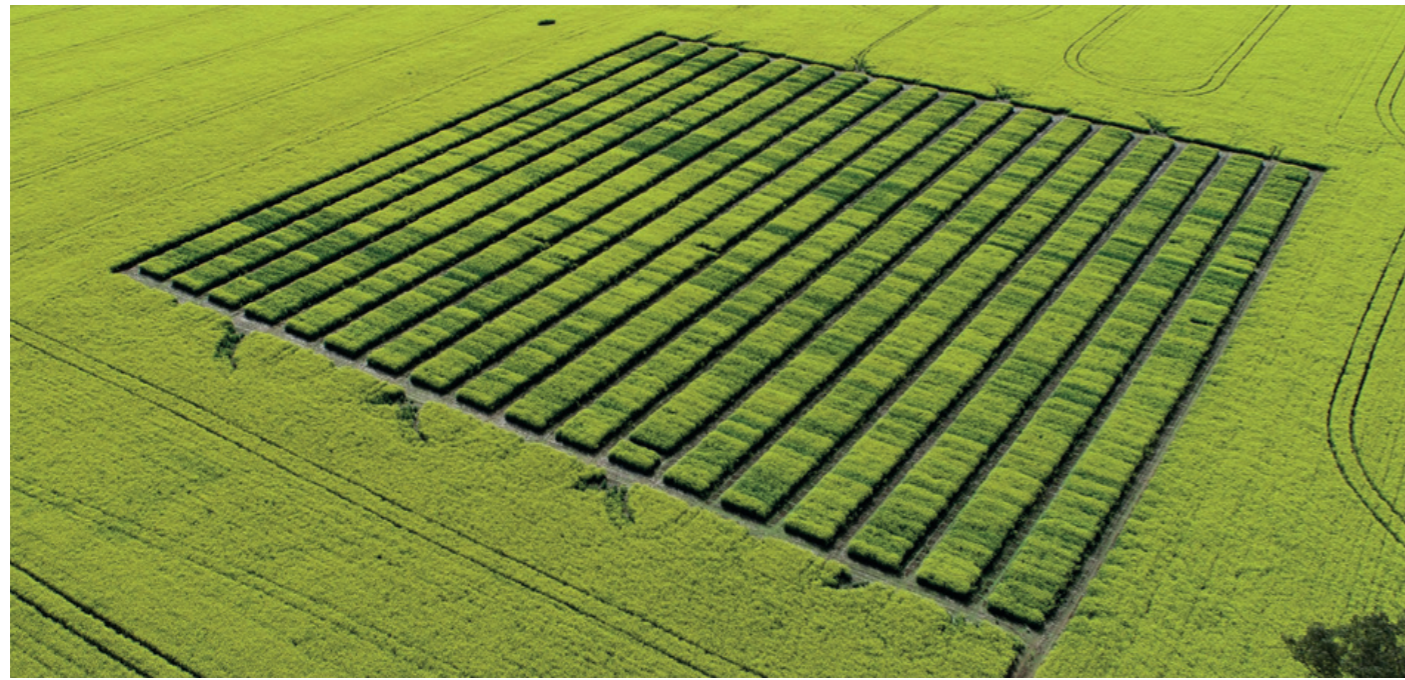
It should be emphasised that livestock with photosensitisation are highly allergic to sunlight and this condition is not sunburn. Affected livestock require complete protection from sunlight for at least a week. Mild cases of primary photosensitisation should improve in less than a week after being removed from the toxic source. In severe cases or where liver damage is suspected, recovery may be more prolonged.



Prevention?

Appropriate pasture management and control of toxic plants is important in preventing the onset of photosensitisation. In high-risk periods (spring and summer) regular assessment of stock should be conducted to enable early recognition and treatment of the condition to minimise losses.

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Corteva Agriscience Announces Commercial Launch of Optimum GLY® Canola

Proprietary, advanced herbicide trait technology for canola will be available to Australian farmers for 2024 planting season.

Corteva Agriscience today announced plans for the commercial launch of Optimum GLY® canola – an advanced herbicide-tolerant trait technology for canola farmers in Australia, Canada and the United States. Optimum GLY® will be offered in Australia through Corteva Agriscience seed brand Pioneer® Seeds, with licensing, education, and demonstration trials in 2023 followed by commercial sales in 2024. In Canada and the United States Optimum GLY canola will be offered through Corteva Agriscience seed brands, Pioneer® and Brevant® seeds for planting in the 2023 growing season, with an accelerated ramp-up in a broader set of genetic backgrounds and maturities in the coming years.

“We are pleased to launch our Optimum GLY herbicide-tolerant trait technology, which represents a significant advancement to further strengthen Corteva Agriscience’s industry-leading canola portfolio and bring new proprietary traits to the market,” said Chuck Magro, Chief Executive Officer, Corteva Agriscience. “A culmination of years of research and development, Optimum GLY canola is designed to deliver top yield potential and agronomic trait performance for canola farmers, providing them with a greater measure of control over their crops.”

Optimum GLY herbicide tolerance is a new, proprietary glyphosate trait technology intended to deliver enhanced weed control and a later window of herbicide application, compared to first-generation glyphosate trait technology*, so farmers have more choices and flexibility for effective and responsible weed management.

“The launch of Optimum GLY canola builds on Corteva Agriscience’s track record of delivering innovations to farmers,” said Chuck Magro, Chief Executive Officer, Corteva Agriscience. “This is another solution from our robust pipeline that solves farm-level and field-level specific challenges while helping address global food security.”

Farmers in Canada will have access to Optimum GLY herbicide tolerance through spring canola hybrids from both Pioneer and Brevant seeds brand, while farmers in the United States and Australia will have access to the product through the Pioneer brand. Corteva also intends to broadly out-license Optimum GLY herbicide tolerance technology to provide farmers more flexibility and choice of herbicide tolerant canola hybrids.

A rich source of protein and oil low in saturated fats, canola is an important crop to help sustainably meet the global demand for food and energy.

Corteva products are launched in accordance with our product launch policies and Excellence Through Stewardship® Product Launch Guidance.

For additional details please visit <https://www.corteva.com.au/products-and-solutions/seeds/optimum-gly.html>



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Out on the Farm

Temora Agricultural Innovation Centre (TAIC)



Things are getting busy at TAIC as we prepare for sowing 2023! Our focus leading into sowing has been retaining as much soil moisture as possible. All cropping paddocks were double knocked straight after harvest with glyphosate + 2,4-D amine followed by paraquat. This was an important early spray to control some of our hard to kill summer weeds, in particular Fleabane.

Over the last few years, we have undertaken an intensive liming program across the farm. With lime sourced from Westlime in Parkes, we have been applying high rates and incorporating with a speed tiller across the farm. We will be liming the last of these paddocks in the next month and this will be the last lime for a few years at TAIC, due to our approach of higher rates and less often.

On the sheep front, lambing is underway, with the first lambs dropped in late February. We aim to lamb our Australian White ewes 3 times in 2 years. This has its challenges but also potentially will provide an increase in profitability.

The first trials at TAIC started early this year, with Kalyx setting up a herbicide plantback trial in January. Over the next couple months, we will see numerous other herbicide, fertiliser, agronomy and grazing trials being established in what is promising to be an exciting trials year at TAIC.

One exciting new addition to the trials program this year will be a FarmLink and Hart bros funded mixed species (grazing), companion cropping (graze and grain) and intercropping (grain and grain) trial. This will showcase the potential of growing multiple crop species together for a range of different end uses.

Our major project funding partner is



Current Projects

- Agrisilica Trials
- Baking Quality Trial
- Climate Services for Agriculture (BOM/CSIRO)
- Cool Soil Initiative
- Feathertop Rhodes Grass
- Future Proofing the Soils of Southern and Central NSW (NLP)
- Hands-on Precision Ag Training for Growers
- Harvester Set-up Workshops
- Improved drought resilience through optimal management of soils and available water
- Innovative Organic Ameliorants
- Mixed Species Pasture Trial
- Nitrogen Banking strategies
- Novel Soil Ameliorants (Soil CRC)
- Resilient Pastures
- Robust Weather Stations
- Saving our soils during drought
- Soilborne Pathogens (GRDC)
- Soil Water Storage
- Stock Management Areas
- Stripper Front Project (GRDC)
- Weather or Not

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