

ABN: 24 340 895 393

PO BOX 17
MOONBI NSW 2353

drycotresassoc@gmail.com

August 2025



Research Forum: Xtend Flex technology Panel Discussion



Facilitator: Mitch Cuell, Outlook Ag

Panel Members: Angus Roberts (AMPS Moree), Sam Simons (Poole Ag Moree), Matt Langfield (CGS Namoi) and Byron Birch (B & W Moree)

The following is a transcript of the panel discussion on the use of Xtend Flex technology in rainfed cotton systems.

The project is in collaboration with CSD extending the wider use in paddock of Xtend Flex and learning from peers. How are we using the technology, what are the resistant weeds, grasses and broadleaves? We have been using glyphosate constantly and are seeing the pressure on that product, especially in dryland systems.

Before we had the Xtend Flex how were you managing your resistant weeds in cotton?

Angus Roberts: Residual herbicides were a big part of it and will continue to be. The key drivers for Xtend Flex are managing the four weeds that are hard to kill, Feathertop Rhodes, Barnyard grass, Milk thistle and Fleabane. Residual Herbicides need to go on early. Dual Gold, Valor in July/August. Before Xtend Flex if we had a blowout we had to push rates pre-plant to clean up big Milk thistle and double knock with Paraquat which elevated our risk of damage.

Adding on to the fallow residual where do you see in the system is the most important spot to put it?

Sam Simons: Apply fallow residuals straight after harvest to get control of Milk thistle, Fleabane and the summer grass complex. Once we confirm the likely summer crop rotation, another residual is typically applied in July-August. There has been a greater distribution of weeds like annual ryegrass through the region as well as both summer grass and broadleaf weed widespread tolerance and some confirmed resistance to Glyphosate; even 24d in some instances. Furthermore, some species such as Feathertop are only dormant for a month or two each year and starts coming up in August whereas other weeds such as Milk thistle, Fleabane are germinating all year round.

For years now summer grasses have been pretty hard to control, in the cotton crop itself pre Xtend Flex what was your management to look after the hard to kill grasses like Windmill?

Matt Langfield: In crop options are pretty limited so we use residuals early and keep the summer fallow pretty clean so the residuals don't have to carry as much weed burden. You were limited to Group A's and Glyphosate whereas Xtend Flex opens up a double knock strategy with Glufosinate.

What are the most challenging broadleaf weeds?

Byron Birch: Broadleaf weed control struggled with Fleabane around Bellata especially when planting cotton straight after a flood. You can only use Glyphosate out of the plane. Fleabane has been a battle and has been coming through the residuals.

What have you trialled in using Dicamba?

Sam Simons: Dicamba has been useful where residuals haven't gone out and been used on high loads of Fleabane, Peach vine and Milk thistle pre plant, then being able to double knock with residuals and Paraquat before the cotton emerges. On irrigation, in challenging situations roundup is used and Haloxypol and Glufosinate as a double knock.

On the harder to kill weeds in crop like Fleabane and Sour thistle are you finding Dicamba robust enough or do we need to come back with Biflufenox in the crop?

Sam Simons: In crop for Fleabane and Milk thistle, Dicamba is not enough and need to use Biflufenox. The reason for doing so much residual spraying is because of Glyphosate resistance. We are seeing Milk thistle coming through 4L of 2,4-D and it is getting uncontrollable. You have to have as many options as possible when you are relying on chemicals.

In the dryland space do you see the potential for more targeted approaches with these chemicals and use optical sprayers with this tech?

Sam Simons: More targeted approach being used with higher rates targeting weeds.

How have you found Glufosinate in dryland crops in high rainfall and low humidity?

Sam Simons: In some instances, control was not 100% and the weed was starting to recover but it kept it at bay and reduced seed set. Glufosinate works best in high humidity, so can expect variable efficacy pending conditions at the time of application. There appear to be limited crop phyto affects but they are not yield limiting and the crop often recovers okay.

How does Xtend Flex fit into your broader cropping rotation eg integration, seasonal timing. Do you see a reduction in the use of fallow residuals or do you still keep that as a tool in your kit?

Angus Roberts: Fallow residuals need to remain at all times, As otherwise we are adding too much pressure onto the new tools we have received. Winter fallow leading into summer crop can be neglected and having that residual coverage stops the seed bank spreading to other paddocks. We can start using the optical sprayer in-crop to help us and limit costs when more people use it which will allow better overall control of problem weeds in the system.

Do you see some space for your fallow management prior with using Dicamba in front as an advantage?

Angus Roberts: Being able to use dicamba in front is big advantage to get some hormone activity in paddock without having the risk of plants not coming up or seeing any stunting

We will be fully Xtend Flex in the next few years. Does that give the option when you are managing the summer fallow without cotton, we can start to use Dicamba?

Angus Roberts: Not currently a well-used herbicide but is starting to be because of the Xtend Flex. Paraquat alone might not be able to be used and Glufosinate can give that edge to control those weeds near the cotton it is going to help the whole system. If it is bringing us out of the cotton phase with a cleaner fallow it is setting up the whole system better.

What were your learnings from using Xtend Flex technology for the first time?

Byron Birch: You can use Dicamba in fallow all summer with no restrictions. In the fallows around a cotton crop we will do MCPA and then when the wind changes back towards the cotton we change to back to Dicamba. Dicamba is a lot of more expensive (double the price of MCPA) and that leads on to spraying in-crop. We haven't used Glufosinate in crop as yet but have done some trials to see if it makes a difference. If the operator is quick enough to spray the weeds while they are small using roundup and Dicamba plus the crop competition is generally enough after rain. We haven't had too many issues because it's always been a cooler period in the months before Christmas. We take the learnings from the soybeans in America and use the high quality roundups in the fallows with Dicamba, so we don't create the acid vapour. It can drift easily when the ground gets to 50 or 60 degrees. We try and spray in high stubbles where ground temperature is not too high.

How are growers adopting the technology? Is there enough training through industry?

Byron Birch: Growers call and ask if there is a good time to spray. Generally, if you spray quickly after rain, days are cooler and more humid which match the restrictions.

What extension and activities has helped you growers through this process of adopting Xtend Flex technology?

Matt Langfield: Xtend Flex training by Bayer was valuable. Craig Day's sessions give good advice and tips for spray set ups and conditions like water rates.

Mitch Cuell: Craig Day really knows his stuff and those workshops are worth their weight in gold. The sessions give everything from nozzle selection and boom pressure and they really open your eyes to the use of the tech.

Who has used the Xtend Flex technology and what was your experience?

Audience: We have used a little bit through the cameras, and it works well. The conditions are really challenging for dryland growers, and the timing is not quite right. That said it is still a useful product.

What was your experience using the tech in controlling Sour thistle and Fleabane?

Audience: This season it was more difficult to get a window where we had the humidity to get a really effective job from the Glufosinate. It did enough but took longer than we expected to get an effective kill. We did have a lot of resistance and Fleabane in our crops. We definitely saw benefits even though it wasn't as good as the previous year. The previous season we used a lot of optical spraying for really hard to kill grasses, Milk thistle and it was amazing. I was really sceptical going in with the optical sprayer but came out convinced that it worked. It isn't a 100% job so if you aren't looking to get 100% you would be happy with the job but isolated weeds can be difficult. We played around with covering the camera in the row so you can miss a few in-row weeds but we were really happy with the optical sprayers with the ideal conditions. I wouldn't try an optical sprayer with the low humidity we had this season.

What are your closing comments?

Byron Birch: Xtend Cotton is treated the same as any other cotton crop but now have an extra tool to take out Fleabane and Peach vine. Will use Glufosinate at some stage with cameras but it's far more expensive.

Matt Langfield: Start with a clean fallow, work hard with the residuals and use the Xtend Flex traits to mop up any survivors.

Sam Simons: Xtend Flex is a tool we have, but the general strategy won't change much for us. I encourage everyone to try a bit every year and learn in a range of scenarios, whether it be as a blanket spray or optically in-crop for targeted weed escapes.

Angus Roberts: Xtend Flex gives the opportunity, compared to sorghum and summer fallow sometimes, relatively clean. We are getting a couple of extra tools for the box and we are getting a double knock in crop allowing us to come out of cotton with no grass escapes. If we can use Glufosinate optically to cut costs we can set up the whole system for a win.

Mitch Cuell: I'm looking forward to using the tech sustainably and it will go a long way to controlling hard to control weeds.

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DCRA Member Newsletter



A productive year!

This year, DCRA has re-positioned itself to be a key grass-roots partner with industry and R&D organisations.

To date this year, we have provided support to four research projects with Sydney University, CSD, NSW DPI and the University of Southern Queensland.

Most of these project ideas come from the ongoing consultation work DCRA does for our members.

We completed the CRDC funded project 'Building profitable farming systems for the future through increasing soil organic carbon and optimising water use efficiency in a changing climate' project, with some positive outcomes and learnings for rainfed cotton growers.

DCRA will now provide ideas for the next generation of R&D products to add value to the learnings, provide input to the delivery of key R&D projects and continue to collaborate with industry to deliver the information our members need.

Research Forum, 26 June 2025, Narrabri

Once again DCRA partnered with CottonInfo and Cotton Seed Distributors (CSD) to host a successful Research Forum in Narrabri for rainfed cotton growers.

The response was terrific with over 80 people attending.

It was a great example of the partnerships that have been built in the rainfed cotton

space for positive collaborations. The event was supported by Outlook Ag, B&W Rural Moree, AMPS Moree, Cotton Seed Distributors and Poole Ag Moree.

DCRA acknowledge the time commitment to attend by **Adam Kay**, CEO of Cotton Australia to discuss some of the key issues raised with industry regarding the privacy rules around the sharing of information.



Image: Adam Kay, CEO of Cotton Australia.

Soil carbon project potential and measuring agronomic benefits

Jon Welsh, Ag Econ

Consultation in the past 12 months indicated our members are interested in the concept of soil carbon and the relevance to their farm business.

DCRA, with the financial support of the Cotton Research and Development Corporation (CRDC) has completed a project exploring the concept of how soil carbon can

benefit a rainfed cropping system.

We engaged AgEcon to undertake the work for us and **Jon Welsh** presented the findings at the forum.

Jon's work focused on the economic and agronomic viability of carbon-focused rotations in dryland cotton systems, using real farm business inputs.

In brief

- 3 different rotations showed positive financial results when switching from baseline practices to carbon-focused rotations - better long-term returns, not just for the environment but for your bottom line too.
- With the inclusion of stored carbon in non-cropped areas, each farm business was either carbon neutral or actually absorbing more carbon than it emitted.
- Financial outcomes were most sensitive to long-term yield increases, moderately sensitive to soil carbon sequestration, and less affected by discount rate or ACCU price changes
- Will you go broke if you change to carbon farming rotation: No, but if you chose an extreme approach like the Millet/Cotton Rotation examined in this project then you would expect lower returns.
- Participating in an Emissions Reduction Fund (ERF) soil carbon project might sound promising but it can be costly to get started and maintain and financial returns are less predictable.
- Boosting soil carbon levels can lead to healthier soils, better yields and a more profitable farming system overall.
- Returns are highly sensitive to yield increases over a 10-year analysis
- Organic and manure-based fertilisers only produce about 33% less Scope 3 emissions compared to synthetic options.
- Maintaining vegetation in non-cropped areas can offset emissions from cropping.

The reports can be requested from [DCRA](#).

The vidcast of the presentation can be watched at: https://youtu.be/zeWPtggmQ_c

Strip Till Nutrition

Tim Weaver, University of Sydney

The CRDC project also germinated an idea on how strip-till practices can make a real difference in dryland systems - especially when it comes to improving nutrient placement and uptake.

Tim's work focused on how strip-till practices can make a real difference in dryland systems—especially when it comes to improving nutrient placement and uptake.

In brief

- Deep P and K under winter crops saw root proliferation at depth to access more nutrients, carbon and soil water and correlated with higher yields.
- Greater numbers of roots at depth where there was a deep P band.
- Recent research identified potassium as an emerging yield constraint in dryland grains.
- Around 13-14kg P/ha is exported from fields in seed, an average of 13.44 kg P/ha are being applied to meet demand on surface applied P and there can be losses in availability.
- The Strip Till Experiment at PBI will have sub soil placement of MOP, MAP, gypsum and pelletised manure under cotton. It will run for 3 years and follow the legacy of treatments in following crops. It will include measurements of yield and fibre quality, legacy crop yields, quality and more!

The vidcast of the presentation can be watched at: <https://youtu.be/8Y7SHH24mTw>

Xtend Flex technology – how is it being used?

Xtend Flex and how the new technology is being used on-farm is a hot topic.

DCRA are very lucky to have a number of agronomists involved in our Executive Committee. This has allowed us to provide input into a number of projects based on the insights from their work in rain fed cotton systems.



Image: Byron Birch (B&W Rural), Matt Langfield (CGS), Sam Simons (Poole Ag), Angus Roberts (AMPS) and Mitch Cuell (Outlook Ag).

We find that panel sessions are an effective way of initiating discussion around the topic and have input from the audience as well.

A panel of agronomists, expertly guided by **Mitch Cuell** of Outlook Ag, provided their experiences with Xtend Flex and how they use it effectively with their clients.

The closing comments from each agronomist included the following:

Byron Birch (B&W Rural Moree): Xtend Cotton is treaded the same as any other cotton crop but now have an extra tool to take out Fleabane and Peach vine. Will use Glufosinate at some stage with cameras but far more expensive.

Matt Langfield (CGS): Start with a clean fallow, work hard with the residuals and use the Xtend Flex traits to mop up any survivors.

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come out of cotton with no grass escapes. If we can use Glufosinate optically to cut costs we can set up the whole system for a win.

Mitch Cuell (Outlook Ag, Narrabri): I'm looking forward to using the tech sustainably and it will go a long way to controlling hard to control weeds.

A transcript of the full discussion is available attached.

Dryland cotton recap & variety trial overview

The day included a presentation by **Natalie Aquilina** and **Stuart McFadyen** of CSD on the season that was and their insights from their trial work.

There is so much invested into furthering our knowledge of cotton in a rainfed system every season.

Natalie Aquilina and Stuart McFadyen of CSD provided an overview of the results from their trials in the last growing season.

In brief

- All varieties are delivering **similar yields**.
- **BG3 Xtend Flex varieties** perform as well as BG3 Roundup Ready Flex.
- **Choosing the right variety** and understanding its growth habit helps match crop to conditions e.g. soil constraints.
- We can't control the **season**, but we can manage for it.

The vidcast can be found at:
<https://youtu.be/xEZzL2QCU2U>

Consultation

DCRA, and our partners, are committed to continue the consultation component of our work.

Bob Ford of CottonInfo has invested his time into taking this function forward and setting up a framework for it to continue in a consistent way.

Bob stepped the audience through an ideas generation process to identify emerging



Image: Bob Ford (CottonInfo) stepping the audience through an ideas generating process.

issues and knowledge gaps across the rainfed sector.



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The audience provided a number of ideas on the day but you can continue to provide your ideas and prioritise other ideas, into the future, according to your own experience.

Our partners

DCRA couldn't function without the time inputs from our executive committee, the support of our corporate member organisations and the wider cotton industry.

This is what allows us to collaborate effectively to deliver positive outcomes for our members and the rainfed industry.

For their work in supporting the delivery of this event, special thanks goes to:

- **Janelle Montgomery, Bob Ford** and **Greg Bramley** (CottonInfo)
- **Mitch Cuell** (Outlook Ag)
- **Natalie Aquilina** and **Stuart McFadyen** (CSD)
- **Byron Birch** (B&W Rural Moree)
- **Angus Roberts** (AMPS Moree)
- **Sam Simons** (Poole Ag), and
- **Matt Langfield** (Cotton Grower Service)

Thank you to **AMPS Moree** for sponsoring the refreshments following the presentations.