# GRDC PODCAST TRANSCRIPT

**2023 Emerging Leader Award for the Northern Region – Mathew Dunn**

[00:00:05] **Intro** This is a GRDC podcast.

[00:00:12] **Graeme Sandral** What we hope to encourage is young scientists that can understand the science part of what they're investigating and marry it with practical outcomes that have an impact on-farm and encourage that bringing together of the science and the practical impact.

[00:00:31] **Sally Maguire** Hello, I'm Sally Maguire and that's GRDC Grower Relations Manager Graeme Sandral, speaking about GRDC's Emerging Leader award for the Northern Region in 2023, which was taken home by established research agronomist Mathew Dunn. Mathew has been working as part of a farming systems research team that is looking at identifying agronomic and management factors that drive profit and optimise returns from a long-term, whole system approach.

[00:01:05] **Graeme Sandral** Mat is doing that in a unique way through the farming systems work, and it's providing insights to growers about how crop sequences are making profits relative to other crop sequences, what the legacy effects are in terms of both nitrogen, crown rot disease carry-over. So, we're trying to encourage a whole new and younger generation of people to see what impacts they can have for their own career, but also for growers and for science.

[00:01:36] **Sally Maguire** Mathew works for the New South Wales Department of Primary Industries. And as well as recognising his research, the Emerging Leader Award also carries a cash scholarship of $15,000 to support professional development and the recipient's future contribution to the grains industry.

[00:01:54] **Graeme Sandral** And what we're hoping that Mat will be able to use that for is to further his own education. And that might be to become more informative about the area he's studying in more detail and then bring that knowledge back so that grain growers can potentially benefit that through future investments or through the work that is ongoing with GRDC and farming systems work.

[00:02:15] **Sally Maguire** I'm now joined by award recipient Mathew Dunn. Mathew, firstly, congratulations. And can you start off by please telling us a little bit more about the research that you've been undertaking?

[00:02:26] **Mathew Dunn** So for the last few years I've been working on a farming systems project. This was quite a large project; it involves quite a few partners. So obviously my employer, New South Wales DPI, as well as CSIRO and GRDC, and the project itself is led by John Kirkegaard of CSIRO. I have a fairly large component within that project looking after three of the four field experiment sites.

[00:02:50] **Sally Maguire** Okay, so what do you do when you say field experiment sites? So, what are you actually doing?

[00:02:55] **Mathew Dunn** The project sort of has a modelling and a field experiment component. In the field experiment side of things, we're really looking at examining our cropping sequences, overlaid with some other management factors that can be pulled. So, things like what happens when you include more diverse crops, legume crops in the cropping sequences? What happens when you change the nitrogen strategy within those cropping sequences? And what happens when you include things like dual purpose cropping, early sown graze crops, and aspects like that?

[00:03:23] **Sally Maguire** Okay. So, I guess then in that way, what does happen? What has your data revealed to you?

[00:03:28] **Mathew Dunn** So, the project's been running for quite a few years now and we're starting to get a reasonable number of conclusions being drawn out. Some of the conclusions are driven by the seasons we've experienced. We have had two fairly dry years in 2018, 2019, followed by three quite wet years across all of our four field experiment sites. But what we're starting to find is that diversity in the system, so when you have a legume crop within your system, it has potential to provide a number of benefits to that system. And depending on the season, those benefits can be quite large. And when you look at that across cropping sequences over time, often our sequences with the legume, our diverse sequences, are performing as well as what we call our baseline sequences, so ones that don't have a legume, things like our canola, wheat, barley sequence. So, the research itself is really industry-focused and really looking to answer those questions that growers come to us with in terms of how can they manipulate their system to make more money? So again, some of those drivers were the sequence itself and the inclusion of different crop types like legumes, but also the nitrogen strategy interaction. Growers have come to us and said that they've included legumes in their system, and they've seen changes. But what our data sets are bringing to the picture is quantifying those changes. Using scientific methods, being able to actually say, well, these are the changes we're measuring in our field experiments at these different locations, and they're the sort of changes you could expect on-farm when you make these changes. Obviously, our research is quite isolated in some ways, and when we apply our findings to a whole farm situation, there are certainly some characteristics that need to be taken into account when scaling some of our results up.

[00:05:08] **Sally Maguire** Mathew, I understand your research has been rewarding in other ways. Tell me a little bit about that.

[00:05:13] **Mathew Dunn** So, the project team within the Southern Farming Systems Project is quite large and involves a number of very experienced, very skilled researchers. And I think having those people involved in the project brings so much background knowledge, so much industry knowledge to the project, which has really benefited me in terms of learning from them, which I do every day when talking to them. So, I think having those people involved and having them in the paddock, talking to them on a regular basis, catching up with them on VC's regularly has really allowed the project to stay relevant to industry while keeping that high quality level of science that we really need. The project's supported by New South Wales DPI, CSIRO and GRDC and it's really important for us to have GRDC on-board. The support they provide allows us to do really high-quality research across a number of environments and to a high level of detail. And it also means that we stay grounded. We make sure that the research we're conducting is industry relevant and is leading to outcomes that can benefit industry.

[00:06:14] **Sally Maguire** So I guess the obvious question is what next?

[00:06:17] **Mathew Dunn** So I'm certainly very interested in the farming systems research. I've been involved with that for a few years now and I'd certainly like to continue to be involved in that systems type research approach. I find that it has an aspect to it that is very industry-focused and we're always looking at what information growers need to make better decisions on their farms. And looking at that from a systems perspective I think is very powerful. So, I'd certainly like to continue working on systems research. I'm certainly interested in pursuing a PhD in the near future, I'm hopeful that that won't be too far away.

[00:06:57] **Sally Maguire** That was research agronomist Mathew Dunn, who is the recipient of GRDC's Emerging Leader Award for the Northern Region in 2023. And earlier I spoke to GRDC Northern Grower Relations Manager, Graeme Sandral. I'm Sally Maguire. This has been a GRDC podcast. Thanks for listening.