# GRDC VIDEO or PODCAST TRANSCRIPT

**Legume Leaders – Introduction: benefits and constraints to the adoption of grain legumes**

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

[00:00:12] **Shannon Beattie** A cohort of Legume Leaders has been established by the Grower Group Alliance in Western Australia, with investment from GRDC and the help of grower groups located from Yuna to Esperance. These leaders represent an experienced network of long-term WA growers who are strong advocates for grain legumes in their farming system. Hello there, I'm Shannon Beattie, and the Legume Leaders will be sharing their insights from a collective 140 years growing experience over a seven-part series, which will be released throughout 2024. In this introductory episode, we'll be discussing the benefits and constraints to adoption of grain legumes in the farming system, as well as the overall aims and outputs of the project. To do so, I'm joined by senior research scientist Mark Seymour from the Department of Primary Industries and Regional Development, as well as GGA project manager Daniel Kidd, who starts us off with an overview.

[00:01:02] **Daniel Kidd** It's an investment into closing the economy gap of grain legumes in WA, and it's a GRDC investment that runs for three years, three and a half years, from 2022 through to 25. And it's really a development and extension project that involves 13 grower groups and supported by DPIRD to really understand the yield gap problems that we have in WA with our grain legumes - they do pretty well in the east, but we do struggle a little bit in the west with some of our soil constraints and market access and commodity price issues. So, it's really just trying to identify those growers that are really making them fit in their rotation and how they're managing to really maximise those yields, and then how we can kind of raise the bar and get others up to that level so they can really make them a profitable part of their rotation because they really are going to add value to rotations. And we know that, we just need them to be profitable in the year that they grow.

[00:01:53] **Shannon Beattie** We are focusing on the future of grain legumes as part of this project, but it would be amiss of us I think not to look at the past a little bit. Mark, you've been working in this space for a fair few years. Can you tell us, I guess, a bit of the history of legumes in the WA growing system?

[00:02:11] **Mark Seymour** I guess Western Australia in particular is famous for the narrow leaf lupin, and so that was really a major starting point. There were some other pulses growing historically since early settlers, but broadacre really was lupins that took off, and we're main place in the world that grows narrow leaf lupins. And at one point we did have a million hectares of narrow leaf lupins, and I guess that was really before the rise of continuous cropping in a major way, and certainly before the rise of canola as a very robust competitor in that space. And we've seen a decline, I guess, in lupin area. We're now hovering around the 300,000 hectares level, and it's sort of contracted to the areas where it really grows quite well and the farmers reliable fit. And when less people do it, there's a good margin in that side of things. I think we'd like to see more people growing lupins, but those that do do quite well. I guess where we're coming from in the main in this project, although there is a lupin component, is the other legumes. So, pulses really, so field peas, faba beans, chickpeas, lentils and perhaps some vetch sort of fits in there but doesn't. Ones that grow on non-lupin soil types and people do grow them throughout the State. They're very diverse in their adaptation to soil types and environments, so they're not like canola and cereals that can be grown everywhere and doesn't work everywhere for everyone. But for some people, they're the basis of their farming system, and they really form a very good basis for people who can successfully grow pulses and lupins. I guess this project is really to help other people who have either dismissed them or used them in the past and fail, to have another look at them, build up some experience with people to help them with how to grow them, to get people to have another look and see if it fits into their system.

[00:03:59] **Shannon Beattie** Daniel, how does this project actually work? You mentioned that there were a bunch of different grower groups involved, but what's the actual project set up? And then how's it all running?

[00:04:09] **Daniel Kidd** Yeah. So, like I said, there's 13 grower groups involved and they span from Yuna in the north through to Esperance on the south coast and everywhere in between. So, there's a lot of different soul types, different rainfall zones that we're targeting. Different legumes are adapted to each of those kinds of zones, so it really allows us to explore the niche environments for all those different pulses that Mark listed off before. But it's also trying to challenge growers to try something a little bit different and challenging their thought process around the profitability of pulses in their systems, because we know there's all those rotational benefits that come with it, but have they really valued that in the rotation? And as the price of nitrogen goes up, at what point the legumes get a look in back in the rotation and at what point are they profitable? So, to do that, the 13 grower groups are running either demonstration trials or small pilot trials around the State just to kind of identify, I suppose, what is the thing that's really limiting adoption in each of their areas, because they all have different reasons for why pulses are not stacking up in their own systems. It's really a grower led initiative, so they get to identify what's limiting adoption in our area? Let's investigate that in a trial or demonstration plot, and let's investigate why that is, and let's see how the economics might be able to stack up. So, these could be around fertiliser application, other agronomic initiatives. Some are just looking at different species and how they stack up in certain years. You know, things like chickpeas can be very lucrative so long as you can get the yields. And even in 2023, lupins were profitable crop because people were getting really good yields. So, it's really yield driving the profitability. So that's how it's set up, and each of the demonstration sites or trials is hosted by our Legume Leaders. So, these are growers who have been successful and are passionate about growing pulses in their system. And like Mark said you know, they're a hallmark of their operation. You know, that really drive profitability in their system. So, we're looking at these guys to be a kind of peer-to-peer learning avenue for other growers. So, they've made themselves available to be contacted, and growers can pick their brains as to how they've managed to trial a new crop, or how they're tweaking the agronomic package of their current crop to make them profitable in their system.

[00:06:13] **Shannon Beattie** I know Mark did mention them, but can you tell us what pulses and legumes are actually included as part of this project? So, when we're talking about our Legume Leaders and the different pulses and crops, we know what we're talking about.

[00:06:25] **Daniel Kidd** In addition to lupins, I mean, lupins are obviously highly adapted, and a lot of groups have looked at that, particularly in the north where they're well adapt to the sandplain. We've also looking at chickpeas, field peas, lentils, faba beans and then vetch has come in as well, because it is grown as a forage but then some people are growing it as a seed source for on-farm use, but also selling it as well. So, vetch is coming in typically as a brown manure treatment. So, looking at all those crops and we know that traditionally things like field peas are being quite successful across the State, in addition to lupins. Faba beans are making a bit of an impact at the moment, and we know that chickpeas can be lucrative if you can get the yields. Depending on the environment, you can do well out of all of these, and there are certain farmers who do very well out of these and have them in their farming system and there’s others who have tried it, and then will never go back for certain reasons, so we're just asking those to maybe revisit it. There have been improvements to agronomy or market price, other drivers might have changed to help them maybe consider it in the rotation.

[00:07:21] **Shannon Beattie** Mark, we've mentioned both soil and yield, economics issues as constraints or reasons for lack of adoption, I guess, of legumes in the system. Are there any other, reasons why growers might hesitate to adopt legumes into their farming system that we should know about?

[00:07:39] **Mark Seymour** A big one for WA growers, in particular is the marketing and access for delivery points and so on. Best example is probably faba beans. I think current varieties and agronomy is pretty robust I think, and people have been having success growing them, particularly if you sow them in April, we have sort of a rule to say beans in April, you usually end up with a reasonable crop. But it's more the where am I going to sell them and where can I deliver them to side of things. That's an added layer of complexity and issues for Western Australia compared to the Eastern States where they have more livestock in Australia uses. So, we're more reliant on exporting, and there's risks for the marketers with exporting faba beans around the world. Be it into Egypt with currency or gaining access to other markets just to some government restrictions. So, they're probably worth $450 to $500 a tonne now and going forward. But where can you deliver them to easily and readily? So, I'm lucky, I live in Esperance. We have some capacity for that to happen due to individuals getting involved, but in other parts of the state it becomes a problem. So, you get out to the Lakes and the Great Southern, there are lots of people that would love to grow beans, but they're a little bit hesitant because of that marketing. So that's again another layer, that's probably the worst scenario that I've described in terms of complexity. But all of the pulses have that layer of an added thing that you have to do in terms of delivering and marketing. So often it's sending it to Perth and that may not suit everyone. Often the people who do it say it's worthwhile. Again, currently chickpeas are worth $800 a tonne or $700 to $800 a tonne, and that's probably, some forecasts that I've heard today was that that's probably going to hang in there. So that's quite a good change from a few years ago. But those dollars, it does make it very competitive, particularly from the Great Eastern Highway north where they like the warmth a bit better. So, people switch from growing field peas to lentils in my area and, you know now getting $900 a tonne sort of thing this year for lentils are those that stuck with it have done really well. One of those things you can never grow it, you'll never see the $900 a tonne. But it is another layer. Those people that grow lentils have to store it on-farm, trickle it out during the year. And again, you look at all of that, what I've just described compared to canola and wheat, take it CBH, job done, someone else's problem to transport it, manage it, so it doesn't help.

[00:10:06] **Shannon Beattie** Potential profit aside, Mark $900 a tonne, sounds really nice. Great benefits to adopting legumes into the farming system. But there are other benefits than just money. Can you take us through, I guess, what some of the other key benefits are that growers might not be aware of.

[00:10:24] **Mark Seymour** Well, I guess for a lot of the pulses, they don't build up nematodes as much as say canola does, so there's that side of the thing. So, if you're in a tight cereal, canola rotation in areas that are prone to nematodes. So, it's principally the south of the state, and particularly the Great Southern, Albany port zone was seeing a build-up of those diseases because they've got a very tight rotation. So, putting a pasture or legume or lupin or serradella or just about all of the pulses that I've mentioned. Probably chickpeas are not quite as good, they're like growing wheat, but that will help reduce your nematodes. And for some people, that can make a big difference. There's that side of things. I mean, we don't tend to have a lot of take-all anymore, which is a bad root disease, crown rot in the eastern Wheatbelt and the northern Wheatbelt, again, can build up in a cereal heavy rotation. I mean, you can use canola to help reduce that, but legumes will give you that added extra boost if you want. And just from a soil health point of view, I think most farmers, whenever they surveyed, say they want a legume in their rotation. They know what it does intrinsically for their soil in terms of the soil health, soil biology, keeping the nitrogen cycling through your system, certainly of benefit. And I guess what everyone comes back to, I want to do that, but make it pay. I don't want to lose money in the year that I do it. And that's really where I spend a lot of my time and I know Daniel does too, thinking about how can we get to that level where everyone has an option, that they can choose to grow these legumes when they want or when it suits, or when the marketing is telling you to do it.

[00:11:57] **Shannon Beattie** And Daniel, to wrap us up for this episode, can you tell us what the key outputs of this project are going to be? I know that we've said that, you know, we're going to help growers learn how they can maybe grow legumes in the system, but that's pretty vague. So, what are the key outputs actually going to be?

[00:12:15] **Daniel Kidd** We're really just trying to demonstrate agronomic best practice for pulses in WA. So, there's already some pretty robust agronomic packages out there, but there are improvements that are occurring. I mean, this year we had commercially available acid tolerant rhizobia which has been proven to work, and it really expands the soil types that we can put some of these pulses into. So that's an ergonomic advancement that really opens up a lot more areas in WA for pulses. So, it's really trying to show these things and demonstrate these things on-farm to show that we can have pulses that are more profitable. We also had a grain legume survey, which we did, which we wanted to show how people are currently using pulses in the system and what the issues are, and some of the things that Mark suggested around commodity price and market access, but also things like harvestability and weed issues are a problem as well. So, it's trying to demonstrate how we can show improvements to that. So, it's really the demonstration side of it is really important. And the extension of the positive aspects of pulses in the system. So, they're the main things, but it's also the economic side of it. So, we're also trying to really put some gross margin analysis around some of these pulse experiments and demonstrations that we're doing. So, it can kind of really show well, if you do grow a pulse, you know, what is the economic BOSC or opportunity costs compared to a canola or wheat? You know, just having that rotation, how much is it costing you? And do you make that up in the subsequent year because of the nitrogen or disease break and things like that. So, we're really trying to put some economics around it, and that's the whole economic yield gap component of this project. So, working with DPIRD to really get some economics on that aspect and in some sense, you know, 2022 really good year. Even things like lupins yielded really well and stacked up almost as well as canola. Whereas in, you know, the following year, 23, not so good. The pulses struggled a little bit more, and it's hard to compete with wheat. So, it's really looking at kind of multi-year economic analysis where we can really understand how pulses will stack up. But, you know, again, it's coming back to that year of production. If they don't stack up in that year, then that might not be adopted. So that's what we're trying to prove, put some economics around it to make that decision a little bit easier. And looking to the future, you know, we've got some possibilities moving to human consumption. So, a lot of these are in the plant protein market and including lupins even being might be adopted that area as well, there's a lot of work towards that. So, you know, there might be a price premium for these if we can get more growers growing them and a better market in WA. And it's a bit of chicken and the egg, you know, if growers are not growing it then there might not be a market created for that, whereas there's no market created, and the growers are not growing it. So, we need to show that it can be done, and it can be profitable and there's opportunities for growth is going forward.

[00:14:48] **Mark Seymour** I can also probably chip in, Shannon, with another output from the project is really capacity building. You know, there aren't many people who spend a lot of time working on pulses. I mean, I've been lucky. I've been doing it for 30 odd years. But you look around the state, it's not mainstream activity. A lot of the people in the grower groups wouldn't be working on lupins or field peas, chickpeas, or lentils unless this project was around. They would be guided by their grower group, perhaps to work on canola, wheat, or the new aspects that are coming through in those mainstream crops. So, we are hopefully giving experience to younger people about the crops, they have to get involved in growing them, they have to be able to stand up in public and talk about them. And so, I think that is a real big outcome out of the project will be a little bit more experience with these crops across a wider range of people, people who work every day with farmers, and I think that's pretty useful too.

[00:15:44] **Shannon Beattie** Daniel, Mark, thank you both for joining me on the podcast, and I hope that everyone enjoys learning more about the Legume Leaders series.

[00:15:52] **Daniel Kidd** Thanks for your time, Shannon.

[00:15:59] **Shannon Beattie** That was Daniel Kidd from GGA and Mark Seymour from DPIRD, giving us an introduction to the Legume Leaders which is an extension of a GRDC investment titled 'Closing the economic yield gap of grain legumes in WA'. This was the first episode of a seven-part series which will be released throughout 2024. Tune in for future episodes where the Legume Leaders associated with the project give their take on how grain legumes form a profitable slice of the farming system. Bios on the Legume Leaders and their contact details can be found on the GAA website at gga.org.au. More information on this topic can also be found in the description box of this podcast or online at grdc.com.au. I'm Shannon Beattie and this has been a GRDC podcast. Thanks for listening.