# GRDC PODCAST TRANSCRIPT

**Grower behavioural insights and motivations into spraying**

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

[00:00:12] **Prue Adams** So, you've decided to get the spray boom out. Why now? Why today? And do you tell your neighbours? Hello there, I'm Prue Adams and this is something a little different; the psychology behind when, where, and why you get into your spraying practice. And can you be doing it better to prevent spray drift and off-target damage to other crops or the environment more broadly? A GRDC investment focussed on grower decision-making for summer spraying has involved an environmental psychologist and a survey of growers in the mid-north of South Australia. First up is psychologist and report lead Dr Lynette McLeod. Speaking to me from her workplace in Christchurch, New Zealand.

[00:00:56] **Dr Lynette McLeod** The aim of the study was to collect information about what's currently happening on the ground, what practices growers are currently performing, and to try and get an understanding of why they're doing those sorts of behaviours. It was an anonymous online questionnaire and that's a good tool for collecting this type of information, so people can answer honestly and we sort of ask the questions in a non-sensitive nature so people can feel that, being anonymous, that they can answer truthfully. But also, you know, we want them to be able to just tell us what's happening, to be honest about it; what they're doing, what they intend to do, and why they're doing it.

[00:01:37] **Prue Adams** What sort of questions were you asking? Are there any specifics? And what sort of answers where you getting from those questions?

[00:01:43] **Dr Lynette McLeod** We're asking, sort of, very general questions at first about, you know, the size of their property, the types of crops. And then we sort of drilled down into different behaviours associated with spraying. So there's those sort of, behaviours that you do before a spraying event or at the start of a season where you discuss what you're going to be doing with your advisor, maybe you have a chat to the neighbour, what they're doing and what you're planning to do. All the chemical training sort of stuff. And then there's your behaviours during the spraying event. So, checking the weather conditions, setting up your equipment correctly, mixing your chemicals correctly, driving at the right speed and things like that. And then sort of after as well, whether you're recording what's happening in the spray event. So, we just ask questions around all those different behaviours and then drilling down into, what stops you driving at the recommended speed? Or, why do you sometimes spray when the wind might be a little bit too high and things like that?

[00:02:44] **Prue Adams** Factors that growers were most likely to push boundaries on were air temperature, first of all, you know, wind speed, driving speed, and product choice sort of, in that kind of order. Is that something that you would have expected?

[00:02:57] **Dr Lynette McLeod** I've sort of, done other research in this area as well, a few years ago, I was involved in a project with my colleague Don Hine, with some work funded by the Cotton Research and Development Corporation. And the type of behaviour, performance, and barriers that we got out of that were very similar to what we got out of here, so there was nothing really unexpected. When we looked at the barriers towards, say, driving speed, it comes down to the grower's perception of time and getting the job done effectively. So, that might mean that they drive a bit faster to get the job done.

[00:03:34] **Prue Adams** Interestingly, the factors that they were least likely, or never willing to push boundaries on were things like having an unqualified operator. It was 100 per cent, which I thought was incredible, that that was so high. But, even in version 100 per cent, night spraying was quite high.

[00:03:51] **Dr Lynette McLeod** That's probably credit to the amount of work that's been done in this area so far. The educational programs and the technologies that are available so that the farmers are aware of the importance of these issues, they're able to access the technologies. I think in the area, that there's these local weather stations that people can tap into and go, "Okay, what's the weather like in my part of the world?". So, it's good to see that and it's encouraging from a behaviour change point of view. So, now we have to look at some of these other behaviours that maybe they're not being quite as good with and try and get the education and the sort of, awareness up so that people start thinking about it.

[00:04:32] **Prue Adams** So, this is all about changing human behaviour. So, how difficult is that?

[00:04:38] **Dr Lynette McLeod** Changing human behaviour and sort of, maintaining new behaviours is pretty difficult and can be pretty complex. It's usually not a one-step process, you know, we go through changes of change. So, first of all, you have to be aware that there's a problem and aware of behaviours that you can perform to sort of, alleviate that problem and then you sort of, go into the next stage; "Okay, is this something that I want to do?" If yes or no and then you go, "Okay, I think it's something that I should be doing." Then, "How do I do it?". In all these stages, there's probably factors that are affecting people's decisions about whether they're going to perform the behaviour or not. And also, it's interesting to look at how humans make decisions. There's a huge amount of research in this area. We all like to think that every decision that we're making is rational and logical but, the sheer amount of information and decisions that are required in our daily lives, we rely on a lot of mental shortcuts, heuristics, our habits. So, at any point, our decision making, it's not going to be only influenced by, you know, our good intentions and our plans that we've sort of, deliberately thought about and made, and our beliefs and our values, those sort of, longer-term motives. But, it's also influenced in the short term by, the environment, that can be the physical environment or the social environment, and our immediate wants and needs at that point in time, and our emotional state, and our impulses. So, it's a very complex sort of situation and then we come in on top of that to try and get people to change it. So, yes, it's not as easy as you would think.

[00:06:22] **Prue Adams** That does not sound easy at all, I have to say. So how do you go about actually getting people to change that?

[00:06:29] **Dr Lynette McLeod** The four key principles around there. You know, and the first is to actually focus on the behaviour, the desired behaviour that you want people to do or, the undesired behaviour that you want to stop them doing. And then, you really need to understand what are those factors that are influencing people's behaviours. And the best way to do that is to actually, ask the people. And that's where this survey and this report comes in. We were out there, we were trying to understand what people were doing and why they were doing it. And then you can sort of start thinking about, well, okay, how can we start changing that?

[00:07:03] **Prue Adams** It really comes down to, you can't change what you don't acknowledge in the first place as well, isn't it?

[00:07:08] **Dr Lynette McLeod** That's correct, yeah, yeah. The ideas that also come out of clinical psychology, you know, being mindful, bringing the sort of behaviours out of that subconscious, automatic, fast thinking sort of system into the more slow thinking. And then people can go, "Okay, I realise what I'm doing". And that's the first step for them to be, then be able to change their behaviour.

[00:07:30] **Prue Adams** One of the interesting aspects I thought was the growers, only about a third of them, would speak to their neighbours about spraying.

[00:07:38] **Dr Lynette McLeod** What we found from our report when we asked them, "Okay, well there's only a small number actually discussing your spray plans with your neighbours or not. You know, why is this the case?" And I think, first of all, the big barrier was, "Well, we don't have to we don't need to, I'm responsible, you know anyway, so it's really none of their business what we're doing" and, you know, or, "I just take a quick look and see what they're growing and if they're growing something, you know, then I adjust my behaviour accordingly". Another thing was time. In this day and age, we're all very time-poor. So, getting that time to actually contact your neighbours and have a chat, the situations aren't there where that would normally happen. And the availability of neighbours, there's a lot of neighbours that don't live on their property and whatever so, actually being able to do that. There was also privacy and an interesting one that was common that came, people saying, "Well, it wasn't the done thing." So there wasn't that culture, that sort of social culture that you actually talk to your neighbours, that loss of community, which, you know, was also interesting as well.

[00:08:42] **Prue Adams** So how does the message get out from here about how to change behaviours and mindset?

[00:08:47] **Dr Lynette McLeod** As I said, I've mentioned my research colleagues in this, Sandy Kimbar from the Hart Field site and the GRDC that are assisting with this project. So, I was brought on board in this project, I guess, to conduct this survey and to run the analysis with my expertise in this area. Now I hand these results over to Sandy and her team and she's going to use that information to be able to look at what priorities that they need to address in some workshops that are coming up for growers. And it also gives them an idea on how to approach some of those behaviours and the barriers behind those behaviours and the best way to design their communications around matters and sort of, the elements of that workshop.

[00:09:34] **Prue Adams** This is the ideal place to bring in Sandy Kimber, Executive Officer of the Hart Field site based in Clare, who participated in the study.

[00:09:44] **Sandy Kimber** When the GRDC first approached us about working on this project, we were really keen to be involved. Because we're based in the mid-north of South Australia, it's a beautiful and diverse region, but we've got a mix of broadacre cropping, livestock, and viticultural enterprises. So, looking at spray efficacy, product efficacy, and especially reducing spray drift or off-target damage is really important in our area, so we didn't hesitate.

[00:10:08] **Prue Adams** You needed to find out first, what the spray practices were of local growers and why they made those decisions. What did you find from the survey?

[00:10:16] **Sandy Kimber** So, we found that farmers that responded to the survey, and there were some advisors in there too, were really open and honest. So, in some of our marketing, we told people "Please don't tell us what we want to hear, tell us what you actually do" when we asked them about, what do they notice about what others do. And we had some really good responses there about the fact that most people are trying to do the right thing, most get things correct, majority of operators are excellent, which was really good and, that there were a couple of comments about, there were some practices that could be improved, but that it was always the minority. So that was really pleasing to hear too. I'm really keen to share with you one of my favourite questions from the survey, and that was "There's a paddock that needs spraying and you're desperate to get it done, which of the following factors are you willing to push boundaries on?" And by asking this question, it gave farmers the opportunity to kind of, challenge their own thinking in their own value systems and we found some really good responses there too. So, there were some things that all respondents weren't willing to push the boundaries on, and they included, using an unqualified operator and spraying in inversion conditions. And then there were some that they had more flexibility on or they were somewhat more willing to push boundaries on, which included things like air temperature and wind speed and then, to a lesser extent, driving speed and lesser extent, again, product choice. And so, that kind of helped inform where we go next with this project.

[00:11:42] **Prue Adams** And so, what do you think it is that stops growers from changing their behaviour and making the optimal decision, if you like?

[00:11:48] **Sandy Kimber** Yeah, so it's different for everyone, right? But I think some of the biggest factors include information overload and I don't just mean in relation to spray issues. So like, farmers are thinking about a whole range of really broad but important topics, whether it's variety section or making nitrogen decisions. There's a whole lot of stuff going on in their head and they manage it really, really well. But with information overload, sometimes you can just defer or revert back to sticking to what you know and so unless something really compelling changes your mind, sometimes that does become a default position. But in regards to spraying specifically, farmers are really weighing a whole range of constraints every time they spray and they have to draw a line somewhere. So, there are things like weather conditions or logistics around labour and machinery and travel, and not to mention the fact that spray timing is often really critical. So, when they see a window, it's really tempting to get the job done while they can.

[00:12:40] **Prue Adams** So we heard from Lynette that only about a third of growers speak with their neighbours about their plans and they can be difficult conversations, so how do you advise and help in that process?

[00:12:51] **Sandy Kimber** Well mostly, we find that people have pretty decent relationships with their neighbours, which is great. And having good relationships and open communication is really important, not just in relation to spray practices. So, there's a whole lot of other things we need to have good relationships with neighbours about. But inevitably there are times when a hard conversation might need to be had and so what we're hoping to do is in a workshop series we're running next year, we're going to spend a little bit of time helping farmers and advisors work out what to say and how to say it in a way that's more likely, probably, to keep relationships intact, but also to get the best results in terms of good, spray practices.

[00:13:28] **Prue Adams** And how else can growers get more information? Because I would imagine for a lot of growers, this might be fairly early stages of them understanding the psychology around an issue like this, which is what makes it so interesting, to be honest. So, where can they get more information?

[00:13:46] **Sandy Kimber** I agree. So, we find that our growers in this region are really open to change and they really embrace new and improved practices, which is not necessarily the issue because the vast majority of them are doing that so, we can fine-tune that and we can tweak it. But I reckon when people understand the reasons they make decisions, it actually gets easier to make a different one. So, this podcast is one of the first steps that we're taking. In the background, we're working on reviewing Lynette's full report, in the shorter term, along with GRDC, we're going to release some short-targeted information via social media to help support farmers with best practice during that summer spraying period and then, in early July next year, we're going to run three workshops in the Mid-North.

[00:14:33] **Prue Adams** The challenge for those workshops, now that we understand what is driving some of the behaviours, is to demonstrate how improvements can be achieved in a way that is actually beneficial to the grower and how they operate their business and ultimately, to motivate change.

[00:14:49] **Sandy Kimber** There'll be a range of topics covered in those workshops, we're hoping to have them as interactive as possible, there'll be some displays and demos and we're going to look at things like providing some planning and management strategies to work around spray constraints, some stuff on understanding labels, spray quality and water quality issues, nozzle selection, drive speed, boom height and of course, there'll be some stuff on weather. And I just want to stress that we're not going to overcomplicate this. We're going to give some real practical information about how to make a change, whether it's a small one or whether it's a larger one, and how to actually make that happen without overloading your brain.

[00:15:34] **Prue Adams** That was Sandy Kimber promising to provide valuable information, but not overloading your brain. And before her, environmental psychologist, Dr Lynette McLeod. This has been a GRDC podcast, I'm Prue Adams, thanks for listening.