# GRDC VIDEO or PODCAST TRANSCRIPT

**Carbendazim use and its alternatives**

[00:00:06] **Hilary Sims**  Hi there, I'm Hilary Sims. If you've grown lentils or faba beans, chances are you've kept on top of Ascochyta blight and Botrytis diseases with the help of Carbendazim. It's a broad spectrum fungicide used to control a range of diseases on pulses. But as a schedule seven chemical with restrictions on its use, there's growing uncertainty about Carbendazim maximum residue limits in some international markets. Agriculture Victoria's Dr Joshua Fanning, is leading a research team in this space, looking at effective alternative chemical options and the associated economics. And there's good news. We'll speak with him shortly. But first, here is GRDC's chemical regulation manager, Gordon Cumming to explain the current situation on Carbendazim use. Here's Gordon.

[00:01:01] **Gordon Cumming** Growers are very used to using the product and it fits into their disease management programs. However, there's been some movement in the international marketplace with some of the registrations around that product and that has some potential flow on impacts with regards to some of the market access or potential post-farmgate risks. And there's just generally quite a bit of confusion around the use of the product, what it can be used for, what it can't be used for. So we're just trying to get a very clear and succinct message for growers and also for the trade post-farmgate as to what they can be doing and what they really should not be doing with the product.

[00:01:42] **Hilary Sims** Gordon, what does the label say on how this chemical should be used?

[00:01:45] **Gordon Cumming** The current label claims or use patents, for that foliar fungicide disease management strategies in lentils and faba beans. And that's really where it needs to stay. I mean, the label is a legal document. We can only use products in the way that the label allows. So whilst there may be a bit of bush telegraph going on around other alternative uses for the product, they are clearly off label, illegal, will result in detectable residues in other grain commodities, which will significantly put our exports of those commodities at risk.

[00:02:18] **Hilary Sims** And on exports and the international market now. tThe EU has recently reviewed Carbendazim. Tell us about that.

[00:02:25] **Gordon Cumming** We're expecting them to finalise their decision very early next year. And in all likelihood, that will be to see the product de-registered and all the MRL's removed from the EU countries. And also, it's going before our codex, which is sort of an international standard of MRL's middle of this year. And again, our expectation is it will be removed from Codex. So it just really puts the spotlight on the use of it in Australia. It's still quite legal to use it in Australia for its registered use patents, but the window internationally is closing or becoming a lot more restricted. So people start looking at various things in the post-farmgate when this happens.

[00:03:05] **Hilary Sims** So in light of these developments, what considerations should pulse growers be making if they're planning to use Carbendazim in their program this year?

[00:03:13] **Gordon Cumming** I think it's always a good idea when this sort of thing is happening, that if growers have 1 or 2 marketers that they traditionally sell their pulse crops to have a chat to them, see what their take is about the risk and whether or not they would rather the products not to be used. And maybe, as a longer term strategy, starts thinking about fungicide programs which aren't reliant on Carbendazim. So whilst it's there this year, next year or the year after, who knows? So there's a lot of good research being done by the state pathology programs with GRDC investment, looking at alternative programs, there's a lot of knowledge there. So start digging that out and having a look at it and discussing with your advisers and your agronomists about alternative programs that you might need to consider going forward.

[00:04:03] **Hilary Sims** As Gordon just mentioned, there's significant research underway to provide growers with alternative chemical programs. Dr Joshua Fanning is research leader plant pathology at Agriculture Victoria, and he joins me now to share information on these alternative options and the economics of including them in an integrated disease management strategy. As Joshua explains, the research has a national focus.

[00:04:28] **Joshua Fanning** The national investment that we've got underway is looking at optimising integrated disease management strategies on Ascochyta blight and botrytis in lentils and faba beans. So when we're talking about botrytis, which we're talking about botrytis grey mould of lentil and chocolate spot of faba beans, and then we're looking at Ascochyta blight in both lentils and faba beans.

[00:04:50] **Hilary Sims** And Joshua, you're leading this project through Agriculture Victoria with GRDC investment. Who else is involved?

[00:04:57] **Joshua Fanning** We're running across South Australia, Victoria and New South Wales. So in South Australia we've got the South Australian Research and Development Institute. We've also got Trengove consulting working on the York Peninsula. We've got the University of Adelaide in statistical support. Then in Victoria we've got Agriculture Victoria as well as Field Applied Research Australia. And then in New South Wales we've got New South Wales Department of Primary Industries. So we're really covering off on the three states and those three major production areas for lentils and faba beans.

[00:05:30] **Hilary Sims** So what alternatives are there to Carbendazim?

[00:05:33] **Joshua Fanning** We've actually got quite a few. If you asked me a few years ago we had a lot less products available to us. I sort of classify them into three groups. We've got to have multi-site fungicides and they include Mancozeb, Metiram, Chlorothalonil. So they're preventative fungicides. And at the moment they're probably less effective than some of our single active chemistries or dual active chemistries. So single active chemistries include Carbendazim and Procymidone that are both registered. So Carbendazim is Group One. And Procymidone is Group two. Procymidone is currently on permit for beans at the moment, but GRDC are looking at doing some work around that to get it back on label. And then we've got our dual sites fungicides, so we've got Azoxystrobin + Tebuconazole, which is group 11 and three. We've got Azoxystrobin + Plus Cyproconazole - Group 11 and three also. And then we've got Bixafin + Prothioconazole which is Aviator XPro groups three and seven. And Fludioxonil + Pydiflumetofen which is Miravis Star groups 12 and seven. And they're all available on the APVMA website or manufacturers website.

[00:06:40] **Hilary Sims** And the economics behind these alternative chemistries is also a focus of the research. What's been done so far?

[00:06:47] **Joshua Fanning** So part of our research is looking at the economics. Each of these products is priced at a different price point depending on its efficacy, how hard it is to manufacture and how much it costs to develop that product while it's on patent. So we're looking at, if you apply these products, the different efficacies and timings, what are the economics behind those decisions? And we're doing that with these collaborators across seasons and across environments. So we get a much better appreciation of how we can use these products to best manage the disease, and not just to maximise grain yield, but it's also about maximising that profitability. So that's why we're overlaying that economics on that as well.

[00:07:26] **Hilary Sims** And when will this information be made available.

[00:07:28] **Joshua Fanning** So the economics we're looking at publishing soon and that will come out in GRDC updates over the next several years. The first year of the project was last year, and in good news for growers, we didn't really have disease as a significant concern last year due to the lack of spring rainfall, essentially.

[00:07:45] **Hilary Sims** Well, we know fungicide is just one aspect of an integrated disease management strategy. What are some of the other factors we should consider?

[00:07:53] **Joshua Fanning** Fungicides should be our last option for disease management. Yes, it's disappointing if we're told we can't use a product, whatever product that may be. But ultimately a holistic or integrated disease management approach is the best way of controlling diseases and maximising profitability. So what does that mean in real terms? Essentially, we start with a clean paddock or sowing clean seed. So we've got our crop rotations to start off with. We're looking at a one in three, one in four year break, preferably depending on your environment. We're not sowing lentils, wheat, lentils and having disease in lentils or doing lentil lentil wheat. So if you start the season with clean seed, then we're not putting disease into that paddock from the start because we've obviously rotated our crops, so we haven't got the stubble. These diseases carryover in stubble. Then we're choosing resistant varieties. So we're avoiding our super susceptible varieties even a moderately susceptible variety is better than a susceptible variety. So choosing the best resistance we can and then tailoring our disease management package to the variety that we're growing. So people like to push the boundaries by growing crops closer together between seasons, or close together in paddocks next to each other. We're going to get away with it in a dry season, but by growing a more resistant variety, that lowers our risk as well. It also means we're buying ourselves time in the season. If we see disease, we've got a little bit more time before we have to get something out to control it, as well as just right from the word go. You know you're going to have less issues with disease right through the season by growing that more resistant variety. Next part of it is monitoring for disease and understanding your environmental risk throughout the season. So we're going to look after our rainfall events for disease. We're then going to be monitoring how much disease we're getting and monitoring that environmental conditions. And then last of all, we should be thinking about our fungicide strategy. We should be rotating between our actives. We should also be using mixtures of fungicides, staying within our label rates and following that good fungicide management practice essentially. So we're not using the same fungicide over and over again by rotating through them and only using them when we're required to some resistant varieties, you're obviously going to need them less. The more we apply these fungicides, the more selection pressure we put on our pathogen, which then ultimately can lead to fungicide resistance, which is why we're trying to avoid that as well.

[00:10:10] **Hilary Sims** Definitely some good reminders there. So Joshua, to finish up, what's your takeaway message to pulse growers?

[00:10:16] **Joshua Fanning** If you're told not to use a product by your grain marketer, essentially we have got a range of other products available to us. If you look at other countries, they're losing products all the time and we adapt. Our growers are no different to those. Our industry is very, very adaptive. We've got a range of other products available to us, and if we go back to those integrated disease management strategies, we're not just relying on fungicides but relying on all these other mechanisms for disease control. And that's going to put us in good standing moving forward and hopefully growing economically viable and highly profitable crops.

[00:10:49] **Hilary Sims** Joshua, thanks for speaking to us today.

[00:10:51] **Joshua Fanning** Thank you Hilary.

[00:10:59] **Hilary Sims** That was Research Leader Plant Pathology at Agriculture Victoria, Dr Joshua Fanning. And before him was GRDC's Chemical Regulation Manager, Gordon Cumming. More information on this topic can be found in the description box of this podcast or online at GRDC.com.au. I'm Hilary Sims and you've been listening to a GRDC podcast.