Nick Housego:

Welcome all of you to our sixth webinar of the Australian Biosecurity Series, hosted by the Department of Agriculture, Water, and the Environment. Hello, my name's Nick Housego. I will be your facilitator for today's forum on the biosecurity and collaboration and why it is the vital combination keeping Australia safe. Thank you for taking time out of your busy schedules for joining us. I would like to begin today by acknowledging the traditional custodians on the land on which we meet and pay my respects to the elders past, present, and emerging. I extend that respect to the Aboriginal and Torres Strait Islander people who are here today.

Nick Housego:

We have an extraordinary mix of listeners with us today from all around the country, stretching from Perth up to Darwin, Townsville down to Melbourne, regions such as Lismore and Orange as well, were represented, with people coming in from the Tasman, the New Zealanders. There's representatives from state and federal governments and a solid representation from industry, including Coles, Greenlife Australia, and the CSIRO. Welcome, everybody.

Nick Housego:

Today we'll hear from three of the 2021 Australian Biosecurity Award winners, whose innovative work is protecting Australia's biosecurity. This year's winners were announced at the 2021 National Biosecurity Forum, which ran virtually from November 10 to 11. The awards celebrate the dedication and hard work of the Australians who work tirelessly to maintain and improve Australia's biosecurity. Australia is facing increasing pest and disease risks that are becoming more complex and harder to manage. Thankfully, Australians are a pretty innovative bunch. All around the country, people on the frontline in governments and in the industry are using technologies, new programs, new ideas to combat pests and diseases that if introduced to our shores could bring us to our knees.

Nick Housego:

Today's speakers are at the forefront of that innovation and collaboration. To start today's session, we are going to show a short video featuring the work of our 2021 ABA winners. That will be followed by an introduction by Deputy Secretary and the Department's Head of Biosecurity, Andrew Tongue. Andrew will talk briefly about why innovation and collaboration are at the heart of the modern biosecurity measures. We will then have Biosecurity Queensland's Duncan Swan, who will take the illegal sale of cacti online and how his team addressed the issue. We will then hear from Dr. Graeme Cooke. Graeme is Victoria's Chief Veterinary Officer, and will speak about Agriculture Victoria's response to the 2020 avian influenza outbreak. Then we'll follow with Andy O'Brien and Chris Johnson from Pohlmans Nursery on maintaining plant biosecurity standards in the commercial nursery and the Biosecurity HACCP program. We will then end the webinar with a question and answer session so you can ask your questions of the presenter.

Nick Housego:

I would like to welcome Barry Spence, also from Pohlmans, who will be joining us for the Q&A session. He's standing in for Andy O'Brien. Okay, so let's kick off today's session with a short montage film showcasing today's speakers. That will be followed by a pre-recorded introduction by Department Secretary Andrew Tongue.

Duncan Swan:

What started as a project to address the illegal online sales of cacti has developed into a significant online engagement and enforcement capability being applied across Biosecurity Queensland and local government.

Dr Graeme Cooke:

Ag Vic cannot fight diseases like salmonella and avian influenza alone. It needs to work in partnership with not only the producers, but also the representative bodies of the industries involved.

Chris Johnson and Andy O'Brien:

We are proud of the systems we've been able to develop, especially in conjunction with the AMS and the BioSecure HACCP system. It has enabled us to minimise and eliminate current biosecurity issues and also emerging biosecurity issues. But the major thing is it has majorly improved our quality, and we can't have done this without our staff, our customers, and our loyal support here.

Andrew Tongue:

Welcome. Thanks for your time. Australia's biosecurity system is fundamental to our way of life. Our biosecurity system is worth around $300 billion a year to the nation. The system protects agriculture, the natural world, and our way of life. Australia's an enormous continent, but it's very fragile. We don't have pests and diseases that are endemic in the rest of the world, and our biosecurity system is designed first to protect Australia's borders from pest and diseases that might want to arrive here, and then in the event that if they do arrive here, to manage them.

Andrew Tongue:

Today, we're going to hear some case studies of people who are doing fabulous work and have been recognised in the Australian Biosecurity Awards for their work in helping us prevent and then manage pests and diseases in the vast Australian landscape. Australia's lifestyle depends upon us being connected to the rest of the world. Millions of people in normal times travel to Australia. Two and a half million shipping containers a year arrive on our shores. 20,000 large vessels carry goods to and from Australia. 144 million mail items. From a Commonwealth government perspective, we intervene with everything to try and protect Australia from pests and diseases. Our colleagues in state and territory government are managing endemic pests and diseases. And of course, all of this rests on the foundation of industry and the community working together with us to protect our country.

Andrew Tongue:

Why is it important? Think about the damage over the centuries done by rabbits or cane toads or prickly pear. Think about what might happen if we got foot and mouth disease or African swine fever, any one of a thousand or more plant pests and diseases. We can't take our biosecurity for granted. Hardworking Australians deeply committed to our country and its future get up every day and work incredibly hard to protect our continent and our lifestyle from pests and diseases. I really commend these stories to you, I think they're fabulous. And congratulations to the winners of the Australian Biosecurity Awards. I hope you really enjoy them.

Nick Housego:

Fantastic introduction from Andrew. Great insights. Okay, Duncan Swan from Biosecurity Queensland's Social Platform Regulatory Awareness and Engagement group was one of the winners of the government award. Duncan will now take us through how Queensland went about tackling the illegal sale of cacti and other harmful plants online. Duncan.

Duncan Swan:

So just to start, what I'm talking about today is the illegal online sale of cacti and other weeds that were a particular problem in Queensland. So, serious biosecurity risks can be created via social media and online sales platforms, and that wouldn't be a surprise to anyone. As an example, in 2017, Biosecurity Queensland were receiving lots and lots of reports of the illegal online sales of weeds, primarily on Gumtree. And there was a community expectation of a response. So in mid 2017, we commenced a new compliance project specifically to address the illegal online sales of cacti.

Duncan Swan:

Lots of people will probably ask why did we focus on cacti? Well, a few reasons. First of all, the ease with which cacti can be propagated and posted. They can be easily grown in a backyard or in a small nursery. They can be placed into a box, put through the mail, and they'll arrive pretty much in the same condition they were sent. We all know how much impact cacti can have both on our agricultural systems and also on the environment. So, that was a really significant part. In Queensland and New South Wales, we had the cultural memory of the prickly pear invasion. And you can see an image of that in the bottom left corner there. 100 years ago, prickly pear covered 60 million acres of Queensland, New South Wales. So, that cultural memory still exists, so we wanted to build on that.

Duncan Swan:

How did we go about it? First of all, we started small. We just checked Gumtree. Quite often on Gumtree, people will have their phone numbers there. We'd engage with them and just try to recover the biosecurity matter, in this case, the cacti. We didn't imply any penalties, but over the next 12 months, so mid 2017 to mid 2018, 315 individual cacti were seized. Some of the early outcomes of this project: that high rate of effort provided us a really good understanding of the problem, the types of species that were out there, the types of people who were trading in illegal cacti. We identified that specific targeted engagement was needed to support our compliance effort. So that was a really important learning for us. And we also identified that we needed new enforcement tools.

Duncan Swan:

As we all know, the digital environment changes all the time. We noticed in 2018 and 2019 there's a real drop-off in the number of cacti being offered for sale on Gumtree. We'd like to think that that was because of our work, but probably Facebook Marketplace had come along and people are transitioning to that platform. We recognised we needed a different approach.

Duncan Swan:

We started using our Biosecurity Queensland Facebook account to highlight the issues around the illegal sales of biosecurity matter. One thing we learned pretty early on is that it's really hard to communicate compliance and complex science messages in a single post. So what we did was we developed what we call story arcs, and these were a series of posts over a week, five posts, one per day, that basically took people on a journey as to why we were doing things and the threat that the things that they might be doing posed to our biosecurity system. We also engaged with our digital communications team. One of the things we identified early on, particularly on Facebook Marketplace, is it's very hard to engage with people through that platform, and we needed some new compliance tools. The great thing about collaborating with the digital comms team was we presented them with a problem, they went away, they engaged with Facebook, and they came up with the idea of creating a profile, which is effectively our personal page in Facebook, where we could directly message our sellers who are selling things on Facebook Marketplace.

Duncan Swan:

That was quite innovative because it's against the Facebook terms of reference. Generally, if you do that without permission, Facebook will shut those sites down. So we did a lot of work with Facebook to get that across the line, but they were really happy with that and the processes we put in place. Our Social Platforms Regulatory Awareness and Engagement group was a part of the governance around that. Since then, and that was only set up last year, it's been used 42 times to engage with people on Facebook Marketplace, and we've had about a 40% response rate, which might not sound very high, but it's actually really good in terms of that sort of social media. And we've been able to recover 117 things, mostly cacti but some other things as well, that we wouldn't have been able to recover without that capability. It's really a first for Australia. It's being adopted by the other states, and a lot of other agencies in Queensland government are also looking at this technique for managing online sales.

Duncan Swan:

Some notes about using social media, our engagement component was really important in the overall project. The first thing is to keep the messaging positive. Biosecurity is a good news story, and we need to sell it. What we did was we highlighted the risks being created by offenders and what we were doing to address these risks. You can see a really good example of that on the right hand side with a kingfisher there that's been trapped in a Hudson pear and killed. The other really important thing was all our messaging was supported by our operational compliance and enforcement. So where people were making complaints to the department, that was being actively followed up and people were being engaged around that to make sure that we demonstrated that we were serious about this work.

Duncan Swan:

So briefly some of the outcomes. So to date, we've been active in this space for about four and a half years. We've seized 2,840 cacti, and that number grows every day as the inspectors are out there doing this sort of work. We've also been able to successfully apply this to other areas of Biosecurity Queensland's work, including particularly the carriers of variants, so soil and mulch, and also people trading banana plants outside Queensland's banana biosecurity zones. And in that way, we are really trying to engage with people proactively to prevent the sales that might be illegal.

Duncan Swan:

So just to summarise, some really important lessons, operations in the digital environment are complex but they can deliver outstanding results. So much of our world is online now; we need to be engaged in that space. Our engagement messaging and our enforcement need to be carefully integrated and applied because neither work well in isolation. But together, they can be really powerful. Social media provides an ideal opportunity for not just government, but all people involved in biosecurity to engage with lots of stakeholders. But it's really important to take the time to explain why biosecurity is important. Like I said, there are techniques that you can apply to communicate really complex scientific messages even in simple posts. We now have really good ongoing engagement with many of our stakeholders. And I note that some of our offenders, so those people who we engage with early on in the program, are now some of our strongest advocates, and they're out there actively looking for people doing the wrong thing and reporting them to us, which is really great to see. That's the end of my presentation. Thanks very much, Nick

Nick Housego:

Duncan, what an amazingly strong case study. Really, really good. Should be plenty of questions flowing from that. I'll encourage you to put those questions into the Q&A box. Okay, now I'd like to welcome Dr. Graeme Cooke, Victoria's Chief Veterinary Officer. Graeme will talk about Agriculture Victoria's response to the 2020 avian influenza outbreak. Graeme, over to you.

Dr Graeme Cooke:

Thank you once again to the panel for acknowledging Victoria's efforts. It's very difficult in a few minutes to give you an overview of an outbreak that lasted over six months, that involved mobilising 300 people, the destruction of 460,000 birds. But I would start by saying that the majority of people who were involved in the response never actually met each other apart from those on the ground, and myself as Chief Veterinary Officer met none of them. And that was because Victoria, normally energetic and very bustling, was thrust into COVID restrictions that were entirely necessary, which we now know have become some of the strictest in the world. And that was the story of Victoria for most of last year. But really today, we're talking about avian influenza. A single slide to explain, but it's a highly contagious disease. It's present in wild birds, almost continually, and spreads into the commercial sector with very destructive effects when occasionally it can spill over from the wild sector into the commercial sector.

Dr Graeme Cooke:

It's a disease that transmits to humans sometimes. And of course, we all know now the dangers of mixing animal diseases with humans and how that can lead to huge problems such as pandemics. There are basically two types, low pathogenic, which is mild and mild respiratory disease, and highly pathogenic, which is extremely serious and can kill entire large commercial poultry houses within hours or a few days. We know that low pathogenic avian influenza can mutate into high pathogenic due to what's called antigenic drift or shift, or new variants to simplify it. Normally, avian influenza is spread around the world by migratory birds moving from one part of the world to another. That's not quite the situation in Australia. In Australia, avian influenza is present, and it's moved around by the nomadic nature of wild birds, particularly waterfowl. So therefore, we know that Australia has avian influenza present in wild birds, and it's occurred in New South Wales, in Queensland and, of course, Victoria. That means we have an outbreak approximately every six years.

Dr Graeme Cooke:

So going back to the last week in July, birds on a free range farm in the Lethbridge area, which is to the southwest of Melbourne, really started to show increasingly and worryingly levels of serious disease with very, very high levels of mortality. On the 31st of July, we diagnosed highly pathogenic avian influenza. That was followed on the 6th of August by another egg farm with highly pathogenic, then a Turkey farm with low pathogenic on the 10th of August. On the same day, a Turkey farm to the eastern side of Victoria with low pathogenic. And then on the 25th of August, the very same day, low pathogenic in Australia's largest emu farm, and highly pathogenic in another egg farm in Lethbridge.

Dr Graeme Cooke:

And that was the beginning of Australia's largest ever recorded avian influenza outbreak. So, of course, we put a plan together, an Emergency Animal Disease Response Plan, which was endorsed by CCEAD, the national group of technical experts of government and the industry working together. And that was approved by the National Management Group. It was Eisenhower who said that plans are nothing and planning is everything. What he meant by that was that plans meet reality, and reality needs planning to get around it. What is really interesting is that his archrival, Romel in the desert and also in Normandy, is famous for saying that no plans survives contact with the enemy. And isn't it quite telling that two men so opposed to each other so energetically agreed that planning is essential and being able to react and overcome is essential. So that's what we had to do.

Dr Graeme Cooke:

We started off at the beginning of the outbreak with about 30 people enrolled, and by the end of the outbreak, we had almost 100 people enrolled, working throughout different parts of Victoria and working, as I said, with multiple types of disease on different types of premises. And really to simplify what that machine of an organisation was doing, is it was continually trying to move forward with a momentum to beat the outbreak, observing what was happening, deciding what that meant, orientating, making decisions as to what needed to be done, and then delivering those decisions. And that was the rhythm that we had to adopt. Other things, of course, that we were doing were putting in place movement controls to stop disease leaving infected premises, and then in the restricted areas and controlled areas around those premises, making sure that businesses could carry on, but that any undisclosed disease really was mitigated in terms of the chances of it escaping.

Dr Graeme Cooke:

This map shows the three areas of Victoria where we had movement restrictions, to the southwest of Melbourne in the Geelong area, the Lethbridge area, over on the eastern coast where Bairnsdale is, and north of Bendigo and Kerang where the emu farm was. People were undertaking on the ground investigations in terms of sampling of infected premises, increasing the level of wild bird surveillance to understand the burden of infection, and tracing from infected premises. We all know about the need for tracing now. This really shows you the level of sampling that was needed, nearly 19,000 samples by January 2021, but note that there were a large number of samples to begin with, but you needed all of this testing to be sure that you were free of disease and that Australia could call itself once more avian influenza free. And you can't do this unless you have great laboratories, and a huge thanks to AngriBio and also to the Australian Centre for Disease Preparedness, where staff worked right through the weekends and very often through the night. So thank you.

Dr Graeme Cooke:

We also had done to take the 3Ds, disposal, destruction, and decontamination. Avian influenza has a stamping out policy, which means you have to destroy infected and thought to be infected birds. And that needs to be done humanely and under veterinary supervision by various means. And then you have to dispose of those carcasses, and that's not always as simple as digging a hole or incinerating them. We had to find a way in many cases, because of water tables and high levels of rocks, to move these birds offsite and find a way to do that. And then decontamination's a complex science in its own right. How do you decontaminate very, very large infrastructures such as commercial poultry units and sheds, and how do you decontaminate free range ground outside? And this needs a lot of logistics, working closely with contractors, making sure that everything is done safely and that there's no onward transmission of disease. And thank you to the contractors who stood up when they were needed.

Dr Graeme Cooke:

You also need to take a lot of epidemiological assessment. What that really means, you have enough intelligence to be able to make the right decisions to move forward. We didn't just visit premises, we had to devise innovative means of mass texting, which was remarkably successful, calling people directly from a call centre, organising the pickup of dead birds from gates, increasing wild birds surveillance. We introduced on the 7th of August Australia's first ever housing order requiring people who had birds commercial birds outside to move them inside to protect them contact with wild birds. And we'll never know how many infected premises we stopped by doing that.

Dr Graeme Cooke:

So getting onto the challenges, as said, there were three concurrent outbreaks in three geographical areas in three different types of species. These large commercial farms had enormous implications in terms of the size and effort needed to destroy, dispose, and decontaminate. A large workforce was needed, and that wasn't always easy to find for the reasons I would say. The emu farm I alluded to, Australia's largest emu farm, had a nucleus of breeding stock, which if they had been destroyed, would've probably been the end of Australia's commercial emu farming sector. So we had to find a way, and the policy does exist for that, but we had to enact that and deliver a way of protecting that core breeding nucleus for posterity and not destroy them. And that was an Australia first..

Dr Graeme Cooke:

But getting back to COVID, of course, people had to work remotely, but people also had a one person one vehicle rule to obey, which was quite a slowing down of the response in some ways. Interstate assistance was not easily at hand because of quarantine restrictions. It was an awful lot of permitting and paperwork that had to be complied with. And of course, we had suspect COVID cases from time to time in response teams and we had to really react to keep the response going. But a key item that was hard to overcome was the double whammy, let's call it, of people having to be at home to do home schooling, but also that quite a large amount of our department was in support of COVID at the time, helping out our Department of health Colleagues.

Dr Graeme Cooke:

So really to close down, avian influenza is a top threat in Australia and is here to stay, and we need to be prepared. There were valuable lessons not only for Victoria, but for all of Australia in terms of preparedness that is needed and how you continue business and how you can actually use remote working to your advantage. Government and industry learnt in the response that they had different safety standards, and that would be something good to iron out beforehand. And it's been said very often that diseases do not follow a plan, you have to adapt and you have to innovate. You need to be able to scale up on contractors as a way of doing that. And vitally, absolutely vitally, you need great transparency and collaboration between industry, government, people who are pushing through the response together. And of course, keeping producers informed because export markets and other markets just close.

Dr Graeme Cooke:

I think a slide all of its own has to be communications. A full range of communications is needed now, whether it's social media, one source of truth on a website. You need full-on working with the industry in terms of great liaison, having a core industry group with weekly open fireside discussions working through problems together, and then keeping the rest of industry really informed through situation reports and town hall meetings.

Dr Graeme Cooke:

So I will finish by saying it has been said that good luck is when opportunity meets preparation, whilst bad luck is when the lack of preparation meets reality. Andrew and Nick alluded earlier on to how Australia's biosecurity threat is increasing rapidly, and we have to face up to that. Increasing levels of goods coming in, more complex, logistical chains, more complex traveller routes on the way to Australia, supply chains that produce in one product, items that have come from many, many different countries, climate change, we are all discussing that at the moment, and of course, illegal activities.

Dr Graeme Cooke:

So I'd say now thank you really to everyone who is involved in the Victoria response. Too many to say, but they all went the extra mile. I think what we need to do now is take our lessons learnt and share them across Australia and be ready for the next thing, because nature will give us another thing. Thank you very much.

Nick Housego:

Graeme, magnificent. Fantastic presentation. I'm hoping that'll encourage quite a few questions to come through. We do have quite a few coming in at the moment, but don't hold back. Let those questions come through for the presenters. Okay, finally, we're going to hear from Andy O'Brien and Chris Johnson from Pohlmans Nursery, who will take us through their pre-recorded biosecurity HACCP program video, looked at commercial nurseries, and discuss how plant biosecurity standards are maintained. Pohlmans Nursery won the Farm Biosecurity Producer of the Year Award.

Chris Johnson:

Today, Andy and myself will be covering off on the history of Pohlmans Nursery, the business as it's run today, tech and innovation advancements over the years, the importance of plant protection, BioSecure HACCP, and the benefits that we have seen over the last 10 years.

Chris Johnson:

Pohlmans Nursery was first established in 1976 by John and Val Pohlman, just outside Gatton in Queensland and Lockyer Valley. The business remains family owned and operated. John and Val's sons, and many of their grandchildren, still have active roles within the business today. As the business grew, more and more facilities were constructed. Initially producing tomato seedlings for the local farmers, over time, the business has grown to be one of the largest wholesale nurseries in the country. We now produce around 17 million flour and vegetable seedlings, herbs, potted annuals, and perennial colour, as well as indoor foliage and tree and shrubs for the retail market each and every year. We deliver right across Queensland and into northern New South Wales every single week. The property spans 60 hectares with 20 of that used for intensive nursery production. It's broken now into six main divisions. We employ up to 200 staff in our peak times with a regular workforce of around 140.

Chris Johnson:

Technology has always been at the forefront. Tech and automation form an integral part of the workings and efficiency of the nursery. Each expansion project has always used the world's best technology at the time. In the late 1970s, Mr. Pohlman travelled to Europe and returned with the rolling bench system which is still in use today. Pre COVID, key staff would travel to the US and Europe to see the latest technology and also work with plant breeders to select the best new varieties that are suitable for the Australian conditions. We're now using drones to apply shading products to our greenhouse roofs, and hopefully in the not too distant future, we can actually use the drones for releasing of beneficial insects, spraying, and crop monitoring.

Chris Johnson:

Our latest expansion is our biggest project yet. It's a multimillion dollar investment, and it's the future of the nursery. The new 11,000 square metre propagation greenhouse uses the best available technology anywhere in the world. We've got the latest vapour pressure deficit climate control with fog, mist, heating, cooling, and also has efficient boom irrigation that allows us to apply sprays and fertilisers through the booms. We've got rolling benches and production line type machine to increase all levels of efficiencies. The new house will have insect screening to keep pests out and also keep our beneficial insects in.

Chris Johnson:

Plant protection and biosecurity underpin everything we do. The principles of BioSecure HACCP underpin its effectiveness, and it provides a robust systematic process that ensures plant health and that issues are identified, documented, and actioned as soon as they're discovered. Everyone in the nursery plays a part in biosecurity, from weeding to monitoring, inspections, applying treatments, creating and maintaining records. It's now part of their day to day. We've got a long history of involvement in industry, plant protection, and best practice programs. We've been members of NGIQ since 1978 and have been NIASA accredited since 1997. We gained BioSecure HACCP certification 10 years ago in 2011.

Chris Johnson:

BioSecure HACCP has put a focus on our supply network and incoming stock, as any issues are either negated or identified early, pushes quality control for our business back onto suppliers to ensure high quality product is delivered each time. Everything is quarantined on arrival. It's assessed, accepted, or rejected. It's treated if necessary before entry to the nursery. Crop monitoring is our most useful tool in identifying, managing pests across the nursery. We allocate every Monday for our growers to complete thorough crop monitoring in their areas ahead of all other programs that they might need to complete. Throughout the rest of the week, we're always on the lookout for issues and quality improvements that can be made. Their time spent looking over crops drives their weekly program, and we can plan from there. If the pest threshold's high, we might have to selectively spray that day. If it's manageable, by adding some more beneficials to the crop, we'll do that and we'll monitor. Or it might be worth dumping a few affected plants and removing the problem before it can spread.

Chris Johnson:

What we will do as managers is question the proposed actions. "Do you really need to spray? What would the impact of that spray be on your beneficial population? And is there a better option?" Our stock controllers are also constantly assessing the quality of our crops before they put them on sale. We've got weekly field walks in all nursery areas with key team members. Non-conformances are recorded and they're documented throughout the crop cycle. So every crop will have several people look at it throughout its life. And importantly, dispatch inspections are the final check for all plants sold to ensure that our customers receive the highest quality plant every time. The ability to produce consistently high quality crops has led to increased sales across the business. We know that the multifaceted inspection system will pick up any issues before a crop can be sold.

Chris Johnson:

Initially, we used paper records for all requirements of BioSecure HACCP, but we had a desire to move away from paper records and improve the way we collected the information. Google Forms made sense. You can build your own forms to suit BioSecure requirements. You can get the data back easily, and it's free. We generate around 10,000 records a year under the program, so we need a decent system to record our online records. The move to online records was a major win. It saved us time, increased the thoroughness of records, and allows us to easily retrieve data. It allowed us to fill in gaps where our existing production system didn't have that information and where somebody would have to compile it from paper record. The whole record system gives us accurate traceability of all of our products. Our records are uploaded to the AMS, or the Audit Management System, which is run by Greenlife Industry Australia. And the recent upgrade to the AMS means our records submit straight to the system and can be audited in real time.

Chris Johnson:

Working with GIA allows us to ask them, "Where can we do better? And what areas can we improve on?" The thorough monitoring's driven a reduction in how much we spray simply by knowing exactly where the problems are and only treating those as required. We've increased their effectiveness also by better targeting sprays to the issue at hand. And this is what good growers should do. And refer back to your information to look at historic trends and issues. People get busy and often the first thing to fall off is record-keeping. But the compulsory nature of records in the program ensure that the records are complete each week.

Chris Johnson:

Here you can see our average thrip population across all nursery areas for the last four years from our sticky trap data. This data's invaluable. It provides proof that what we are doing is working, and I can't stress it highly enough the benefits that this information has given the business. The belief in data from BioSecure HACCP allowed us to implement an IPM strategy across the entire nursery. We weren't controlling pests as effectively as we'd like with the traditional chemical methods. So for the last three years, we've released beneficial insects every week into almost all new crops and then as required for the life of the crop based on crop monitoring results every week. We now use more biological insecticides and fungicides than any other type, and we've phased out a lot of old-school chemicals. Not only are they dangerous to plants, people, and the environment, but they simply don't work.

Chris Johnson:

Something we're incredibly proud of is the increase in biodiversity across the nursery. We've got natural predators doing our job for us 24/7, on top of the beneficials we release each week. So these guys here are all naturally occurring, we've not released them. Clockwise from the top, you've got an adult lady beetle eating aphids, lady beetle larvae, and abundance of frogs across the nursery, a Cryptolaemus lady beetle larvae, native bees in a flower, and a red and blue beetle. This is just one part of our broader sustainability goals, to minimise our environmental footprint by using less chemicals and more bugs.

Chris Johnson:

Our dumpage from pest and disease is less than 1%, and it's reduced significantly over the last 10 years as a result of the systems in place, as a result of investing in our teams and creating a skilled engaged team who are proud of what they do. Our quality to customers is consistently higher. And our savings now are in the order of $150,000 each year. BioSecure HACCP, it's made us better producers. It saves, and it makes us money every year. Thank you.

Nick Housego:

Wow, fantastic. The presentations have been brilliant. Very, very good. The first question that's come through I've got is for Duncan. "Duncan, thanks for the talk. Social media and biosecurity is interesting material to work with. Has the department considered using web scraping to track keywords across the platforms? You could also engage with platforms such as DAWE did with eBay and seeds." Have you been doing anything in that space?

Duncan Swan:

Thanks very much, Nick. We did start using some web scrapers at the start of our compliance program. I suppose the issue we ran into was we didn't have the capability to follow up on all those things, and we really wanted to prioritise the reports coming in from the public. So yeah, it's a really excellent tool. We did phase it out only because of our capacity issue. I'm not sure that really answers the question, but I think there's a great opportunity for web scrapers to be used in the online compliance space. They're definitely highly effective and particularly if you can get the keywords right when you're doing that sort of work. They're really great at identifying where those potential offences are. So yeah, definitely something I think we will look at in the future.

Duncan Swan:

One of the real benefits of our program has been that the public's been really well engaged through it. So the number of reports that we've had coming in from the public has actually been quite high. And it's good to see that quite often when there is an offence, we have more than one person reporting that to us. That gives us some confidence that we're getting quite a lot of the illegal online sales that have been posted across eBay, Facebook Marketplace, and Gumtree are being dealt with. I hope that answers the question.

Nick Housego:

Goes a long way to doing it. Okay, question for Graeme, "Why does the disease not kill all the wild birds?"

Dr Graeme Cooke:

Very, very good question. That's really because avian influenza moves around the wild bird population such that it creates a degree of immunity, and also the virus is not as destructive as it is in a totally naive population like commercial poultry, who've never really been exposed to that type of influenza at all. It's also because in commercial poultry, the disease can move through number of birds, and because of this process of antigenic drift and shift, it can become more and more destructive. The poultry farming approach of obviously having to have large numbers of birds is completely opposite to what it's like for wild birds, who are very dispersed and very few in number. Occasionally, you do get large numbers of wild birds dying, but that didn't happen in this instance.

Nick Housego:

Okay, fantastic. Okay, Barry, question for you, with your nursery being so innovative, how much growth do you see happening between now and the next decade in terms of biological suppressants rather than chemical based? How much activity do you think you're going to be throwing into that space?

Barry Spence:

I'm going to pass that one over to you, Chris.

Chris Johnson:

I'm happy to answer that. I'm pretty passionate about that one. Week to week, mate, we're getting more and more involved in the IPM process. Realistically, in the next two years, we want to phase out all synthetic chemicals all together. We're pretty close to it now. Any chemicals that we do use now are very much biological bacillus and those type of products that are compatible with the beneficial insect programs. So within 10 years, mate, definitely won't be using any synthetic chemicals. We're hope in the next 12 months we eradicate that all together because that's our environmental footprint that we want, and I think that's where the world's heading.

Nick Housego:

Okay. Question for Duncan, another ones come in, "Were the seizures and detections of illegal sales of cacti from overseas sources or from growers in Australia illegally propagating cacti in the Australian locations?"

Duncan Swan:

Yeah, great question. Thanks, Nick. The vast majority have been propagated locally, and we know that because we have engaged with people who tend to have large backyard sort of almost industrial scale nurseries. One thing we know with cacti, they're relatively easy to propagate. People look at this as a potential source of revenue. We go to these areas in urban areas, so it's just a backyard and the whole thing's been converted to a nursery. Probably nothing like what Pohlmans have, but still significant for the location. So yeah, the vast majority are propagated in Australia.

Duncan Swan:

But I will say that we have occasionally come across quite unusual cacti. So there is a pathway particularly for the collector market, so those people who are really passionate collectors of cacti into the country. It's probably a very, very small proportion of the total, but it is there. We tend to see it doesn't matter whether it's weeds or invasive animals, that those collectors tend to be a really high risk group for us, that they're the ones that want something unusual that no one else has got and they might take the risk to smuggle something into the country. So we're always on the lookout for that. We try to develop intelligence around what species are out there, what we know about, and if we get some information, we pass that onto the Commonwealth agencies for further investigation.

Nick Housego:

Okay. Thank you. Duncan, I've got a... No. "So Graeme, were you able to get death percentages in the wild birds caused by avian flu? Were you able to get any data on that?"

Dr Graeme Cooke:

The level of surveillance in wild birds was increased as far as possible, and many, many thanks to the wild bird experts and also to Wildlife Health Australia who participated in that. But no, as I said, sometimes you have what's called wild bird die-offs, that's been reported in other parts of the world, usually associated with some sort of environmental element, like a very cold winter or something like that. But we didn't have that here. But thank you to members of the public who at the time reported dead birds and submitted them for testing through a system we put in place.

Nick Housego:

Okay, I'm going to come back to the nursery, Pohlmans, "Your collaboration and your large organisation is fantastic. How is the biosecurity collaboration extended to industry and to others in your production region, even to producers of different products that are affected by the same pests?"

Chris Johnson:

I can answer that one again. So GIA and the BioSecure HACCP organisations have been very good on sending out notifications of any emerging pests and that type of stuff. So they give you the heads up on any possible insect/pests that might be an issue or disease or weed in your area. So we get a lot of that information early. That's enabled us to train our staff before we even see those products, so they're aware of it. So it's part of their training process, which we incorporate with the crop monitoring on a daily basis as well. But I think the local ones are always a big one. We're actually involved in a local growers group. We go to meetings every fortnight with those guys, and that group is very good at bringing up any emerging biosecurity issues. We've been lucky to actually talk with the vegetable and herb growers and that type of stuff about any of those biosecurity emerging issues. And we kind of collaborate with them. So it's very good organisation. So that's what I'd advise for everyone, is try and get in contact with your local growers as well.

Nick Housego:

Yeah. You must have quite a level of influence amongst growers given the size of your operation.

Chris Johnson:

Yeah, we've learned a lot along the way, and you have to when you produce large volumes. So, yeah, we talk amongst the rest of the industry leaders as well and try and develop best practices that suit.

Nick Housego:

Okay. Question for Duncan, "Were you able to find where the illegal propagative materials came from? Were they collecting from wild seeds or importing from overseas?" What was your level of intelligence?

Duncan Swan:

Yeah, so again, the vast majority is definitely coming from domestic sources. I suppose it's important to note that cacti have been in Australia since the first flee. So we've got a really long history of owning and possessing invasive cacti, and obviously that's led to quite a lot of problems across the Australian landscape. We've got some really good paper cuttings from about the 1940s of people advertising these sort of species that we commonly encounter. So I'd say that, yeah, again, the vast majority are domestic and that there's a very small percentage that are coming in from overseas. Whether they come in a seed or small pieces of biological material, I couldn't answer that.

Nick Housego:

Okay. Graeme, it's an incredibly challenging year to have had an avian influenza outbreak along with COVID and those activities. What level of communication awareness was needed? You mentioned it as a single slide, but take us through some of the challenges that you had with the communications, because there was a lot going on in the airwaves.

Dr Graeme Cooke:

Yes, yes, there was, but you could also argue that people had a much better understanding of biosecurity across the population than ever before and also what's needed to control a disease sometimes. First of all, the key element that you want is collaboration, understanding amongst the industry as to what's happening. You have to communicate at multiple, multiple levels, not only with industry leaders to make sure that everyone is able to speak with authority to their own industry and carry on that level of collaboration, but you also have to have very transparent communications with the wider industry through the website. That's very, very important. We find that social media, particularly amongst small number of poultry keepers, including bird fanciers and people who have waterfowl and free range chickens for their own purposes, that social media was a very, very important way of getting to them and also through influencers such as feed merchants and veterinary practices and so on. So it's crucial. If I was asked what were the top two things that I would take away from the response, it would be, first of all, communications at high volume, very rapid, and very transparent, and also a need for people perhaps in the future to be involved in exercises so that industry and government people as well are aware of all the consequences that can happen from a response and that need communicating for people to deal with.

Nick Housego:

Were there any detractor groups, Graeme? Were there people who were saying no to the influenza, they were just pushing back on it? Or was it generally a sense that the farmers and the businesses were very willingly engaged in this process?

Dr Graeme Cooke:

No, I can honestly say we had minimal detraction. I think there's always social media nowadays, it's a part of life, but very, very, very minimal. And why was that? Was it because there were other things happening? Was it because this was potentially a disease that could spread to humans and so on? But I think we go back to in order to try and minimise that and having to explain yourself at the time what you're doing, best to have collaborative efforts in terms of preparedness beforehand so that people know what to expect.

Nick Housego:

Okay, I'm going to go to Duncan now and look at it and say, you rolled this out against cacti. Could this model easily adopt to other pests and diseases? Do you see it as a transferable process?

Duncan Swan:

Absolutely. Basically, this process could be transferred to anything that's being sold online. We've been working across the three platforms of eBay, Facebook Marketplace, and Gumtree. Of those three, eBay is pretty well managed, so it's got really good governance around it, and they do have a law enforcement portal that if you're a government agency you can register as a law enforcement agency and you're able to interact with them and do good investigations. Facebook Marketplace I've talked a lot about. Gumtree is pretty much unregulated, but relatively easy to manage in that most of our inspectors have a corporate Gumtree account through which we can either access people's phone numbers or message them directly.

Duncan Swan:

We've done some work with some of the other state agencies, so New South Wales local land services have been doing some work in the cacti space now around illegal online sales. Likewise, in South Australia. So it's great to see those other jurisdictions adopting some of this work. We've also seen it in other state agencies. So Office of Fair Trading in Queensland have been looking at this process for their regulations around the sale of secondhand cars, for example, and regulating that. So I think it does have application across the board and anyone who... or any agency that's interested in doing regulation online can certainly look at some of the stuff we've done as a bit of a model for a potential way forward.

Nick Housego:

Okay. Thank you. Barry and Chris of Pohlmans, question for you, "How do you train your staff to identify insects and pests and beneficial insects so that they don't spray the wrong ones?"

Chris Johnson:

Want to answer this?

Barry Spence:

Yeah. We do weekly webinar training with our staff, with our growers and our production staff, also a lot of infield training as well, teaching them to identify the particular insects and pests. Chris, do you want to add anything to that?

Chris Johnson:

I suppose the other thing is that from a managing point of view, they'll do all the crop monitoring but no spray is approved until it's gone through a manager and we look at the threshold and the program. And normally, nine out of 10 times, our first option will be a soft approach with a biological or a biological/insecticide that's compatible. So we really only target it if it's a high enough economical threshold to warrant that.

Nick Housego:

Are you using drones to drop any of the...

Chris Johnson:

Not yet, but you see, that's where we're heading. We're working with people amongst bugs and biological services and those people to get to that next level where we could possibly do that. So, yeah, it's all pretty exciting where we're heading.

Nick Housego:

Very much in the innovation space all three of you in doing that work. In five to seven years time, Graeme, what do you think will have changed with the way you roll out a response like you just did? What are the things that have improved? What are the things that are changing in the landscape?

Dr Graeme Cooke:

Well, first of all, I'll just finish a further comment on your question about detractors. We had a huge amount of positive support that came through social media, and that was very reaffirming to everyone who was involved in a difficult process. So social media is not just about detractors, we had a huge amount of support out there from the community and prayers on encounters they had with staff.

Dr Graeme Cooke:

I think the biggest single change will be how will we have testing at the animal side and how will we incorporate that into the way we do things? The other biggest single change that I would like to see is that, and this is ideal, I know, but it would be great if people could think about biosecurity and the consequences it could have on their business. And Australia is highly export-driven, and as Andrew alluded to. That could stop overnight with enormous economic and rural society consequences. Wouldn't it be great if people could think of it in the same way people think about fires, taking preventive action, making sure that there's a inbuilt architecture that stops fires taking hold on their premises? I'm widening the knife a little bit. It would be good to have a number of exercises, and I know that's planned at the national level, in order to really deliver that level of advanced planning that is ready to roll out when we encounter the reality. And as has been said, that threat is markedly increasing. This is something we all need to do together, government and industry. Thank you.

Nick Housego:

Ladies and gents, we've come almost to the conclusion of the time we've got allocated here. We did get a count of over 300 recipients who've registered with us today, so it's been a good audience you've been talking to. Is much appreciated to say thank you to all presenters, you did a fantastic job, very innovative. There's a great deal of insights you've given to the people on the line. So fantastic. Thanking you. We'll close down.