Speaker 1:

Welcome to Urban Plant Health Network's podcast series The Good, The Bad, and The Bug-ly.

Drew Radford:

When it comes to biosecurity risks, it's not just exotic pests that can be threats to primary production. It's often the diseases that they carry. G’day, I'm Drew Radford and this is the case with the Asian citrus psyllid, which carries a bacterium which has devastated overseas citrus industries. Dr. Jessica Lye is biosecurity manager for Citrus Australia, and she's at the forefront of keeping Australia free of this pest and the disease it spreads. To find out more, she joins us for this Urban Plant Health Network podcast. Jessica, thanks for your time.

Jessica Lye:

Hi, Drew. Thanks for having me.

Drew Radford:

Jessica, we want to delve into the new industry protection program, but before we get into it in detail, I want to take a step back and look at an industry that has been decimated by disease, the Florida citrus industry. Can you describe what happened there in the early 2000s?

Jessica Lye:

This story goes back a couple of decades. It probably started in 1998. What happened back then was an insect was found on the coast of Florida in a pretty densely populated area in someone's backyard, and the insect that was found was called Asian citrus psyllid. It's not known how it actually got into Florida. It could have been on wind from the south, but essentially the alarm was raised at that point because that psyllid carries a really devastating bacterium that causes a disease called Huanglongbing, which translates to yellow dragon disease. It's actually the worst disease, most impactful disease of citrus in the world.

Jessica Lye:

So at the time it wasn't known if the disease was in Florida, but around 2005, it was confirmed that HLB was in fact in Florida. At that time, Florida was the major producer of oranges in the U.S. and a big part of the industry, the major part, was for oranges for juicing. Since HLB was found due to the impact that disease has on the trees and the need to eventually pull those trees out entirely, the overall production for the state has gone down from about 74% or so from what they were producing around 2000. So that's a huge decrease in statewide production.

Drew Radford:

That's total devastation to an industry really. Have there been any forecasts or predictions of what something like this would do to the Australian citrus industry?

Jessica Lye:

Well, I think we can learn from the situation in Florida. We can see the impact that the disease has had on citrus growing businesses and we understand through the management trials that have been done in Florida and other parts of the world that there is still no effective, certainly cost effective, management for this disease. The best management at the moment is still replacing trees much more frequently than you would necessarily do on a citrus orchard. You can imagine the kinds of costs that would lead to. So with the many other costs that farmers have to pay for to produce a crop in the first place and to get that produce to market, they would also be needing to replace trees at a very frequent rate if we were to get this disease, along with other management costs.

Jessica Lye:

So managing, for instance, the psyllid itself, there would be impacts in terms of how to move produce around the country. So there'd be increased costs in terms of perhaps the logistics side of things, treatment of fruit, how your packing house is set up. There'd be some pretty significant costs there.

Drew Radford:

Jessica, it sounds like then obviously the best solution is to make sure it never gets into the country, which leads us to CitrusWatch, a new program, which I understand is trying to prevent that. What's the overall aim of the program?

Jessica Lye:

So CitrusWatch is the newest version of the biosecurity program for the citrus industry. In saying that, it's probably not very well known, but the citrus industry has been funding its own exotic pest surveillance program for a number of years now. CitrusWatch is probably the largest survey program that we've ever funded. A major purpose of the program is to go out to citrus growing regions, but also to cities, particularly near large ports of entry, and conduct surveillance for key exotic species. The highest priority species that we're looking for is, of course, the Asian citrus psyllid and the disease that it can carry and cause, HLB. So we do volunteer based sticky trapping around the country every year and we also go out into regions and take bud sick samples and look at the trees. We choose those sites where we survey based on where there is a higher risk of the species getting into the country in establishing.

Drew Radford:

Are there other key species that have come under the umbrella of CitrusWatch?

Jessica Lye:

There certainly are. So we talk about Asian citrus psyllid a lot because it has most definitely had the highest impact on citrus overseas, but we know that there are many other exotic species that could do damage to our industry and also just generally to the citrus that you find in your own backyard. Some other species that we look out for that you might have heard before, one is the glassy-winged sharpshooter. That's a species of sharpshooter that carries an exotic bacterium called Xylella fastidiosa and that causes diseases in a variety of plants. There are various beetles and exotic mites that can cause issues in citrus. So we have an industry biosecurity plan that effectively lays out priorities for us and what species we should be looking for that have the highest chance of entering the country and establishing in the country. So we definitely keep an eye out for those other species as well.

Drew Radford:

You mentioned the sticky traps and some of the surveillance that is going on around ports, et cetera. How can urban gardeners get involved in their own backyards?

Jessica Lye:

Well, in their own backyard, there's a very direct way of getting involved and that is to get in touch with the CitrusWatch program and an easy way to do that is to go to the Citrus Australia website, citrusaustralia.com.au. We have an opt-in form on that website and you can opt in to put out a sticky trap a year or two or five sticky traps a year, and we will send those trapping kits to you with instructions for how to put out the sticky trap. We send a little attractant lure with the trap. It has a smell that's very, very attractive to Asian citrus psyllid and we send you a prepaid reply envelope. So when you're done with the trapping, you can just pop the sticky trap back in the envelope and send it back to us and we screen those sticky traps for exotic species.

Jessica Lye:

That's a really powerful tool for our industry is getting volunteers involved, particularly volunteers who have citrus in an urban backyard, perhaps near to a port of entry. That's one way you can get involved. Another way is just simply getting out there and learning a little bit about the kinds of species that you'd regularly see in your citrus trees in the backyard. Most people have walked out into their backyard and had a little wander around and noticed some red scale on their citrus. Certainly a lot of people have noticed citrus gall wasp, particularly in Melbourne over recent years, and just getting a feel for what's normal. Then if you see something unusual one day, that's when you might want to raise the alarm.

Drew Radford:

I assume also that making sure our citrus industry is well protected also helps us secure overseas markets as well.

Jessica Lye:

Yes. So that is definitely the other side to this. Perhaps during COVID people got a bit of an idea of how complex reduced supply chains can be. The other side of that is what we produce that we don't sell here in the country gets sent overseas to sell it elsewhere, which is really excellent for our economy. We have a very good status in Australia because we are known to be relatively free of some of the most harmful exotic plant pests found around the globe and that's a reputation and a standing that we really do want to protect. So through the surveying that we do, we can go out to X number of regions and X number of sites and collect ... we call it collecting those zeros. We can show that we've undertaken a rigorous assessment of the plants at each site and we have not found evidence of the top five or six pests that might be of concern to those markets that are important to our industry.

Jessica Lye:

We can keep all of that data together and if there is a concern raised, if an importing markets says, "Oh, we think you might have this pest that we are concerned about," well, we can go back and say, "Well, we've done these surveys and we have the data, and we're pretty sure that we don't." So it's a really important tool in that way to have that data at our fingertips as an industry.

Drew Radford:

Jessica, clearly this is a terrible disease that needs to be kept out of the country and it's just part of the bigger story, though, of the importance of plant biosecurity.

Jessica Lye:

The work done in plant biosecurity is often unnoticed. I think it's a case of ... it's more like insurance. You don't realize what's going on behind the scenes. You realise it when something gets out. There was a report that came out last year from the auditor general that estimated that in the first nine months of 2019 and 2020, there were over 38,000 people coming into Australia with undetected biosecurity risk material. We'll be getting more passengers into the country, more cargo into the country, more parcels coming into the country, so we just need to get a little more effective at how we're doing these surveys and we need to get people on board. So we need to create a biosecurity culture in Australia.

Drew Radford:

Wow, Jessica, that figure of 38,000 is truly disturbing and it says we certainly do need to create a culture of biosecurity. All the best, Dr. Jessica Lye, biosecurity manager for Citrus Australia, in your work can help creating that culture and thank you for joining us in the Urban Plant Health Network studio.

Jessica Lye:

Thank you, Drew,

Speaker 1:

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