Speaker 1:

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

Speaker 2:

There are many good bugs that keep our gardens healthy in lots of different ways. These beneficial insects and spiders provide all sorts of services that we're rarely aware of, ranging from pollination all the way through to waging tiny wars with bad bugs. To find out more about those beneficial insects, and also why we should be kind of spiders, I'm joined in the Urban Plant Health Network studio by Dr. Lizzy Lowe from Macquarie University. Lizzy, thanks for your time.

Lizzy Lowe:

Hi, thanks so much for having me on today.

Speaker 2:

Now, Lizzy. The term beneficial insect, what's that actually mean?

Lizzy Lowe:

Yeah. Well, it's one of those funny things that when people think about insects, they don't often think about the benefits, do they? They usually think about the harm that insects can do for us. So if you actually Google insects, you come up with a whole list of plague and pestilence basically, but there are a whole lot of really, really important jobs that insects can do for us, and so the insects that do those important jobs, we term them beneficial insects because there's actually some real benefits that we have from having them in our ecosystems.

Speaker 2:

Okay. Well, what are some examples of those benefits, particularly for urban gardeners?

Lizzy Lowe:

Yeah, I mean, one of the easiest examples that everybody would recognise is the honeybee. So the honeybee is very beneficial for us because we obviously need it for pollination. If you didn't have those bees out there doing those important jobs, then a lot of the plants that rely on being pollinated wouldn't be able to make their fruits. So honeybees are the best example, but of course there are lots of other bees, native bees in Australia that you'll see in your back gardens, which are really important for pollinating native plants.

Other benefits that insects have are things like breaking down leaf litter, so they're called detritivores, and actually, they live down in the soil and they make sure that all of the dead leaves and animals in the soil get kind of broken down and that nutrients gets returned into the soil. So, I imagine if we didn't have that job, if we didn't have all those little critters in the soil breaking things down, then we wouldn't get those nutrients back and we'd have a huge build-up of leaf litter.

Of course, my favourite beneficial job that some insects and spiders have is they're really, really good at eating pests. Things like spiders have kind of been evolving for millions and millions of years to eat insects, so they're really good at it. So, we could actually be relying on these beneficial creatures much more often to do our pest control for us.

Speaker 2:

You raise spiders, that's a specialty for you. You often hear the term, unfortunately, the only good spider is a dead spider. But they control a whole lot of pests that you really don't want in your backyard, don't they?

Lizzy Lowe:

Yeah, they definitely do. I think when people think about spiders, they often think about the instantly scary ones. So, people are quite familiar with things like Huntsman in their houses. But spiders are actually so much more diverse than that. So, we've got about 4,000 known spiders species in Australia, but there's likely to be at least double that many that we haven't even discovered yet, and there's so many weird and wonderful different types of spiders. They're all different colours. They've got lots and lots of different, weird and wonderful ways of catching prey, and because they are so varied, it means they can catch lots of different types of bugs as well.

So, if you've got lots of different types of spiders in your garden, you're actually doing a really good job to keep the ecosystem in balance to make sure you don't get too many of those flies and cockroaches in your gardens. I mentioned Huntsman, Huntsman are actually very, very good at eating cockroaches. So I would much rather have one Huntsman running around my house than a whole lot of cockroaches.

Speaker 2:

By and large, the spider’s that people are scared of, there's really only a couple that are actually potentially dangerous, aren't they?

Lizzy Lowe:

Yeah, it really is all about talking about the risk that people face. So, when you talk about risk, it's kind of you have to weigh up the risk of having one spider compared to having multiple cockroaches or to even using pesticides in your houses. So as far as I'm concerned, the risk of spraying chemicals around your house is actually much higher than the risk of being bitten by a spider. So, spiders are very, very unlikely to bite you, and there's actually only 0.05% of spiders that will do any harm at all.

Of course, there are a couple of dangerous spiders in Australia. We do have the Sydney funnel-web and redback spiders. Even if you do get bitten by one of these spiders, nobody has died of a spider bite in over 40 years. So, the risk that spiders present is actually very, very low.

Speaker 2:

So, 0.05%, that's remarkably low. You also made the point there, you consider the risk of spraying higher. What do you mean by that?

Lizzy Lowe:

Well, when it comes to pesticides, there's a lot of new information coming out, especially through Europe, that things like neonicotinoid pesticides, they've been banned because of the negative impacts that they have on bees, and there is information coming out that it can have negative impacts for human health as well. So, I think it's always just safer to assume that you want to use as few pesticide chemicals within your house and garden as possible because we really don't know the full effects on us and on the environment yet. The best possible way that you can deal with pests is to get nature to help you and to get these pest controllers like the Huntsman to come in and do some of the pest control for you because they're not going to leave any nasty chemicals behind.

Speaker 2:

What do you do then, Lizzy, to actually make your garden or your house more conducive to having these natural pest controllers in place?

Lizzy Lowe:

The first thing that you can do is stop spraying. So, one of the things about having a nice garden with lots of insects in there is that you basically have to let them come back. You have to stop spraying and let them reform that balance. One of the best things you can do for things like spiders and predators is to give them things to eat. So that means other bugs around, and sometimes that means you may see little fluctuations in pests, but as you have things like aphids and cockroaches around, those predators will come back in and eat them.

So if we're talking about beneficial insects altogether, one of the best things you can do in your garden is to have native flowers because then we bring the pollinators in, and when there's pollinators and other bugs there, the predators are going to come in again as well. Really, really about creating balance in your garden, having lots of flowers. Also, having a little bit of leaf litter and vegetation around because they need places to live. Water is another important element. So, we do know we have to be careful about having standing water in our back gardens because that can attract mosquitoes. But again, there are really good predators out there for mosquitoes.

So, dragonflies are a really good example because, I don't know if you know, but when mosquitoes are babies, they're actually in the water. They're kind of little grubs swimming around, and dragonflies are the same. So, dragonflies in their juvenile stage live underwater and they're amazing predators. They've got these big jaws that they can use to eat up baby mosquitoes. So again, having resting water can be a problem if you don't have biodiversity, if you don't have lots of different animals around, but if you get those dragonflies in, then they'll keep the mosquito problems under control.

Speaker 2:

Does it take long then, Lizzy, to try and reset that balance in your garden to introduce some native species and try and bring that balance back into play? Are there any key native species that can really help you get off to a flying start in terms of plants?

Lizzy Lowe:

In urban areas, I mean, when you've got gardens things, it's a little bit difficult of course, because you're not just your garden. You're surrounded by other people's gardens and they might have very different management practices to you. So, it's all well and good for you to stop using insecticides, but you're never quite sure what's happening just over the fence. So, it can be a little bit difficult, and we really need to start thinking about how we manage urban green space on a larger scale.

But if we come back down into your garden in particular, the turnaround can happen quite quickly. If you start planting some nice native plants, maybe mowing a little bit less frequently, so giving some grass around the corners and leaving some leaf litter, the best thing about insects and spiders is that they can travel quite easily. So those barriers such as fences and things don't mean a lot to them. If the habitat is there, if they've got the water and the food that they need, they will recolonise quite quickly.

So, some plants that are really good in back gardens are things like Grevilleas because they have really beautiful flowers, and a lot of bees and birds will both like Grevilleas. As far as other plants are concerned, even non-native plants like tomatoes and lavender and things like that, anything with a flower is going to attract bees in. So, it's really good just to have a variety of different plants in your garden to get different kinds of insects in.

Speaker 2:

I assume also, Lizzy, there's a flow on further up the food chain in terms of more bird life. Is that another result of looking after the insect life?

Lizzy Lowe:

Yes, definitely. So, there are a lot of birds that are what we would call insectivorous. They eat insects and that's actually another really important element of beneficial insects. So, one huge benefit of having healthy insect populations is that you're providing food, not just for birds, but for reptiles and even small mammals living in urban areas. So they're very, very much the bottom of the food chain and that will be working its way up as well, which is actually another really important reason not to use insecticides in your garden, because if you're spraying the insects and then the birds are coming in and eating them, you've got the risk of them poisoning those birds as well and that's the last thing that we want to be doing in our back gardens.

Speaker 2:

Lizzy, if people want to find out more about some of the insects in their gardens and also spiders that might be of benefit, where can they go to find more resources and information?

Lizzy Lowe:

Yeah, it's definitely a really good idea to get kind of acquainted with what's living in your back garden. It can also be good to identify things if you are scared of them, because that will kind of reduce your fear if you know what you're dealing with and you know that they're not dangerous. So as far as spiders and insects are concerned, there are some great resources online that you can use. One of them is called iNaturalist and it's actually a giant citizen science platform, which happens all across the world, and you can take a photo of something that you've identified, upload it, and then that information is then available to the public and experts from around the world can log in, have a look at that photo and can provide you with an identification.

The ID that you've given can then also be used by scientists to see where different species are around the world. So that's a really, really amazing way that you can identify insects in your back garden, but also contribute to science, which is very cool. I know that the Australian Museum also has a really good section on identifying different insects and spiders as well. So, it really just takes a little bit of looking around and starting to understand a bit more about those creepy, crawly critters that are living in your areas.

Speaker 2:

Dr. Lizzy Lowe from Macquarie University. Thank you for shedding some light on the beneficial insects that we should all be looking out for in our backyards and thank you for joining me in the Urban Plant Health Network studio.

Lizzy Lowe:

Absolute pleasure. Thank you so much.

Speaker 1:

Thank you for listening to The Good, The Bad, and The Bug-ly. For more episodes in this series, find us and subscribe wherever you get your podcasts. We would love to hear your feedback, so please leave a comment or rating and share this series with your family and friends.

All information is accurate at the time of release. This podcast was developed for the Urban Plant Health Network.