Spotted wing drosophila: go-to preparedness resources for time-poor advisors

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MT17005 'Improving the biosecurity preparedness of Australian horticulture for the exotic Spotted Wing Drosophila (Drosophila suzukii)

Are you an agronomist, field entomologist, biosecurity officer, industry development manager, or just generally a really popular go-to font of knowledge for your respective industry? If the answer is 'yes' then you would likely be expected to keep your finger on the pulse when it comes to important endemic and exotic agricultural pest species – but it can be so hard to find time to stay informed, right?

If you work in a soft fruit industry, such as berries, grapes or summerfruit, you will likely have heard the name of one particular exotic species being mentioned once in a while. It is the spotted wing drosophila (*Drosophila suzukii*).

The quick and dirty on SWD

While not yet found in Australia, spotted wing drosophila has caused quite a few headaches overseas. This exotic fly can pierce and lay eggs in unripe fruits still on the vine, and it is persistent in both warm and very cold environments.

Larvae stay protected from chemical controls as they feed within the fruit, and adult flies can quickly build up in large numbers, particularly if fruit waste is left to rot in paddocks.

During a recently concluded Hort Innovation project, led by Plant Health Australia, we collected reports of yield loss resulting from spotted wing drosophila infestations in a range of crops. Reported losses vary from no loss to 100% loss, with the majority of yield loss reports arising from raspberry farms. Losses of 20-40% are most commonly reported.

These yield loss estimates do not include additional impacts for industry, such as from the downgrading of product and consumer concerns. Additionally, costs may also arise from changes to management throughout the supply chain and flare up of secondary pests if chemistry is applied more regularly.

Why is early industry know-how important?

When analysing data from US farms, we found that there is a negative trend between time passing and yield loss, likely due to improved management practices over time.

This means that industry knowledge brokers (you guys) are going to play a crucial role when it comes to minimising long term impacts of spotted wing drosophila on farms when this pest is found in Australia – and to be clear, we don't think it's a case of 'if' – spotted wing drosophila is very good at hitchhiking its way into new territories.

The best time to build your knowledge base is before a new pest arrives in the country – the luxury of learning at your own pace is lost when a pest incursion occurs and the phone starts ringing! The need is particularly high if that pest has been shown to spread readily to new regions and creates a high economic impact after arrival - like with the spotted wing drosophila.

The map in Figure 1 shows regions where spotted wing drosophila is likely to establish. After simulating spread of this species following the most likely scenario – entry of this pest through an Australian international port – we predict that it will establish in these regions within six years of an incursion.

In Australia, like overseas, management would involve introducing a range of integrated practices to maintain crop quality and minimise losses.

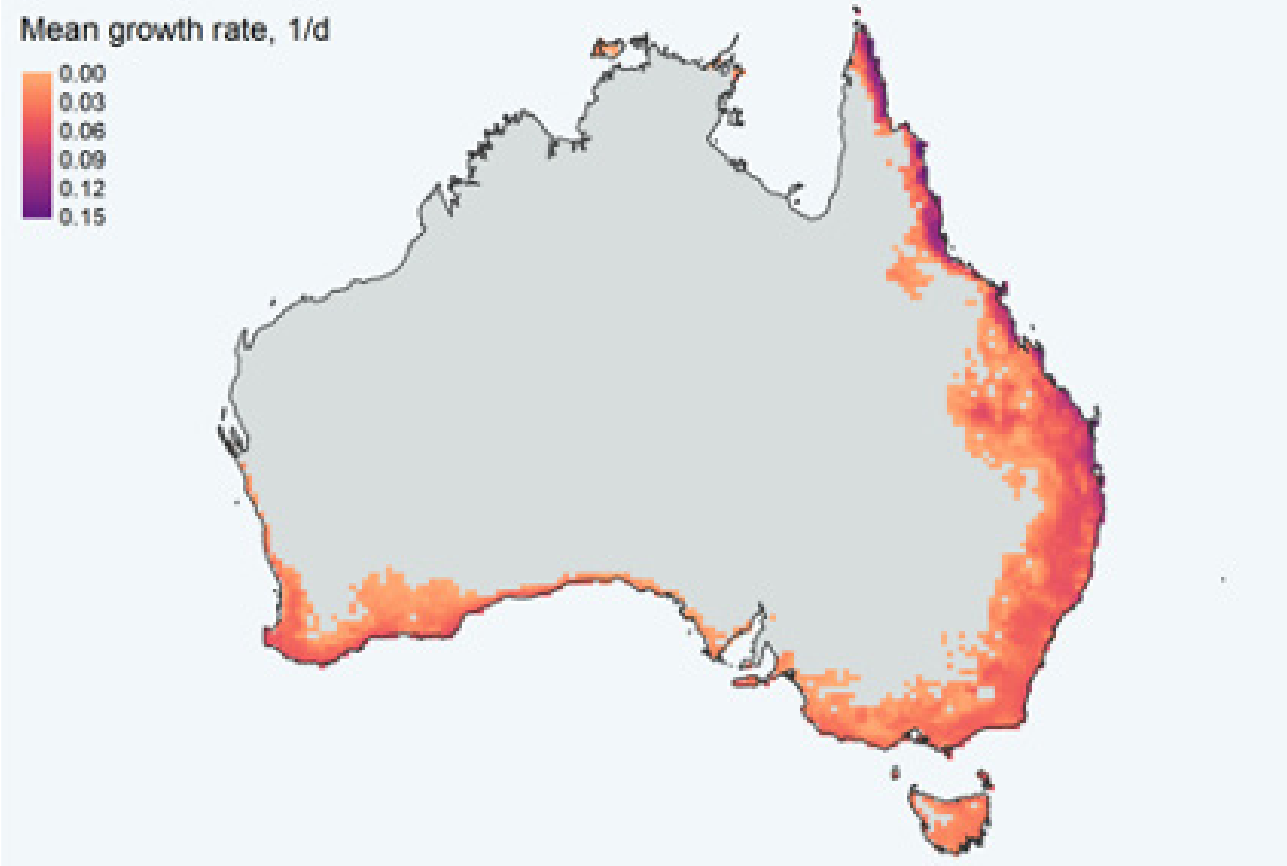


Figure 1. Predicted establishment of spotted wing drosophila. Source: Dr James Maino, cesar Australia

Learn and extend, then do it again!

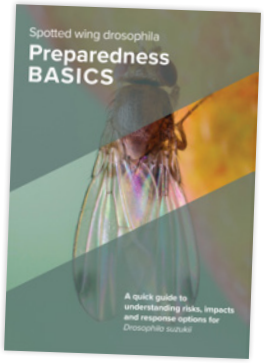
To make it easier for you to build your knowledge on the pest, cesar and its project partners have developed a *spotted wing drosophila Preparedness Basics Guide* — a simple go-to for the quick and dirty on spotted wing drosophila, which complements a detailed spotted wing drosophila Preparedness Plan.

You can find these resources, as well as a collection of educational and outreach resources in our spotted wing drosophila Extension Pack, which can be accessed at bit.ly/SWDExtensionPack. In addition, the final report for the recently concluded spotted wing drosophila preparedness project is now available on the MT17005 Hort Innovation website.

All we ask is that you share your new knowledge with a few green thumbs and ask them to do the same.

In this way we can build the confidence of growers and other horticultural businesses just a little bit more with each person who shares their knowledge.

Spotted wing drosophila Preparedness Basics is your quick guide to getting up to speed on this exotic pest.



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