NSW GOVERNMENT Department of Primary Industries

primefact

Exotic Pest Alert: Spotted wing drosophila

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Plant Biosecurity Orange

Spotted wing drosophila (*Drosophila suzukii*) is an exotic plant pest

This insect pest is a serious threat to Australia's **cherry and berry fruit industries**

If found it must be reported promptly to the Exotic Plant Pest Hotline **1800 084 881**

Spotted wing drosophila

Spotted wing drosophila (SWD) is a small fly similar in size to vinegar flies which sometimes gather around over-ripe fruit.

Damage

Most drosophila flies feed on damaged over-ripe fruit. Spotted wing drosophila is a serious pest because it attacks healthy ripening fruit as well as damaged or split fruit.

Female SWD prefer to lay eggs in ripe fruit (Figure 1) but will also lay eggs in unripe, overripe and damaged fruit.

The female SWD penetrates the skin of soft-skinned fruit with a large serrated ovipositior. Eggs are laid just under the skin of the fruit creating a small puncture or 'sting' on the fruit surface.

Affected fruit does not show obvious symptoms of infestation until the flesh starts to break down leading to discolouration. White larvae are noticeable in the rotting flesh (Figure 2).

Description

Adults

Adult flies are 2–3 mm long with a wing span of 6–8 mm. Male SWD flies are typically smaller than SWD female flies.

Figure 1 Adult spotted wing drosophila on a raspberry fruit (arrowed)

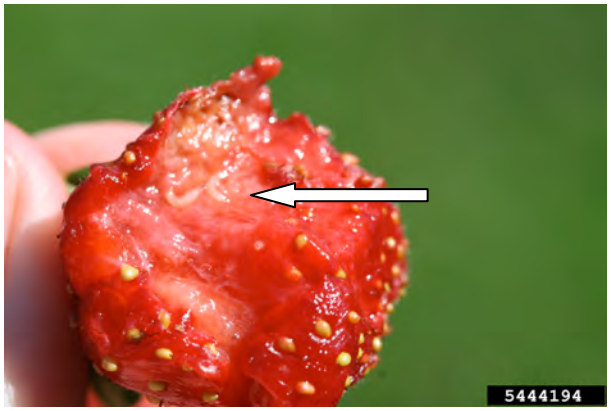

Figure 2 Spotted wing drosophila larvae in a strawberry fruit (arrowed)

Adult flies have red eyes a pale brown thorax and abdomen, and black stripes across the abdomen. Male SWD have a black spot on the end of each wing as well as two black combs on the front legs.

Female SWD have a saw-like ovipositor which can be seen when extended and is used to puncture the skin of fruit for egg laying.

Immature stages

Eggs of SWD are 0.6 mm in length and are oval shaped and white in colour.

Larvae are white to cream in colour, cylindrical and up to 6 mm long when fully grown (Figure 2).

Pupae are cylinder shaped, reddish-brown coloured and 2–3 mm in length. Pupae have two small projections on one end which are used for breathing.

Lifecycle

SWD overwinter as adult flies which then become active as temperatures rise. Female flies lay eggs in host fruit, the eggs hatch and the larvae develop and feed inside the fruit.

Larvae develop through three larval instars.

Eggs, larvae and pupae all vary in developmental time depending on environmental conditions. Generations over the summer months have the shortest development time.

Host range

Horticultural commodities affected by SWD include cherries, peaches, nectarines, apricots, plums, prunes, Asian pears, table grapes, blueberries, raspberries, blackberries, boysenberries and strawberries.

Preferred hosts are all softer-fleshed fruit.

Distribution

SWD is widely distributed in temperate and subtropical Asia.

SWD has a restricted distribution in India and Pakistan.

SWD has spread to Hawaii, North America, Central and South America.

SWD has also spread to the European countries of Italy, Spain and France.

Spread

SWD can only fly very short distances.

Human assisted transport rather than natural dispersion has spread this pest internationally.

Actions to minimise risks

Put in place biosecurity best practice actions to prevent entry, establishment and spread of pests and diseases:

- practice “Come clean, Go clean”
- ensure all staff and visitors are instructed in and adhere to your business management hygiene requirements
- source propagation material of a known high health status from reputable suppliers
- monitor your fruit crops regularly
- keep records

Reporting

If you suspect spotted wing drosophila:

Call the Exotic Plant Pest Hotline on **1800 084 881**

Take photos not samples to minimise the risk of spreading this pest

Email clear photos with a brief explanation and contact details to biosecurity@dpi.nsw.gov.au

An **exotic plant pest** is a disease causing organism or an invertebrate not present in Australia and which threatens agricultural production, forestry or native and amenity plants

Resources

Biosecurity Australia (2010) Draft pest risk analysis report for *Drosophila suzukii* Biosecurity Australia, Canberra.

More information

NSW DPI Primefact 1119 (August 2011) Come Clean Go Clean: a step by step guide to vehicle wash down

Acknowledgments

Figures 1 and 2 courtesy of Hannah Burrack, North Carolina State University, Bugwood.org

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