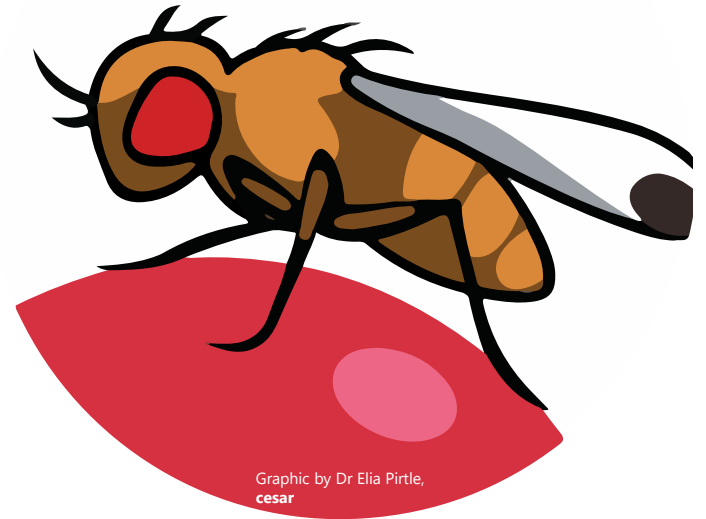


The exotic spotted wing drosophila: Pest Overview



Graphic by Dr Elia Pirtle,
cesar

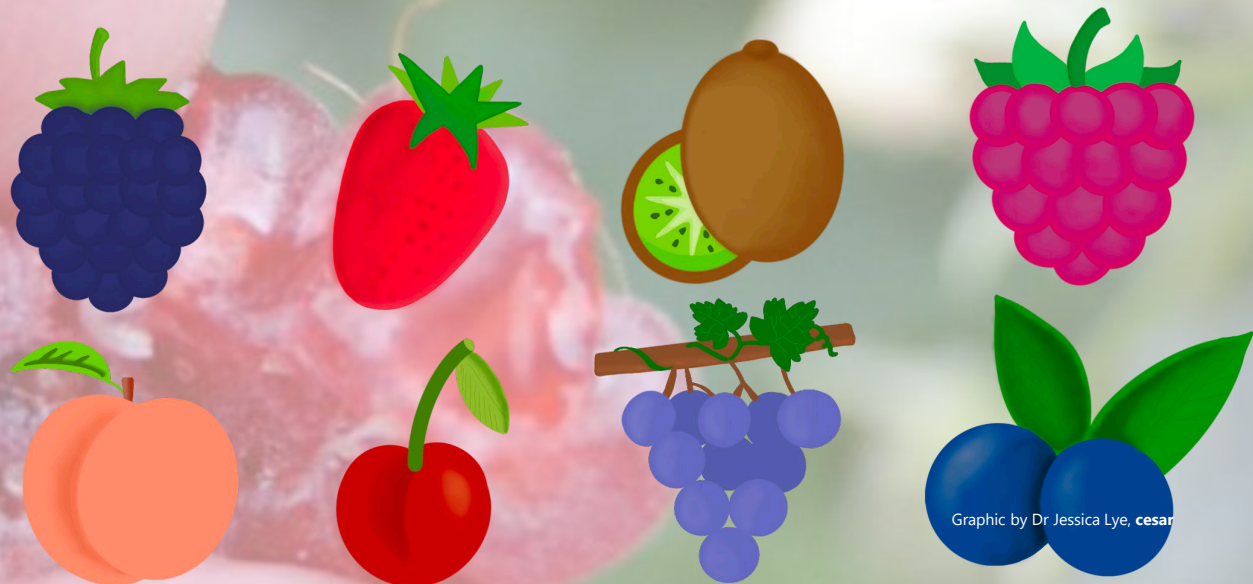


The spotted wing drosophila

The exotic spotted wing drosophila (*Drosophila suzukii*: SWD) is a near global pest of many high value fruits.

The spotted wing drosophila is not found in Australia.

Early fruit drop, downgraded fruit quality, secondary infections from mold and bacteria, and yield reductions are some direct impacts of SWD infestation of a crop.



Graphic by Dr Jessica Lye, cesar

SWD Hosts

Cane berries, summerfruit, grape, cherry and blueberry are preferred hosts.

Controlled experiments in laboratory settings have given some idea of host preference.

A Host Potential index developed by Bellamy et al. (2013) indicates order of preference.

The index indicates that raspberry is a highly preferred host.

SWD Identification

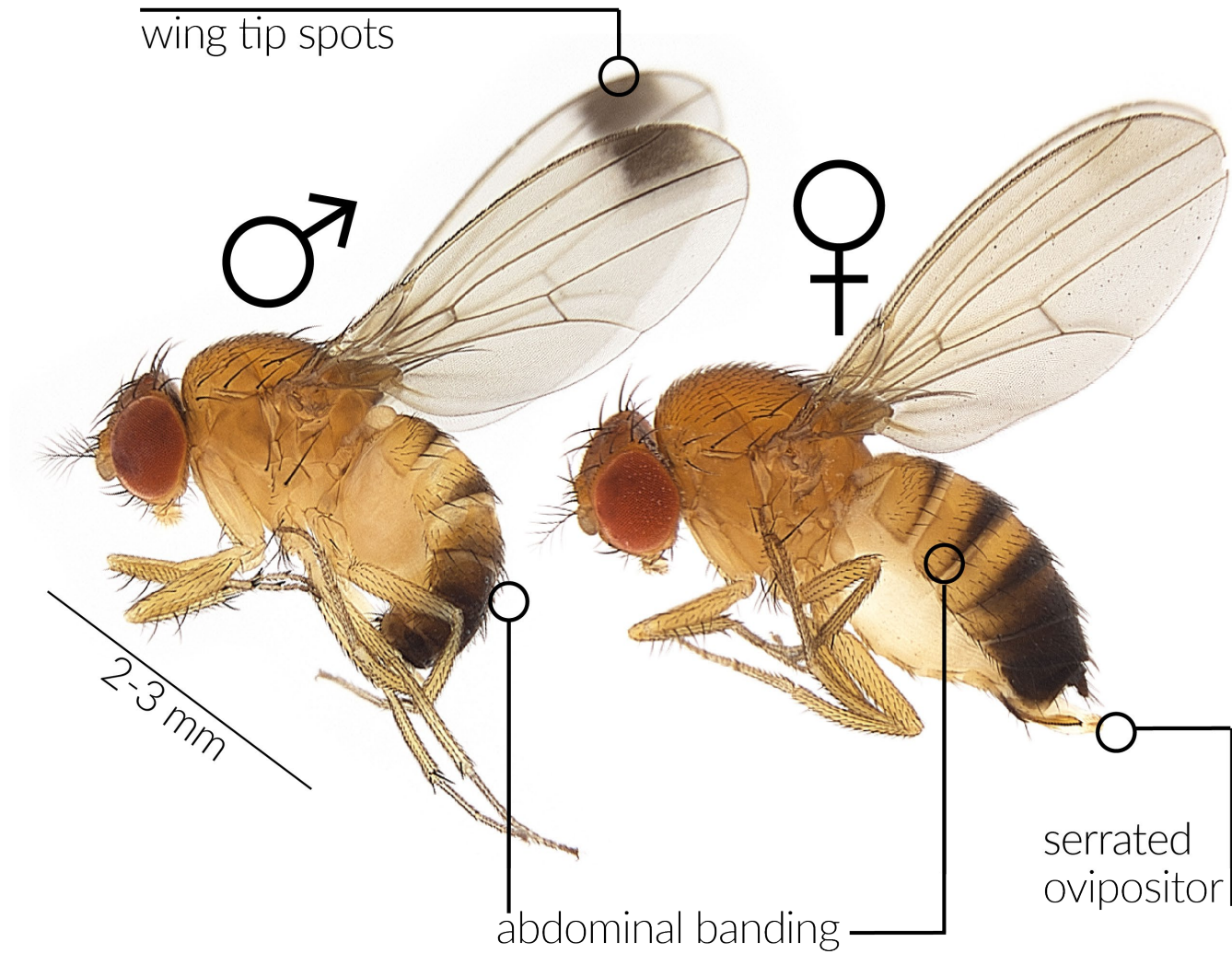
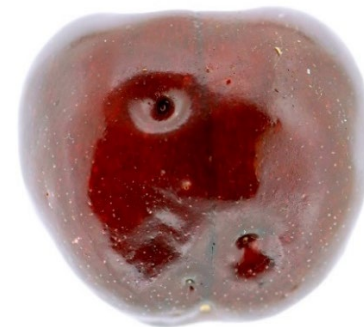
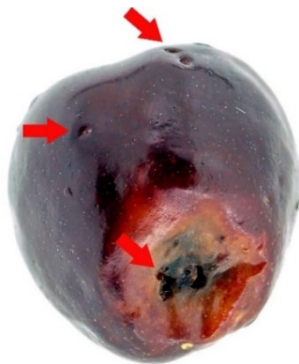


Photo source: McEvey (2017)

SWD Identification



Look out for aborted drupelets, evidence of oviposition (pinpricks), egg filaments external to fruit, eggs inside fruit, larvae inside fruit.

Blueberry photos: Matteo Maspero and Andrea Tantardini, Centro MiRT
Fondazione Minoprio Como, Italy, EPPO

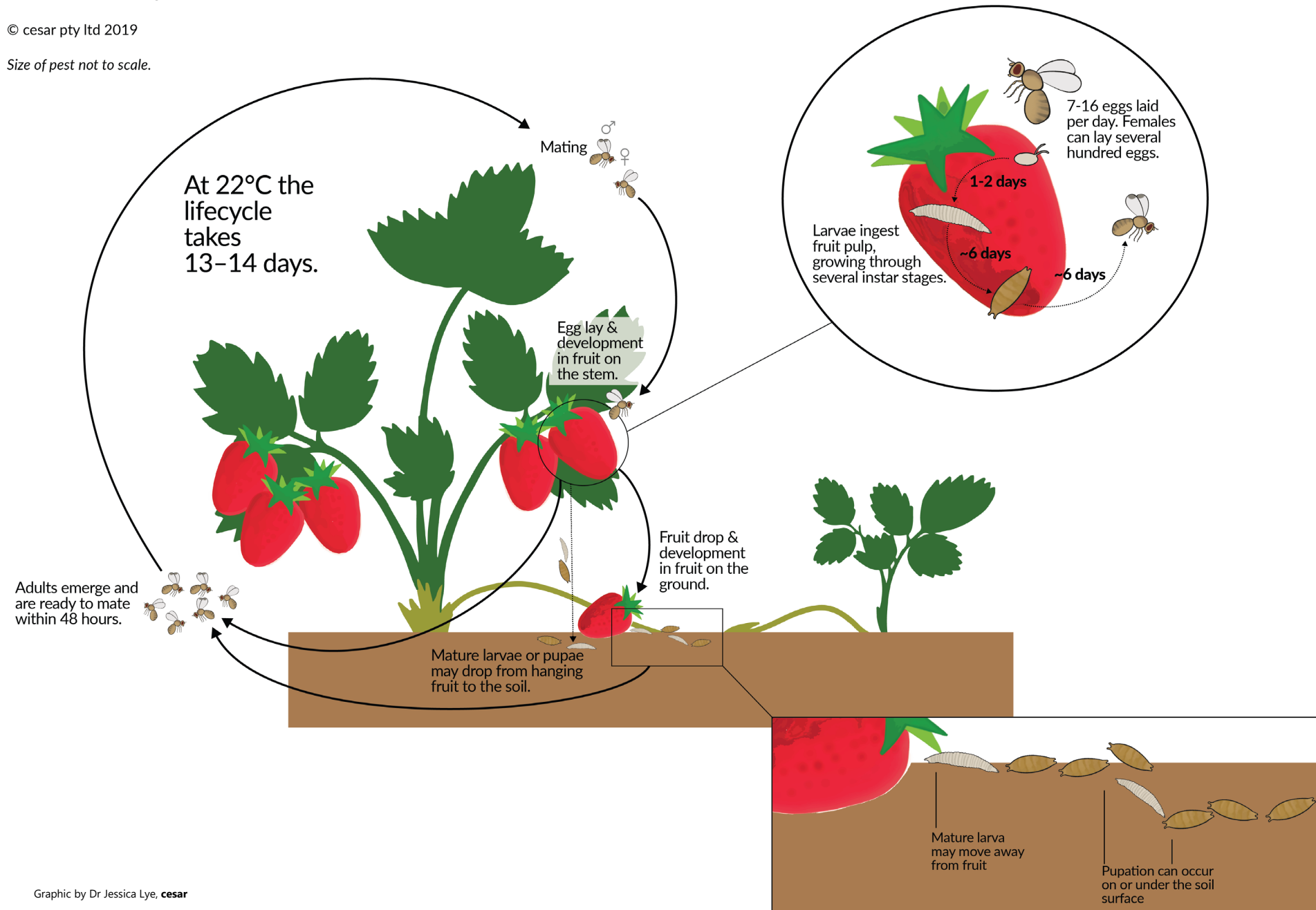
Raspberry photos: H. Burrack, NCSU,

Blueberry photos: Martin Hauser, California Department of Food and
Agriculture

Lifecycle

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Size of pest not to scale.



	Generation time		Reproductive rate	
Temperature (degC)	Cherry	Blueberry	Cherry	Blueberry
14	43 days	39 days	Low	Low
22	24 days	25 days	High	High
28	12 days	12 days	Very low	Very low

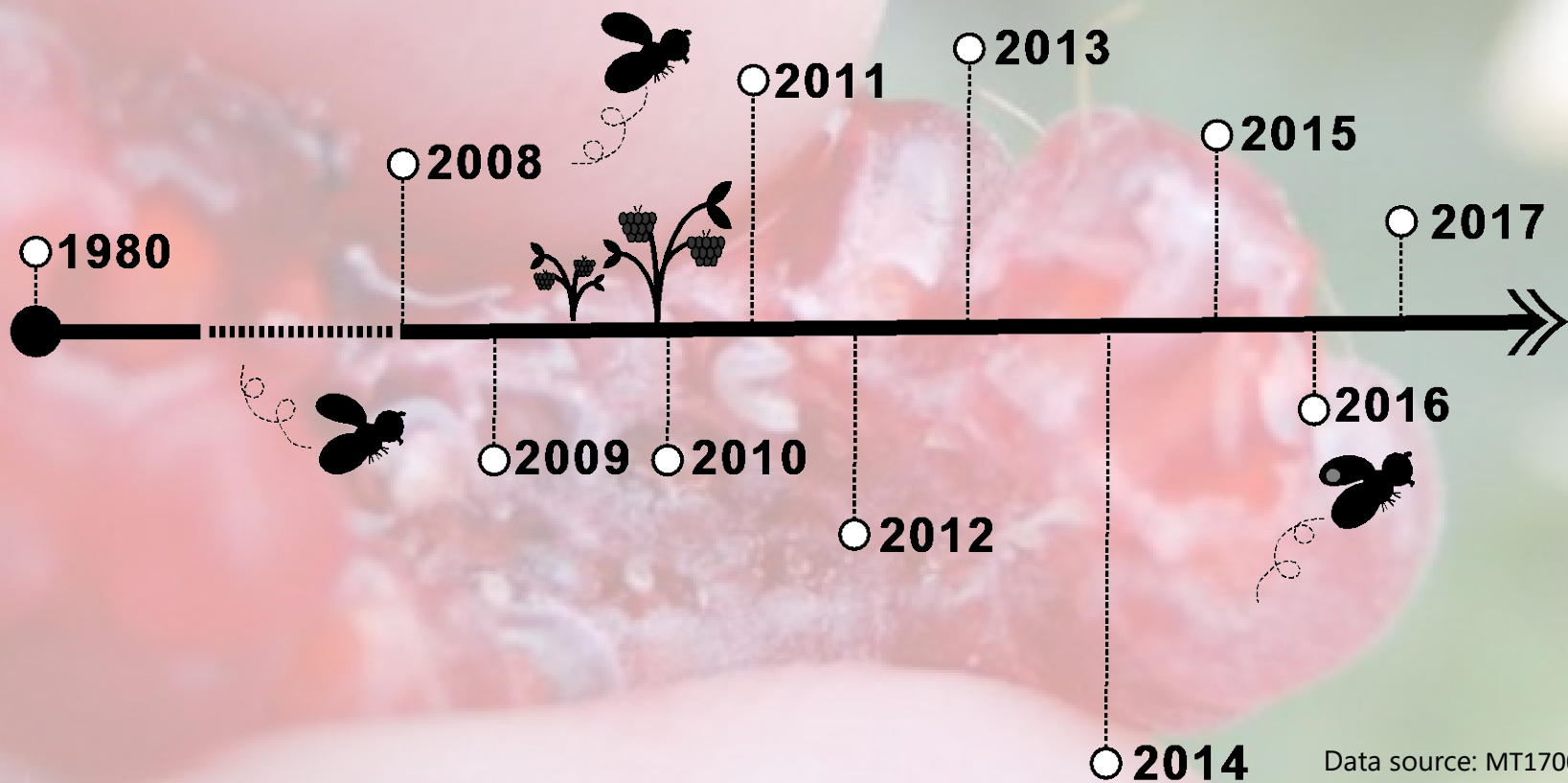
Data source: Tochen, S. et al. (2014)

SWD Biology

A female fly lays 1-3 eggs per site and can lay up to 400 eggs throughout her lifetime.

Population growth throughout a season is highly dependent on environmental conditions.

SWD will rapidly increase its population size under mild conditions (approx. 22degC)



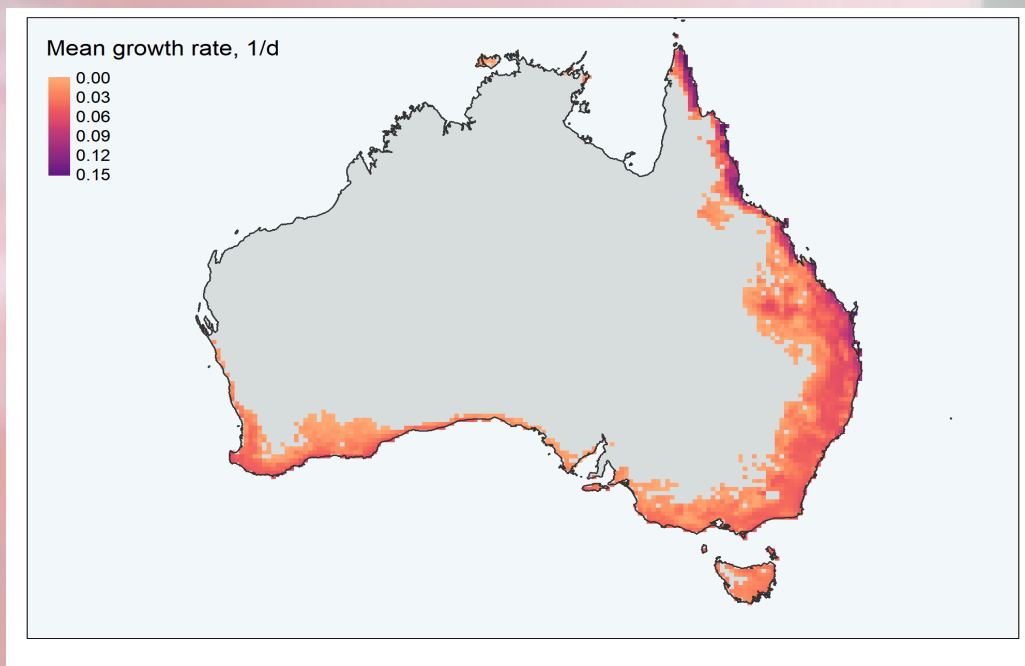
Data source: MT17005 literature review by Stringer, L et al. (2019)

Global spread

Long range transmission has been aided by movement of people and host fruit. The larvae of SWD can remain undetected in fruit pulp.

The adult is cryptic in appearance and can be mistaken for other *Drosophila* species.

In more recent years this pest has been detected in the USA and Europe.



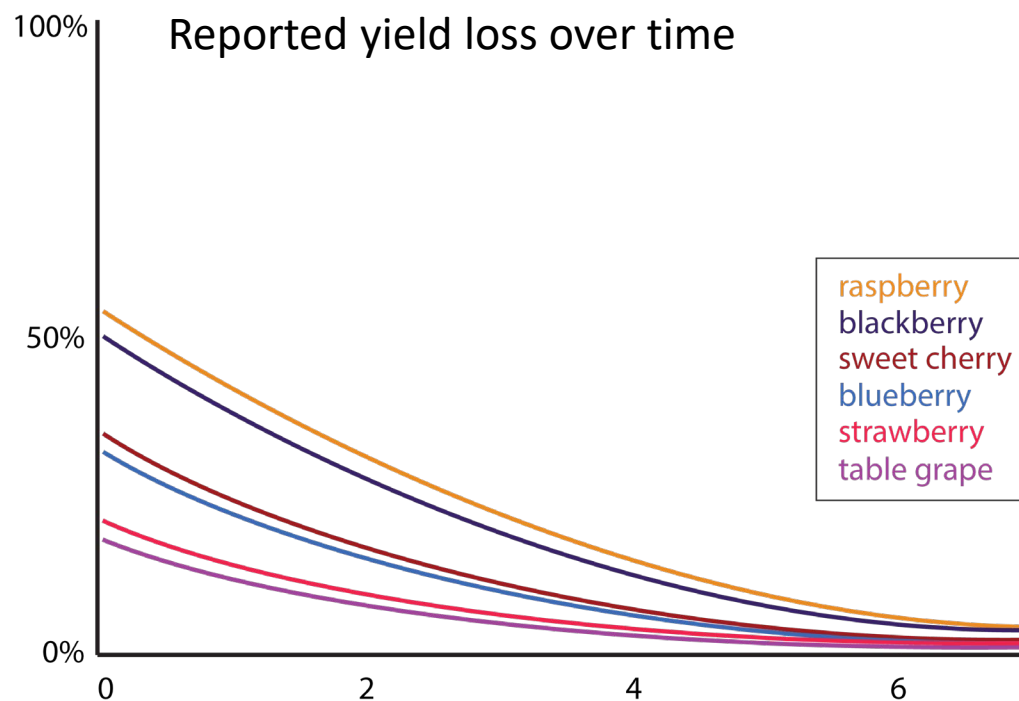
Data source: MT17005 report
by Maino et al. (2020)

Spread

Modelling research has indicated that SWD will spread quickly and establish in suitable areas within 6 years.

Suitable establishment regions include the east coast of Australia, Tasmania, parts of Victoria and South Australia, and parts of south western Western Australia.

Common name	Proportion reported yield loss			Number of reports
	Mean	Min	Max	
Blueberry	0.14	0	1	56
Raspberry	0.31	0	1	52
Blackberry	0.24	0	1	45
Sweet cherry	0.17	0	0.9	17
Strawberry	0.08	0	0.8	45
Table grape	0.07	0	0.35	23



Data source: MT17005 report by Maino et al. (2020)

Spread

Reports of yield loss overseas vary, with raspberry demonstrating highest impacts.

Yield loss reduces overtime as management becomes more effective.



Reporting

To best protect Australia from this pest it will require a whole industry approach.

If you see anything unusual call the Exotic Plant Pest Hotline on **1800 084 881**.



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These slides are a component of the SWD Extension Pack, an output of project MT17005.

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Personnel involved in this project: Dr Sharyn Taylor (Project lead, Plant Health Australia), Dr Daniela Carnovale (Plant Health Australia), Dr James Maino (**cesar**), Dr Jessica Lye (**cesar**), Raf Schouten (**cesar**), Dr Lloyd Stringer (Plant & Food Research), Dr David Bellamy (Plant & Food Research), Dr Mark Bullian (Plant & Food Research), Anna Rathe (HortNZ). The Hort Innovation portfolio manager was Dr Penny Measham.

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