

Urban Plant Health Network Presents



ACTIVITY BOOK



Australian Government
Department of Agriculture,
Water and the Environment



INTERNATIONAL YEAR OF
PLANT HEALTH
2020

AGRICULTURE VICTORIA



ASIAN CITRUS PSYLLID

*The Asian citrus psyllid (*Diaphorina citri*) is a sap-sucking bug that is a serious pest of citrus. They cause direct damage to citrus plants by feeding however it is their capacity to spread the bacterial disease citrus greening (huanglongbing) that is most damaging.*

HOW TO SPOT IT?

- Small (<0.5 mm) eggs, light yellow to orange in colour. Eggs are laid on the tips of growing shoots and between new leaves. One female can lay 300-800 eggs during her lifetime
- Adults (3-4 mm long) are a mottled brown colour with a light brown head. Wings are transparent with brown mottling and spots especially around the edges.
- Asian citrus psyllids are commonly found on young, tender leaves. On established growth, psyllid adults can usually be found on the underside of leaves.
- Adult ACP have a distinctive feeding style with their bodies forming an angle of 45 degrees to the leaf surface. Adults will jump a short distance when disturbed.
- When damaged, leaves may show curling, leaf drop and sometimes death of shoots.
- White waxy secretions on leaves are a clear indicator of this species. There may also be honeydew and black sooty mould development.



Image: David Hall, Agricultural Research Service, USDA

HOW IS IT A THREAT TO VICTORIA?

Neither the Asian Citrus Psyllid nor citrus greening are present in Australia, however they would present a major economic threat to citrus growers if they became established. The ACP has previously entered Australia and was eradicated.

ACP will affect all commercially grown citrus, some native Australian *Citrus* species and citrus relatives that exist in native or naturalized vegetation as well as home gardens and parks.

HOW DO I REPORT IT?

If you think you have found Asian citrus psyllids (or any other unusual insect), catch it in a container and call the Exotic Plant Pest Hotline on **1800 084 881**.

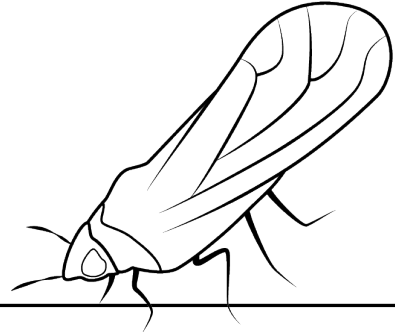
Or report it through the MyPestGuide Reporter app <https://mypestguide.agric.wa.gov.au/reporter/#/> making sure you choose **My Pest Guide** in the "Send report to:..." field.

Email photos of the suspected pest and damage, along with your contact details and the pest's location to plant.protection@agriculture.vic.gov.au

WORD FIND

Can you find the five words listed below?

PSYLLID CITRUS SAPSUCKING HUANGLONGBING BACTERIAL HONEYDEW





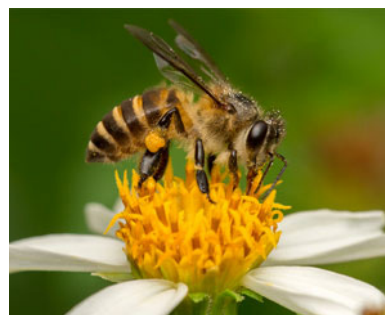
ASIAN HONEY BEE

*The Asian Honey Bee (*Apis cerana*) was first detected in Cairns in 2007, and at this stage haven't been detected outside of Queensland in Australia. The Asian Honey Bee is a natural host for varroa mites which, have the potential to disrupt both honey production and pollination services, and cause significant damage to our apiary industry.*

HOW TO SPOT IT?

The Asian honey bee is approximately 10 mm long with a wing length of 7.4–9.0 mm. While Asian honey bee's are similar in appearance to the European honey bee, there are some distinguishing features that can help us to tell them apart.

- The Asian honey bee fly very quickly and erratically when feeding.
- The chest and abdomen of Asian honey bee is less hairy than the European honey bee.
- The Asian honey bee has bolder, more evenly spaced striping, compared with European honey bee that tends to have heavier black striping towards the back of its abdomen.
- Asian honey bee swarms tend to be much smaller than the European bee's swarms and can range in size from that of a closed hand to the size of a basketball.
- The Asian honey swarms in an orderly fashion with bees uniformly arranged and flying in the same direction.



Asian honey bee. Photo: Budak | Flickr

HOW IS IT A THREAT TO VICTORIA?

Due to its frequent swarming and tendency to abscond the Asian honey bee is not suitable for honey production and pollination services. They produce smaller quantities of honey than the European honey bee and in areas where both strains co-exist the Asian honey bee has been known to rob honey stores of the European bees. The Asian honey bee are a natural varroa mite host and could significantly worsen the spread of mites if we were to have an outbreak in Australia. This could have major impacts on both honey production and pollinations service providers.

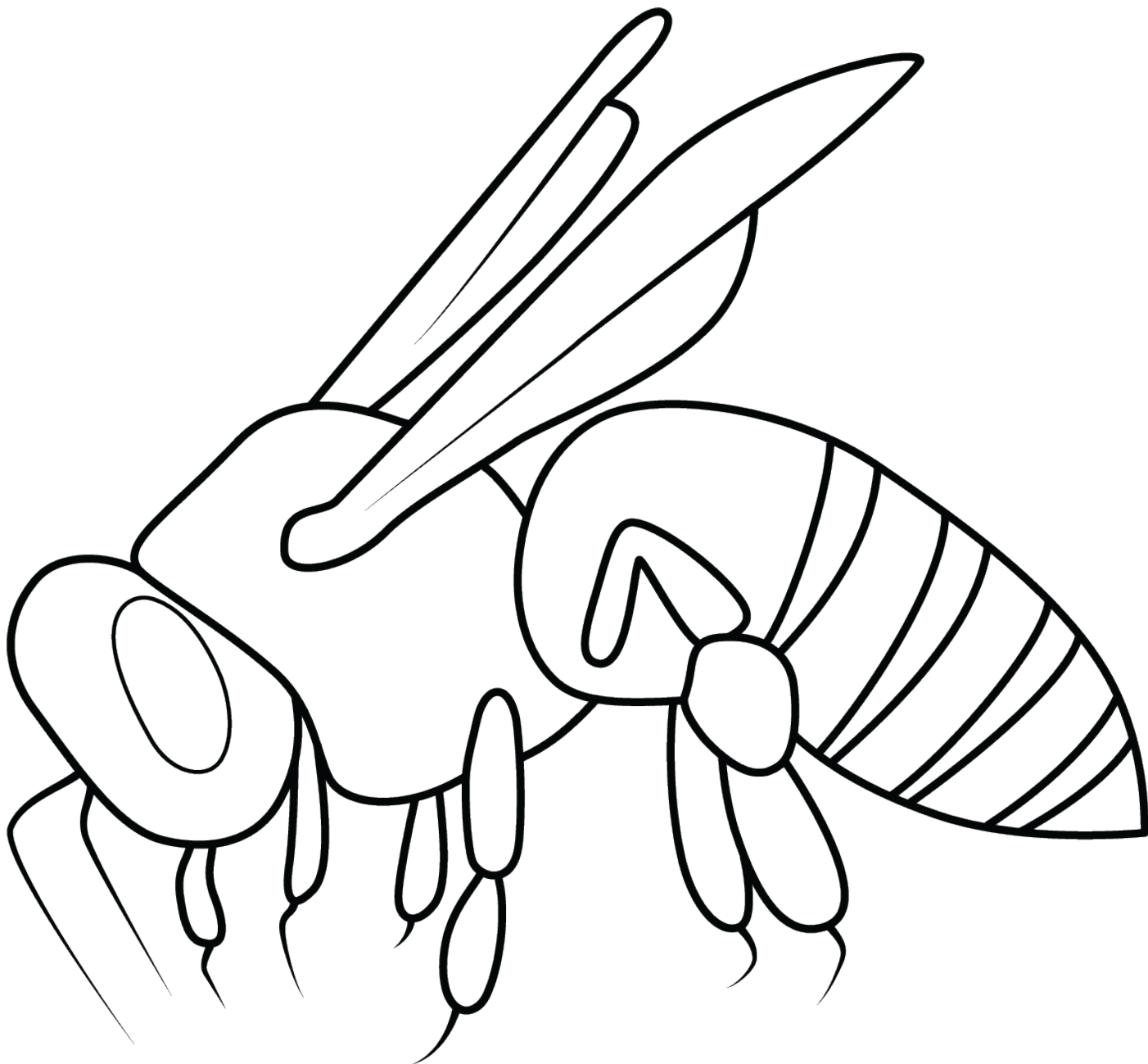
HOW DO I REPORT IT?

If you think you have found Asian honey bee (or any other unusual insect), catch it in a container and call the Exotic Plant Pest Hotline on **1800 084 881**.

Or report it through the **MyPestGuide Reporter** app <https://mypestguide.agric.wa.gov.au/reporter/#/> making sure you choose **My Pest Guide** in the "Send report to:..." field.

Email photos of the suspected pest and damage, along with your contact details and the pest's location to plant.protection@agriculture.vic.gov.au

COLOUR ME IN!





BROWN MARMORATED STINK BUG

The brown marmorated stink bug (Halyomorpha halys) is an exotic plant pest that is a high priority for Australia.

WHAT DOES IT LOOK LIKE?

Adults:

- 12–17mm long
- Brown shield-shaped body
- Pale, white bands on the antennae
- Distinctive black and white banding along body

Juveniles (nymphs)

- Newly hatched – dark head and shoulders, red and orange abdomen with dark stripes
- Older – darker, begin to show banding pattern on the legs and antennae
- Juveniles cannot fly

Eggs

- White to light green colour
- Barrel shaped
- Laid in clusters of 25–30 on underside of leaves

WHAT ARE THE RISKS TO VICTORIA?

This sneaky hitchhiker tries to pass our borders by hiding inside imported shipping containers, machinery, goods and packaging – especially between **September and April**, which is known as ‘brown marmorated stink bug risk season’. Last summer, the brown marmorated stink bug was found in Victoria for the first time in Clayton, Dandenong South and Port Melbourne, where it had hitchhiked on imported goods.

While our surveillance activities indicated that there were none left remaining in these areas, we need your help to ensure that none took shelter during the 2019 winter. Keep a look out for any that may have come out of their hiding spots.



BMSB adult. Image courtesy of Kristie Graham, USDA ARS

It is known to feed on and damage over 300 types of fruit, ornamental trees and vegetable crops, including apples and pears, peaches, cherries, berries, grapes, grains, sweetcorn, tomatoes, tree nuts and truffles.

Brown marmorated stink bug poses no risk to human health. It is a nuisance pest because it can enter homes, vehicles, machinery and sheds to seek shelter during cooler months – often in very large numbers.

They are not easy to treat with insecticides and produce a very unpleasant odour when disturbed or squashed, making them hard to remove.

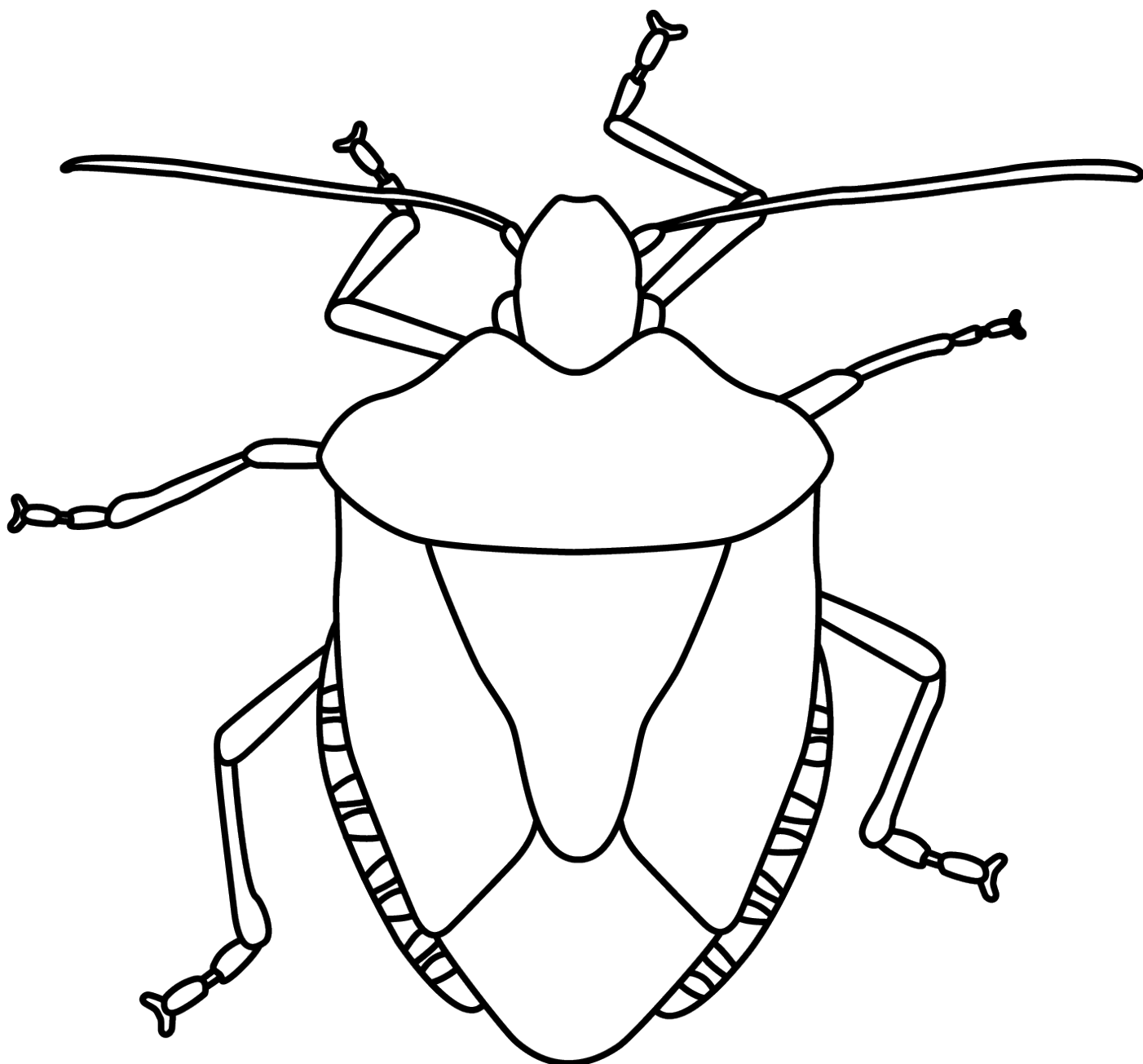
HOW DO I REPORT IT?

If you think you have found brown marmorated stink bugs (or any other unusual insect), catch it in a container and call the Exotic Plant Pest Hotline on **1800 084 881**.

Or report it through the **MyPestGuide Reporter** app <https://mypestguide.agric.wa.gov.au/reporter/#/> making sure you choose **My Pest Guide** in the “Send report to:...” field.

Email photos of the suspected pest and damage, along with your contact details and the pest's location to plant.protection@agriculture.vic.gov.au

COLOUR ME IN!





GLASSY-WINGED SHARPSHOOTER

The Glassy-winged sharpshooter (Homalodisca vitripennis) is a leafhopper that directly damages host plants, as well as being a highly effective transmitter of Xylella, which causes Pierce's disease in grapes, citrus variegated chlorosis and phony disease in peach.



Image by Alex Wild, University of Texas at Austin.

HOW TO SPOT IT?

- Adults are large (12-14 mm long) with a flat head and prominent eyes. The body colour is dark brown with small yellow spots on head and back. They have transparent (glassy) wings with reddish veins.
- Leaves a trail of watery excrement which appears as white spots.
- Eggs are sausage shaped and laid in masses that appear as green water blisters beneath the leaf.

- leaf scorch (in coffee, almond, blueberry, oleander, elm, oak, plane, mulberry, maple)
- phony disease (in peach)
- Pierce's disease (in grapevine)
- variegated chlorosis (in citrus).

The glassy-winged sharpshooter and *Xylella* are not currently present in Australia, but are of major concern to Australia's plant industries. *Xylella* has never been successfully eradicated once it has become established, so keeping potential carriers insects out of Australia is essential.

WHAT ARE THE RISKS TO VICTORIA?

The main risk posed by the glassy-winged sharpshooter is the transmission of the *Xylella* bacterial pathogen. This disease can cause scorched leaves, browning and shedding of leaves, stunted shoots, reduced fruit size over time, poor quality fruit, dieback, and death of the plant. Many commercial and ornamental plant species can be affected by this disease and have different names depending on the host species:

- Anaheim disease (in grapevine)
- California vine disease (in grapevine)
- dwarf (in lucerne)
- leaf scald (in plum)

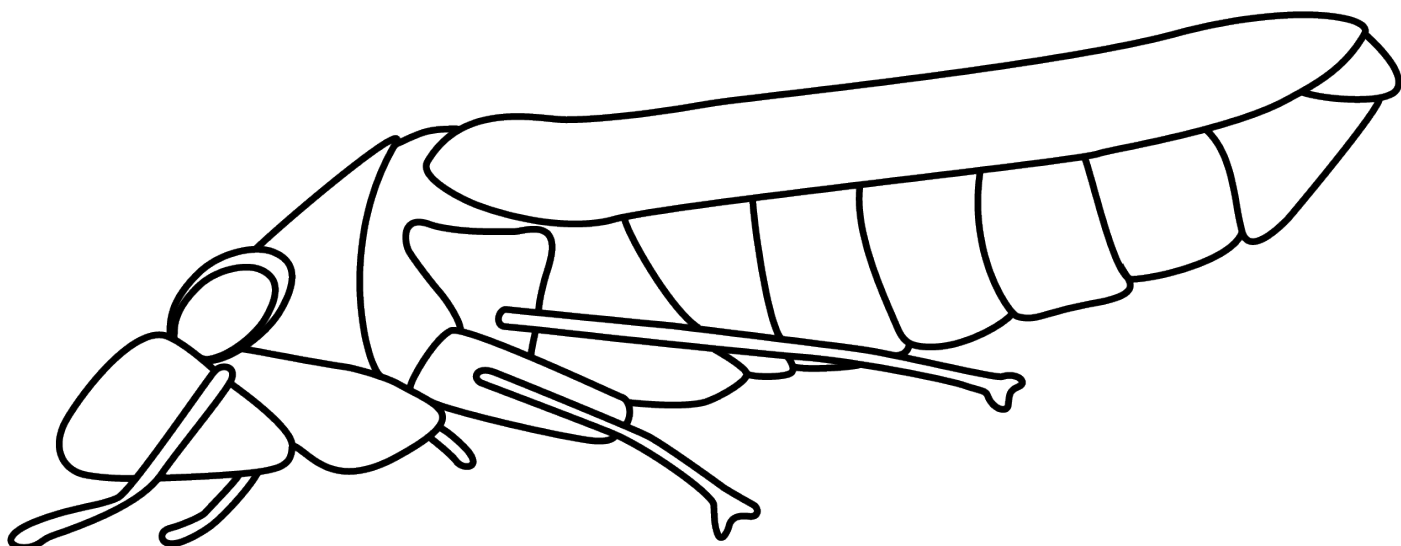
HOW DO I REPORT IT?

If you think you have found glassy winged sharpshooters (or any other unusual insect), catch it in a container and call the Exotic Plant Pest Hotline on **1800 084 881**.

Or report it through the **MyPestGuide Reporter** app <https://mypestguide.agric.wa.gov.au/reporter/#/> making sure you choose **My Pest Guide** in the "Send report to:..." field.

Email photos of the suspected pest and damage, along with your contact details and the pest's location to plant.protection@agriculture.vic.gov.au

COLOUR ME IN!



WORD FIND

Can you find the five words listed below?

GLASSYWINGED SHARPSHOOTER LEAFSCORCH XYLELLA LEAFHOPPER

P	L	G	F	R	G	O	S	J	E	R	O
X	Y	L	E	L	L	A	M	P	F	B	D
O	W	E	S	B	A	K	V	U	A	L	W
S	H	A	R	P	S	H	O	O	T	E	R
L	A	F	Z	L	S	D	A	F	S	A	L
G	R	H	G	D	Y	C	P	S	P	F	A
D	T	O	A	K	W	R	C	N	O	S	G
S	Y	P	X	I	I	S	D	A	R	C	U
M	C	P	O	D	N	E	O	Z	X	O	D
F	U	E	R	V	G	J	C	B	B	R	A
A	Q	R	B	W	E	F	E	P	L	C	L
E	D	C	K	C	D	N	R	M	O	H	G





RED IMPORTED FIRE ANT

Red imported fire ant ant (Solenopsis invicta) is a dangerous pest, with a fiery and painful sting. They pose a serious threat to our environment and have significant environmental, health and economic impacts in other countries. The red imported fire ant has been found in Queensland – which has put Victoria on alert.

HOW TO SPOT IT?

- Red imported fire ants (RIFA) have a red brown body with a darker abdomen and are between 2-6mm in length.
- Nests appear to be loose piles of soils with no obvious opening.
- Nests are often found in lawns, garden beds, and on grazing and post-cropping land.
- The slightest disturbance of a RIFA nest will cause the ants to swarm out in great numbers. Their aggressive nature is their most distinguishing feature compared to other ants.

WHAT ARE THE RISKS TO VICTORIA?

Fire ants will affect everyone. They have the potential to limit Australia's outdoor lifestyle, devastate our environment and reduce production of some agricultural industries. Fire ants will also impact on land and business values and threaten our orchards, crops and pastures. They may even jeopardise our 'naturally', clean and green export image.



Image by: Mario David Bazan, Florida USA

Fire ants can:

- Inflict a painful, burning sting
- Damage equipment and infrastructure
- Reduce property values
- Invade backyards, parks and recreational areas
- Damage native flora and fauna
- Injure animals and damage crops.

Fire ant stings are painful, and the burning or itching sensation can last up to an hour. Victims of multiple stings may feel as if their body is on fire. Some people have very strong reactions to fire ant bites. Anyone with allergies to bee and ant stings should exercise extra caution.

HOW DO I REPORT IT?

If you think you have found red imported fire ants (or any other unusual insect), catch it in a container and call the Exotic Plant Pest Hotline on **1800 084 881**.

Or report it through the **MyPestGuide Reporter** app <https://mypestguide.agric.wa.gov.au/reporter/#/> making sure you choose **My Pest Guide** in the "Send report to:..." field.

Email photos of the suspected pest and damage, along with your contact details and the pest's location to plant.protection@agriculture.vic.gov.au

CONNECT THE DOTS

Can you connect the dots to complete the picture of the Red Imported Fire Ant?





SPOTTED WINGED DROSOPHILA

The spotted winged drosophila (Drosophila suzukii) is a major horticultural pest which particularly targets soft-skinned fruit including berries, stonefruit and grapes. The larvae is particularly destructive as it feeds internally on the fruit.

HOW TO SPOT IT?

- These tiny flies are only 2-3mm in length, with a wingspan of 6-8mm. They have yellow-brown colouring, dark bands on the abdomens and red eyes
- Males have a dark spot on the tip of their forewings
- Larvae are cream coloured and about 3 mm long
- Signs of fruit fly damage to fruit on both immature fruit and ripe fruit. Fruit damage consists of pin prick sized holes from egg-laying, fruit softening, skin wrinkling from feeding and secondary bacterial and fungal infections.

WHAT ARE THE RISKS TO VICTORIA?

Spotted winged drosophila poses a significant risk to the Victorian economy due to the extent of damage it can cause to fruit crops. Unlike most fruit flies which are only a pest of ripe or damaged fruit the SWD female can lay eggs in both undamaged ripe and ripening fruit. The larvae of SWD feed internally on host fruit and can cause losses of over 40 per cent in blueberries. SWD is a known pest of various fruit including apples and pears, berries,



Image by Martin Cooper, Ipswich

blueberries, cherries, dried fruit, summerfruit, table grapes, wine grapes.

HOW DO I REPORT IT?

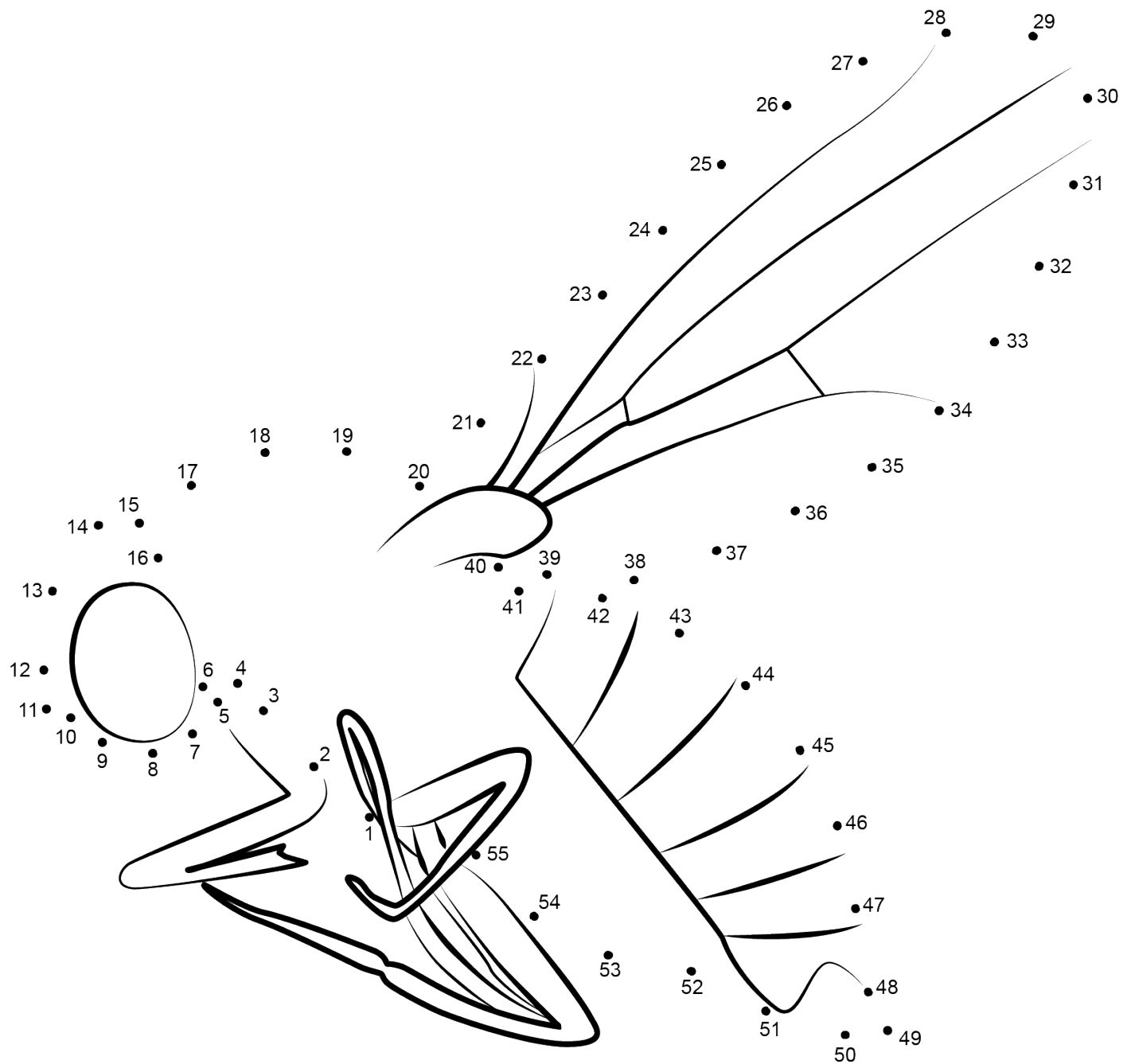
If you think you have found a spotted winged drosophila (or any other unusual insect), catch it in a container and call the Exotic Plant Pest Hotline on **1800 084 881**.

Or report it through the **MyPestGuide Reporter** app <https://mypestguide.agric.wa.gov.au/reporter/#/> making sure you choose **My Pest Guide** in the "Send report to:..." field.

Email photos of the suspected pest and damage, along with your contact details and the pest's location to plant.protection@agriculture.vic.gov.au

CONNECT THE DOTS

Can you connect the dots to complete the picture of the Spotted Winged Drosophila?



Can you create your own drawings of any of the pests we have learnt about here?





