

# Navel orangeworm

Have you seen this citrus pest?

## What is navel orangeworm?

Navel orangeworm (*Amyelois transitella*) is an exotic pest that feeds on a variety of fruit and nuts, including citrus. While the insect is a serious pest of some nut crops like almonds and pistachios, it also grazes on citrus fruit, causing surface scarring that allows decay-causing organisms to enter the fruit. This reduces fruit quality and causes fruit drop, reducing economic return.

Navel orangeworm is not known to occur in Australia.

## What does navel orangeworm look like?

### Adults

- Adult moths are about 9–11 mm long and greyish-brown.
- Their wings have silver-grey markings.
- The moths have short, dark projections from the front of the head.



Adult moth of navel orangeworm

Photo courtesy of Jack Kelly Clark, UC IPM

### Larvae

- The larvae are white to pink with a dark reddish-brown head.

- They have a distinctive pair of crescent-shaped markings on the second segment behind the head.
- Larvae are tiny when they first hatch, but as they develop they can grow up to 13–19 mm long.



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A pair of crescent-shaped markings on the second segment behind the head distinguish navel orangeworm larvae

Photo courtesy of Jack Kelly Clark, UC IPM

### Pupae

- Pupae are about 7–12 mm long and dark brown.

### Eggs

- Navel orangeworm eggs are tiny, oval and flattened, with ridge-like marks.
- Initially, eggs are white, but turn pink, then reddish-brown before hatching.
- They are laid in the navel end of injured oranges.

## What symptoms does navel orangeworm cause on plants?

Check for caterpillar frass near wounds in the fruit. Navel orangeworm larvae scavenge in splits and wounds of citrus fruit (such as naval oranges) and feed in or near the core. The larvae can overwinter in rotting or mummified fruit left on trees.

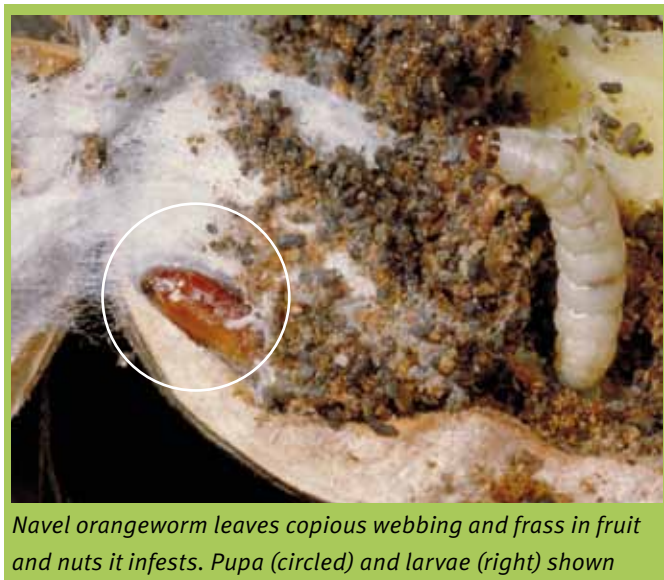


Photo courtesy of Jack Kelly Clark, UC IPM

## Which plants are affected?

Navel orangeworm feeds on a variety of fruit and nuts. It is a serious pest of nut crops such as English walnuts, pistachios and almonds, but also feeds on citrus, dates, figs, apples, pears and stone fruit.

## Where does navel orangeworm occur?

Navel orangeworms occur in the United States and Canada.

## How does navel orangeworm spread?

Long-distance spread occurs by movement of plant material infested with the larvae and pupae. The Australian Government closely regulates approved imports of host plants (whole or parts) and monitors for illegal plant movement.

## How can I protect my farm from navel orangeworm?

There are simple steps you can take to protect your farm:

- Be aware of navel orangeworms.
- Do not illegally import fruit.

- Keep your farm clean. Use good hygiene practices to manage discarded fruit under trees. Remove damaged or mummified fruit from trees.
- Check your crop. Make sure you and your farm workers are familiar with the signs of navel orangeworm infested fruit.
- Regularly check your orchard and report any unusual or unfamiliar pests.

## Have you seen navel orangeworm?

In Queensland, navel orangeworm is prohibited matter under the Biosecurity Act 2014. If you believe that you may have detected navel orangeworm, you must report it immediately to Biosecurity Queensland. You must also take all reasonable steps to minimise the risks of spreading the pest or making the situation worse. Do not move any damaged fruit off your property—this can spread the pest.

Be on the lookout for navel orangeworm and report them immediately to Biosecurity Queensland.

**Call Biosecurity Queensland on 13 25 23 or the National Exotic Plant Pest Hotline on 1800 084 881.**

## Further information

For more information, call Biosecurity Queensland on **13 25 23** or visit [www.biosecurity.qld.gov.au](http://www.biosecurity.qld.gov.au) or the UC IPM website at [www.ipm.ucdavis.edu](http://www.ipm.ucdavis.edu)

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