

Californian bean thrips (*Caliothrips fasciatus*)

EXOTIC PEST DETECTION & SAMPLING GUIDE



This resource has been developed as part of the collaborative program 'Boosting diagnostic capacity for plant industries'. Funding for this project is from the Rural R&D for Profit Program, Federal Department of Agriculture and Water, and the Grains Research and Development Corporation, with funds from other RDC's – Sugar RDC, Wine Australia, Cotton RDC, Forestry RDC, and Hort Innovation.



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Background

Californian bean thrips are native to California and are widely distributed throughout the Americas and Africa. Incursions have occurred in New Zealand and the United Kingdom, however this species of thrips is not present in Australia. Adults are capable of short-range flight, but movement is largely associated with wind dispersal or fruit movement. Californian bean thrips mainly feed on legumes (Family Fabaceae) but can infest a variety of weed species, with adults frequently found on citrus fruit. They are a high priority pest species owing to high infestation rates of tree and row crops, including avocados, pears, beans, and lettuce.

How would I identify Californian bean thrips?

Identification by morphology

Californian bean thrips measure approximately 1 mm in length with 4 dark fringed wings that fold back at rest. Females are dark grey, black or brown in colour with banded striations across the body and males are smaller in size. Larvae are smaller and wingless with a yellow to orange body. Eggs are approximately 0.2 mm in size and are an elongated banana-shaped. A full lifecycle takes between 15- 30 days, with adults surviving up to one month. Thrips species are generally differentiated by fine morphological details (sculptures on abdominal tergites), which requires a high-powered microscope, therefore field identification is difficult to achieve and support from a trained entomologist is necessary.

Identification by damage

Feeding from Californian bean thrips causes damage to all stages of the legume lifecycle, however feeding is most noticeable during flowering. Thrips are sap feeders and silvery marks are a key indicator of thrip feeding. Feeding also causes more serious symptoms, including pod scarring, and leaf curling.

Figure 1. Bean thrips (*Caliothrips fasciatus*) nymph



How do I scout for Californian bean thrips?

If an infestation is suspected, monitoring can be carried out using a visual inspection or with traps. Before flowering, assess growing tips throughout the crop for thrips activity. During flowering remove flowers and visually inspect for adult thrips, ensuring that the entire flower is assessed.

Larvae are difficult to see due to their light colouring and smaller size. When using a trapping approach, deploy green sticky traps above crop height to catch incoming thrips, and also place traps in adjacent crops or shelterbelts.

Could it be confused with an endemic species?

Californian bean thrips cannot be confidently identified in the field and are easily mistaken with other thrips. There are 13 thrips species commonly found on legumes in Australia, including *Frankiniella* spp., *Thrips* spp., *Desmothrips* spp., *Haplothrips* spp., *Limothrips* spp. and *Pseudanaphothrips* spp., therefore thrips detection warrants investigation and identification by an expert or through molecular testing.

Figure 2. Bean thrips (*Caliothrips fasciatus*) damage



What should I do if I suspect Californian bean thrips?

Californian bean thrips is a priority plant pest, exotic to Australia. If you notice an unusual thrips species call the **Exotic Plant Pest hotline on 1800 084 881**. The hotline will divert you to the appropriate state biosecurity agency, which will investigate the suspect detection further. To support an investigation you should take note of:

- The detection location (take a GPS coordinate using your phone);
- The host plant on which the suspect detection has been made;
- Damage symptoms (e.g. silvery marks, pod scarring); and
- A photo of all life stages observed (taking close-up photos of the same specimen from multiple angles is most useful for identification).

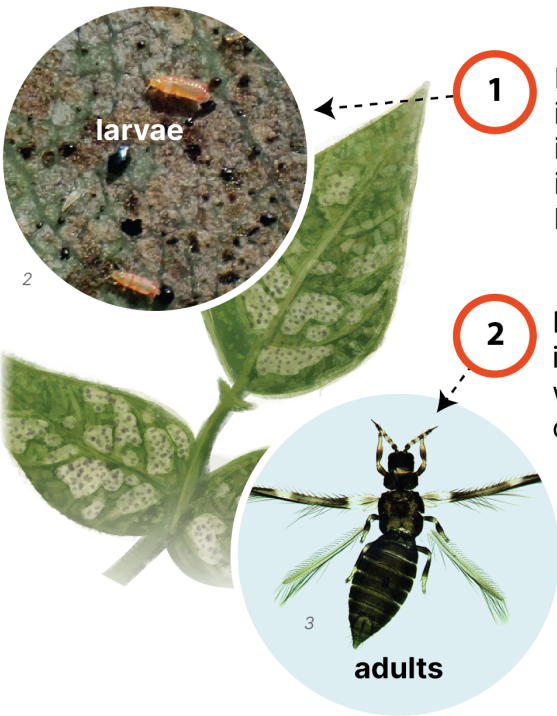
Taking a sample

Taking a sample will also assist in a biosecurity investigation. Collect thrips on the plant part on which they are found (e.g. flowers) and place in a ziplock bag – double bagging of specimens is ideal. Label the bag with the date and collection location and keep in the fridge in case a sample is needed by the biosecurity agency.

Figure 3. Reporting decision making for Californian bean thrips (*Caliothrips fasciatus*)

You have detected unusual amounts of silvery marks, pod scarring or leaf curling on your bean crops. **Should you report it?**

If you answer yes to EITHER of the following questions, it could be the **exotic California bean thrips** (*Caliothrips fasciatus*). Report it!



1 Do you see small immature wingless insects, yellow to orange in colour and up to 1 mm long, on leaves? **Yes**

2 Do you find small insects about 1 mm long with four fringed wings on leaves? **Yes**

Additional possible signs

0 You may also notice eggs which are only about 0.2 mm long and banana shaped.

California bean thrips can be easily confused with several other thrips species in Australia, but it cannot be reliably distinguished in the field, so always take a sample and report!

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³ Laurence A. Mound, Australian National Insect Collection

Figure design and all other illustrated components: Elia Pirtle, eliapirtle.com

More information

[DAF Queensland, Californian bean thrips](#) , [Biocontrol Bean thrips](#)

