Each crop and geographic area has its own complex of thrips species. Relatively uncommon thrips may be locally abundant and may even cause crop damage. This guide deals only with three species common across much of Australia. If yours do not fit those shown, and if they are numerous enough to cause concern, contact your local Department of Agriculture/Primary Industries or pest scout to have them identified by an expert. Be aware that the colours of specimens in alcohol or on slide mounts may fade over time: thrips are best examined fresh.

This guide is not intended for field use. Accurate identification requires access to a binocular microscope (40x), which makes it relatively easy to identify the key thrips species associated with damage to a particular crop. Thrips may be on yellow sticky traps or in alcohol. A compound microscope can be used for slide mounts and will show additional details only visible at high magnification (100x).

**Key species in strawberries**

- Western flower thrips, *Frankliniella occidentalis*
- Plague thrips, *Thrips imaginis*
- Onion thrips, *Thrips tabaci*

**Key characteristics identifying thrips at low magnification (40x)**

- **Colour** (there may be seasonal and local differences between populations)
- **Setae** (strong hairs)-presence or absence on prothorax or abdomen
- **Number** of antennal segments
- **Colour** of ocelli (three simple eyes on top of head, between compound eyes)
- **Size**

**Key biological differences**

- **Sex:** males, where present, are about two-thirds the size of females and pale yellow in colour. Western flower thrips are predominantly male at very low population densities, usually early in the season, and mostly female when numerous. Plague thrips are almost always female, particularly early in the season. Onion thrips are always female in Australia.

- **Seasonal incidence:** plague thrips are most numerous in early summer, onion thrips in mid-summer and western flower thrips in mid-late summer. Dark forms of each species, often larger, are common in winter.
Major pest thrips on strawberries

**Western flower thrips**,  
*Frankliniella occidentalis*  
Largest of the three species,  
female 1.4-1.8 mm,  
male 0.9-1.1 mm.  
Note black tip on female abdomen.

**Plague thrips**,  
*Thrips imaginis*  
Smaller species,  
female 1.1-1.3 mm,  
male 0.8-1.0 mm.  
Note two last segments of female abdomen are darker.

**Onion thrips**,  
*Thrips tabaci*  
Smallest species,  
female 1.0-1.2 mm,  
no males.  
Note more uniform colour of abdominal segments.

Note that sizes and colours vary, even within a species, and alone are not enough to separate species, particularly in the field. Adult thrips have two pairs of fringed wings. Larvae are white or yellow, wingless, with few distinguishing characteristics.
Where to look for thrips on strawberries

Adult thrips on strawberries are mostly found in flowers, where they are attracted to pollen and nectar. Females lay eggs in sepals and other flower parts, which hatch into larvae after several days. Few thrips are found on leaves.

Thrips are best collected from flowers. Collect 20-30 flowers from each area and place in labelled zip-lock bags. Transfer thrips to 70% alcohol to preserve for identification.

Yellow sticky traps are useful for monitoring pest species, but are likely to also catch non-pest species. Thrips on sticky traps are often damaged, and expertise is needed to identify them with certainty.

Where to look for thrips damage

Adult and larval thrips damage both flowers and fruit. They cause bronzing of petals, sepals and fruit, and, occasionally, flower abortion. They do not cause fruit distortion.

Above: Bronzing of flower petals

Below: Russetting on green fruit caused by thrips feeding on early fruit

Above: Necrotic flecking on stamens

Below: Russetting around seeds caused by thrips feeding on late fruit
Sources of further information

Further reading on thrips identification:


Further reading on thrips of importance to strawberries:

• *Management of western flower thrips, Frankliniella occidentalis Pergande in strawberry crops in Australia.* HA Report BS00002. Contact Marilyn Steiner, NSW Agriculture, Gosford Tel: (02) 4348 1900 or Horticulture Australia Ltd Tel: (02) 8295 2300.

Help with thrips identification:

• Laurence Mound, CSIRO, GPO Box 1700, Canberra, ACT 2601 Tel: (02) 6246 4280.

• State Departments of Agriculture (Diagnostic Laboratories): in NSW, Insect Enquiry Service, Orange Agricultural Institute, NSW Agriculture, Forest Road, Orange NSW 2800 Tel: (02) 6391 3800.

For other pest and disease diagnostic service providers, see listing in *Integrated Pest Management in Ornamentals/Vegetables* Information Guides, NSW Agriculture Bookshop Tel: (02) 6391 3458 or 1800 028 374.

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Generalised diagram of an adult thrips

1. Antenna
2. Head
3. Prothorax
4. Abdomen
5. Abdominal tip
6. Metanotum
7. Abdominal segments (underside)
8. Eighth dorsal segment of abdomen

Dorsal

Ventral
Differentiating characteristics under low power magnification (40x)

1. Antennae

**Western flower thrips:** eight segments; two end segments small, narrow, black; general appearance banded.

**Plague thrips:** seven segments; first dusky, end one small, blunt.

**Onion thrips:** seven segments; first pale, end one small, blunt.

2. Head

**Western flower thrips:** ocelli red.

**Plague thrips:** ocelli red.

**Onion thrips:** ocelli pale.

3. Prothorax

**Western flower thrips:** four pairs of strong bristles, one pair at each corner.

**Plague thrips:** two pairs of strong bristles, rear corners only.

**Onion thrips:** two pairs of strong bristles, rear corners only.
4. Abdomen

**Western flower thrips:** pale yellow to orange; dorsal side has dark markings down centre; darker in winter.

**Plague thrips:** yellow to dark brown; two last segments darker.

**Onion thrips:** variable, dark to light brown/grey, but fairly uniform over abdomen.

5. Abdominal tip

**Western flower thrips:** extreme tip black.

**Plague thrips:** last two segments dark.

**Onion thrips:** uniform brown/grey colour.
6. Metanotum

**Western flower thrips:** median pair of metanotal setae (hairs) arising at front margin.

**Plague thrips:** median metanotal setae (hairs) arising behind front margin.

**Onion thrips:** median metanotal setae (hairs) arising behind front margin.

7. Abdominal segments (underside)

**Western flower thrips:** one row of setae (hairs) on lower margin of each segment.

**Plague thrips:** at least three rows of setae (hairs) on each segment.

**Onion thrips:** one row of setae (hairs) on lower margin of each segment.

8. Eighth dorsal segment of abdomen

**Western flower thrips:** comb broad-based, complete.

**Plague thrips:** comb incomplete, at sides only.

**Onion thrips:** comb complete, long and fine.