

## NSW Cut Flower Industry

## Managing Thrips in Cut Flowers

## Description

Thrips are very small (1-2mm), slender, flying insects with fringed wings and rasping mouthparts. There are several thrip species that can attack cut flower and ornamental plants. The most common and serious is western flower thrips (WFT) (*Frankliniella occidentalis*) but other species that can cause damage are onion thrips (*Thrips tabaci*), plague thrips (*Thrips imaginis*), gladiolus thrips (*Thrips simplex*) and greenhouse thrips (*Heliethrips haemorrhoidalis*). Adults are generally yellow to brown (greenhouse thrips are dark brown-black) while nymphs are small, wingless, and lighter in colour. They have rapid lifecycles, completing development from egg to adult within two weeks under optimal conditions. Many thrips (including WFT) pupate in moist soil/media under plants or on greenhouse floors, but some (including greenhouse thrips) can pupate on plants. Greenhouse thrips are all female and can reproduce without fertilisation.



**Figure 1.** Western Flower Thrips  
(<https://www.agric.wa.gov.au/fruit/chemical-control-western-flower-thrips>)

## Damage

Thrips puncture plant tissue and suck out cell contents, causing silvery or bronze streaks on petals and leaves, which lead to scarring and deformities. Severe infestations can cause flower buds to abort and reduce overall plant vigour. WFT and onion thrips are vectors for Tomato Spotted Wilt Virus (TSWV) which further affects plant health and quality.

**Figure 2 (right).** Thrips damage on chrysanthemum leaves  
<https://www.horticulture.com.au/globalassets/hort-innovation/resource-assets/nyl1001-managing-western-flower-thrips-in-production-nurseries.pdf>



## → Quick Facts

● **HOST PLANTS:**

Thrips commonly affect a wide range of ornamental and flower crops including chrysanthemums, gerberas, anthuriums, lisianthus, lilies, tiger flowers, dahlias, gladiolus, roses and some native and foliar crops.

● **WHERE TO CHECK:**

Inspect flowers and leaves for damage, focusing on the buds and growing points. Look for signs of flecking, silvery or deformation of flowers, growing tips, young foliage, stems and fruit.

● **WHEN TO MONITOR:**

Careful attention should be given to plants just prior to flowering to prevent thrip populations from increasing. Continue preventative actions throughout flowering periods, particularly in warmer conditions.

● **HOW OFTEN TO MONITOR:**

Weekly particularly during periods with strong, warm winds

### Prevention

- Implement rigorous sanitation by removing weeds and plant debris.
- Use insect-proof screening on greenhouse vents. Seek professional advice before installing.
- Use reflective mulches to deter thrips.
- Maintain healthy plant growth through proper watering and nutrition.
- Regularly monitor and isolate new plant material.

### Monitoring

- **Visual Inspection:** Check 1-10% of plants weekly for thrips, focusing on leaves showing symptoms like stunting or silvering. Also check inside flowers for the presence of thrips. Use a x10 hand lens for detailed inspection. Gently beat plants/flowers over a white or black tray to dislodge pests and examine with a hand lens and record findings. It is difficult to differentiate between WFT and onion thrips, so seek expert advice for identification.
- **Yellow or Blue Sticky Traps:** Place traps above plant tops and near potential entry points. Use one trap per 100 m<sup>2</sup> in greenhouses, with more for susceptible crops. Inspect traps weekly and replace them at least monthly. Blue traps are very effective for WFT.
- **Soil Monitoring:** Use sticky traps under the crop canopy or on wire mesh to capture thrips moving to or emerging from the soil. Check traps under a microscope to assess soil thrips activity and determine if soil predators (see Biological Control) are needed.



**Figure 3.** Greenhouse thrips adult, egg and nymphal stages

### Control

#### Cultural

- **Infestation Management:** Control broad-leaf weeds and alternative hosts around the production area. Use floor coverings like weed matting or gravel in nurseries to reduce pest problems.
- **Mass trapping with blue sticky rolls.** This method is useful as part of WFT IPM in production houses.
- **Stock Inspection:** Ensure new seedlings and planting material are free of thrips. Use varieties resistant to TSWV where possible.
- **Pruning and Removal:** Prune plants with moderate infestations to reduce pest load and improve airflow. Remove heavily infested plants and destroy them properly.
- **Crop Rotation and Hygiene:** If infestations persist, grow non-host plants for a season to disrupt the life cycle. Practice good crop hygiene and avoid contamination between sites. Mark infested areas to prevent cross-contamination.
- **Thrips Identification:** Accurate species identification is important to select the most appropriate management strategies. Use online resources or consult experts if needed.

#### Biological

- **Natural enemies:** There are many effective predators commercially available for WFT and onion thrips management in foliage and flowers, such as predatory mites *Typhlodromips montdorensis* (Monty), *Neoseilus cucumeris*, *Typhlodromalus lailae* and pirate bug *Orius tantalis*. *Hypoaspis* mites and rove beetle, *Dalotia coriaria*, are soil-dwelling predators that feed on thrips when they move to soil/media/ground to pupate. They are often a useful complement to foliar/flower predators for thrips management.
- It is strongly advised that because of the wide range of agents available, and their various combinations for effective use, you should seek advice from the biocontrol agent producers or from IPM consultants before implementing a thrips management program.

#### Chemical

- WFT has developed resistance to many insecticides, so check current registered/permitted insecticides on the APVMA website.
- Rotate insecticides with different modes of action to prevent resistance development.
- Ensuring thorough spray coverage of foliage and flowers is crucial, particularly targeting the inner parts of flowers where thrips may hide and reproduce.

#### Insecticide Resistance

WFT often develops resistance to overused chemicals. Contact pesticides may be ineffective as many species of thrips are found in protected areas like growing tips and flower buds. Use low-risk translaminar products that penetrate plant tissues but avoid highly residual chemicals to minimise resistance. Rotate insecticides with different modes of action.





Images: Queensland DPI

Figure 4. Western flower thrips on flower stamens

### Take Aways

- **Proactive monitoring and early detection**, including correct species identification, are essential for effective management of thrips.
- **Cultural practices** such as quarantine and sanitation, including management of host weeds are crucial in preventing and restricting spread of infestations.
- **Biological control** should be prioritised to reduce reliance on chemicals.
- **Chemical control** should be used minimally and in strategically applications, with careful consideration of resistance management, especially for WFT.

### References / More Information

- [https://www.dpi.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0006/349791/Western-flower-thrips-Frankliniella-occidentalis.pdf](https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0006/349791/Western-flower-thrips-Frankliniella-occidentalis.pdf)
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- <https://www.horticulture.com.au/globalassets/hort-innovation/resource-assets/ny11001-managing-western-flower-thrips-in-production-nurseries.pdf>
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- <https://biologicalservices.com.au/pests/western-flower-thrips/>
- <https://biologicalservices.com.au/pests/greenhouse-thrips/>

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