



# CLIMATE-SMART URBAN AGRICULTURE **SUPPORTING HISTORICALLY UNDERSERVED PRODUCERS**



## AN OVERVIEW

Whiteflies are a very common greenhouse pest, which can prove tricky to control. This is due to their fast lifecycle time and the ability to survive in a variety of temperatures. If conditions are favorable new whiteflies can emerge in less than three weeks. Whiteflies belong to the order Hemiptera and are considered to be “true bugs”. Whiteflies at their adult stage are quite small, only 1/16th – 1/10th inch long. They can easily be identified by their powdery white wings and generally yellow bodies. Females lay eggs on the under side of leaves, eggs hatch and become instars or “crawlers”. Instars may begin to crawl on the underside of leaves after six days. Instars go through stages slowly becoming nymphs, then adult whiteflies. At the adult stage whiteflies can relocate and lay more eggs.

There are numerous species of whiteflies, but there are two common species of whiteflies that are likely to be found in the greenhouse. Firstly, the Bemisia whitefly otherwise known as the sweet potato whitefly. It can be identified by its wings making an acute angle. Secondly the greenhouse whitefly, or Trialeurodes vaporariorum, their wings form a much more obtuse angle.





## DAMAGE

Whiteflies feed on the sap of plants, inserting their sharp, needle like beak and sucking juice rich in nutrients. Whiteflies then excrete a sugary honeydew like liquid, making plants sticky to the touch. This liquid could grow a black sooty mold furthering damage to crops. Additionally, whiteflies vector over a hundred diseases transmitting the virus from plant to plant.



Retrieved from <https://homyden.com/whitefly-control-identify-prevent-get-rid-whiteflies/>

## CONTROL & PREVENTION

It is best to prepare for whiteflies before they infiltrate the greenhouse, having a strong IPM plan is important as things can get out of hand fast. Make sure to inspect any new plants entering the greenhouse, especially the undersides of the leaves. Use screening and greenhouse netting, it may help prevent whiteflies from entering the greenhouse. Sticky traps and cards can help identify if whiteflies are present. Place at least one card per 1000sqft and more in areas that lead to the exterior of the greenhouse (aka. doors & ventilation). Some whiteflies are normal to be present, but if there is an increase in stuck whiteflies it is a strong sign that there may be a need for control methods.

There are a few options for biological control that are commercially available, *Encarsia formosa* and *Eretmocerus eremicus* are parasitic wasps that lay eggs inside of whitefly nymphs. *Encarsia Formosa* provide best control for greenhouse whiteflies while *Encarsia eremicus* provide better control for *Bermisia* whiteflies. There is also a predatory beetle called *Delphastus catalinae* that consumes eggs and nymphs.

Chemical controls are available, insecticidal soap is a great option, neem oil and petroleum-based oils can suffocate whiteflies. A popular stronger chemical control option is imidacloprid, which is a systemic insecticide which attacks the central nervous system. The drawback of imidacloprid is that it is not an organic listed product.

## REFERENCES

White, J. (n.d.). Whiteflies in the Greenhouse | Entomology. Entomology.ca.uky.edu; University of Kentucky College of Agriculture. <https://entomology.ca.uky.edu/ef456>

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