

## What are Whiteflies?

Whiteflies (*Bemisia tabaci*, *Trialeurodes vaporariorum*) are small, soft-bodied sucking insects that cause problems in crops such as tomatoes, cucumber, beans, cabbage, peppers, squash, potato, peanut, and cotton. Adults are about 1.5 mm long, with yellow bodies and white wings. The young (called nymphs) have legs and antennae and are mobile. When older, nymphs are oval-shaped, clear to whitish-yellow in color, lack legs and antennae, and do not move. When older, the young (pupa) have red eyespots and, may have waxy hairs around the edge.



Whitefly young ( nymphs) and adults<sup>1</sup>

## What is the damage caused?

Whiteflies can 1) spread viruses, 2) cause direct damage to the plant by feeding on the undersides of leaves, 3) cause fruit to ripen unevenly (e.g., *Bemisia* in tomatoes) and 4) produce a sticky substance (honeydew) in large quantities that can spoil fruit. Black sooty molds may grow on the honeydew.

## How to manage Whiteflies in Vegetable Crops?

Whiteflies often become a problem when they move in to a crop from nearby crops or weeds that are dying.

### Biological control

- Encourage natural enemies of whiteflies (beneficial insects such as parasitoid wasps, lacewings and lady beetles) by limiting pesticide applications.

### Cultural control

Monitor fields regularly for whiteflies.

- Destroy or remove nearby crop residues and weeds where whiteflies might survive.
- If whiteflies are a serious problem, harvest early, and destroy crop residues.
- If possible, separate crops that host whiteflies. For example, plant tomatoes at least 800 m from crops that all attract whiteflies (such as cauliflower, chile pepper, melons, and cotton).

### Pesticide control

Monitor whitefly populations. Check the undersides of leaves for both the young (nymphs) and adult whiteflies. If a lot of plants have 4-5 adults (or more) per leaf, consider spraying.

- Reduce costs and protect beneficial insects by 1) only spraying in areas of the crop with high populations, and 2) applying mainly to the undersides of the leaves.
- Imidacloprid (Admire Pro\*) at 510-765 ml/ha (7-10.5 fl. oz/acre). Can be used for all whitefly species, but it is most effective against silverleaf whitefly (*Bemisia argentifolii*). Do not apply to crops grown for seed. It is most effective if applied during transplant and note that pre-harvest restrictions depend on the crop. Wait 12 hours after application before reentering the field.
- Insecticidal Soap (potassium fatty acid soaps). Apply thoroughly especially to the undersides of leaves. May require multiple applications.
- Narrow Range Oil (Saf-T-Side, Ultra-Fine Oil\*) at 1% solution or less. Requires multiple applications.

Always read product labels for specific guidelines and follow safe application practices.

\*Commercial name. The authors make no endorsement towards commercial brands mentioned in this document nor are the absence of other brand names an implication of our disapproval.