

# Brassica whitefly control in vegetables

July 2016

**Integrated  
Crop Protection**  
PROTECTING CROPS

Brassica whitefly (*Aleyrodes proletella*) is a pest of crops in the brassica family. This insect is not restricted to brassicas, although it prefers them. Its host range includes cabbages, cauliflowers, broccoli, kale and Asian vegetables, especially wombok (Chinese cabbage).

In NSW, the brassica whitefly has only become a pest of significance in the last 2-3 seasons but were first reported in Australia in 1997 in South Australia (P. J. De Barro & M. Carver – CSIRO Entomology). The widespread cultivation of kale in the last few years is the most likely cause of brassica whitefly becoming a problem pest, particularly in the Sydney Basin.

## Damage

In the Sydney Basin whiteflies can breed all year. The generation time is shorter in summer when it is warmer – as little as three weeks from egg to adult. Slower growing crops can allow large numbers to develop within one crop cycle. A repeat harvest such as kale is especially prone to large and recurring infestations.

## Ecology

Brassica whitefly shows a preference for the varieties that do not have smooth leaves, especially kale, savoy cabbages, and wombok. The whitefly lays its eggs in circles (halos), in the dimples on the underside of the leaves of these plants. The adult produces a white waxy substance that surrounds them. The whitefly nymphs are wingless and known as “scale”; they are approximately half the size of the adult fly.

The adult is a small, white sucking bug, 1–3 mm long. The insects will fly up from under the leaves if the plant foliage is disturbed. The brassica whitefly holds its wings flat across its back. The wings have distinctive dark patches on them against a white background.

The adult whitefly are not strong fliers, but they can be spread long distances by the wind.



Brassica whitefly as seen on a leaf.



Yellowing of outer leaves caused by brassica whitefly.

ICP1/035/1606

## Brassica whitefly management

### Monitoring

Early detection is very important. Seedlings must be healthy and free of any pests. Start monitoring seedlings by inspecting the underside of the oldest leaves regularly for adult whitefly and eggs. Yellow sticky traps are very effective at picking up whitefly, but are not very practical in a field brassica crop.

In established crops both kale and savoy cabbages develop yellow patches along the edges of older leaves when brassica whitefly numbers are high.

### Cultural practices

Where possible, there should be a “break crop” or distance between successive brassica plantings to slow and avoid cross contamination.

Kale crops, which are particularly attractive to brassica whitefly, should be grown away from other brassica crops to avoid cross contamination.

It is very important to manage weeds both in the headlands and in the crop as they provide cover for adult whitefly and can be interim hosts for whitefly.

Old or heavily infested crops should be mulched and buried as soon as possible to prevent new generations spreading into successive brassica plantings.

### Biological control

There are naturally occurring beneficial insects and mites that are known to feed on whitefly scales, however, to-date none have been observed exerting control of a brassica whitefly-infested field crop in Australia.

Horticultural oils and “soap” sprays have been used effectively to suppress whitefly in many vegetable crops. Good coverage is critical but there is a risk of phytotoxicity, especially at higher temperatures. They have not been trialled specifically against brassica whitefly.



**ABOVE:** An adult brassica whitefly. Note the markings on the wings.

**LEFT:** Brassica whitefly adult and eggs on Savoy cabbage leaf.

It is worth noting that trials with summer oil at a low concentration of just 0.25% and soap sprays also at low concentrations have been effective against other sucking pests on cabbages without causing damage to the waxy cuticle on the leaves, but care must be taken.

### Chemical control

Whitefly species overseas and in Australia have developed resistance to many pesticides and currently there are no pesticides registered specifically for control of brassica whitefly in Australia. *It is a legal requirement to check the registration of any insecticide before use.*

It is hoped that a permit for an effective insecticide for the management of brassica whitefly will soon be approved.