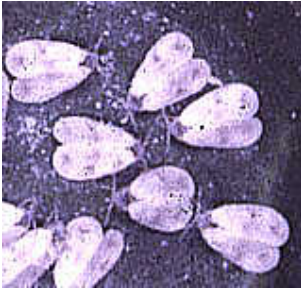


Cabbage whitefly



The cabbage whitefly (*Aleyrodes brassicae*) is common on many brassicas such as Brussels sprouts, broccoli, kale and cabbage. It is a widespread pest in gardens but, according to agricultural scientists, it is of little significance in commercial brassica crops. The greenhouse whitefly, *Trialeurodes vaporariorum*, although a close relative, is confined to indoor situations.

Typical symptoms

Whitefly can be active at most times of the year. Small white winged insects live on the underside of leaves of brassica plants, and fly up in clouds when disturbed. The young whitefly, known as 'scales', remain on the leaves. The whitefly themselves do not often cause severe damage, but the presence of the scales can make leaves unappetising as well as being covered in sticky honeydew that is exuded by the feeding insects. Sooty or black moulds often grow on the honeydew spoiling leaves and flower buds, e.g. Broccoli. The covering of mould will reduce the amount of sunlight reaching the leaves, impairing their ability to photosynthesise, thus reducing cropping.

Description of pest

Adults are white, up to 2mm long, with two pairs of wings folded over the back of the abdomen when at rest. The wings are not pure white, having diffuse grey spots at the centre of each wing. Young whitefly, called nymphs are seen as creamy-yellow coloured scales found on the underside of leaves.

Life cycle

Having overwintered on brassica plants, the adults move to further brassicas in the spring. From mid-May onwards they lay eggs in semi-circular groups on the underside of leaves. The tiny nymphs which emerge are mobile for a short while, but then settle down to feed. They insert their needle-like mouthparts into the plant tissues and suck the juices. The nymphs become immobile and develop a scale-like protective covering, which darkens with age.

Inside this 'scale' the nymph goes through four growth stages. In the fourth and final stage, the nymph will pupate. During this stage it is making a physical change from a crawling insect into an adult capable of flight. The scale becomes much thicker and

darker. From this final stage will emerge an adult whitefly. The life-cycle from egg to adult lasts about four weeks in the summer, and will continue through to the autumn, when both eggs and adults will overwinter on brassica plants.

Prevention and control

- **A healthy soil:** The first line of attack is to create a healthy soil, which will produce strong, vigorous plant growth. Plants are then much more able to withstand a pest attack.
Do not panic: assuming your plants are in a healthy soil, and not short of water, they can tolerate quite high populations of this pest.
- **Sensible feeding:** Do not over feed plants with manure or other nitrogen rich fertilisers, as this will encourage soft leafy growth favoured by the pest.
- **Encourage a natural balance:** Help nature to help you by planting attractant flowers. Simple flowers such as fennel, cow parsley, lovage and other members of the Apiaceae (Umbelliferae) and Asteraceae (Compositae) families will attract parasitic wasps such as *Aphelinus*. These insects lay eggs inside the whitefly scales and their larvae consume them from the inside out. In this way the life cycle of the whitefly is broken. *Phacelia tanacetifolia* is also an attractant for *Aphelinus*. Lacewings, predators which feed on whitefly, are attracted by members of the Asteraceae (Compositae) family such as dandelions, yarrow and shasta daisy.
- **Cultural control:** Dig up all winter brassicas as soon as cropping is finished and bury the plants in a trench or in the compost heap. Do this before planting out new brassicas in the spring.
- **Hand picking:** Whitefly eggs are laid on the underside of lower leaves. Remove infected leaves before the immobile young whitefly 'scales' turn into adults. A battery-powered hoover can be used to suck up the adults. Walking through your crop regularly will disturb the adults and disrupt their feeding patterns.
- **Hosing down:** A good jet of water can wash off whitefly, honeydew and sooty mould.
- **Chemical control - a last resort:** Insecticidal soap. The spray must hit the pests directly to be effective so it is best applied when the adults are not so active when temperatures are low (e.g. early morning). Spray under the leaves, using a good quality sprayer. Spraying once a week for 3-4 weeks may be necessary to see a significant effect.