

Whitefly

GWF276

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This pest was accidentally introduced into the UK and can survive the winter in a heated greenhouse. A good range of controls is now available to the gardener.

Q What exactly are whitefly?

A Whitefly (*Trialeurodes vaporariorum*) are small, flying, sap-sucking insects related to aphids. They are a sub-tropical species that was accidentally introduced into the UK and survives in heated greenhouses over winter and even, very occasionally, outdoors.

Q How do I recognise whitefly?

A Clouds of tiny white insects fly up when a plant is disturbed and, as with aphids, plants are often marked by sticky honeydew and black sooty mould. The immature whitefly scales don't move and are found beneath the leaves.

Q What could I mistake it for?

A Other whitefly occur on outdoor plants. These can be a nuisance, but are not as troublesome as greenhouse whitefly. Scale insects, which also produce honeydew and sooty moulds, can be mistaken for immature whitefly. Their scales are larger and more elongated than whitefly scales.

Q When should I expect attacks?

A The adults appear in unheated greenhouses in summer and, in warm weather, numbers build up very rapidly. Under glass, breeding can be continuous, with up to 250 eggs being laid by each female. Tiny eggs are laid in circular groups

on smooth leaves or scattered over hairy leaves. Within a fortnight, the nymphs hatch out, and after a brief mobile 'crawler' stage, settle as immobile 'scales' which feed by piercing the plant and sucking the sap. The scales soon pupate and emerge as adults 5-10 days later. At 20°C this cycle takes 45 days; at 26°C, only 30 days.

Q Which plants are affected?

A Whitefly are often noticed first on tomatoes, but aubergines, cucumbers, French beans and peppers are all vulnerable. If you grow fuchsias in a greenhouse, you'll probably be familiar with them. Other ornamentals such as begonias, chrysanthemums, cinerarias, nicotianas, primulas, pelargoniums and verbenas are also attacked.

Q What harm do they do?

A In small numbers, very little. However, if they are left to develop, severe infestations can make your greenhouse plants very unsightly, kill their foliage and reduce their vigour. This may happen quickly as whitefly can multiply fast. Cucumbers, tomatoes and other crops covered in honeydew and sooty moulds must be washed before they can be eaten.

Q How do whitefly survive from year to year?

A In mild winters, whitefly survive

on garden weeds, then fly or drift back into the greenhouse. Plants overwintering in greenhouses help them to survive and infect plants the next season.

Whitefly can also arrive on bought-in plants, so check when you bring them home. If you find you have bought an infested plant, return it or spray it with an insecticide based on *fatty acids* before introducing it into your greenhouse.

A yellow sticky trap (see over page) will eliminate many stray adults over the winter and will alert you to levels in the spring.

Q What can I do about whitefly?

A Whitefly do have a reputation for being difficult to control, largely because the scales are totally immune to the chemicals we have available. In the greenhouse or conservatory, biological control will kill scales and can be very effective. Outdoors, several applications of an insecticide containing bifenthrin is probably your best bet.

Q How does the biological control work?

A The biological control uses a natural parasite of whitefly to attack the pest. You buy whitefly scales parasitised by a tiny wasp called *Encarsia formosa*. The wasps hatch out and search for fresh whitefly scales, in which to lay their eggs. The wasps develop

inside the scales, which turn black. They then hatch and go off in search of yet more prey. Although they are related, *Encarsia* wasps are nothing like the big stinging wasps we are familiar with. You'll barely notice them and they certainly won't do you any harm.

If you plan to use biological control, avoid using chemical insecticides, as residues can remain toxic for several weeks. However, you can safely spray with fatty acid soap-based insecticides before use.

Q When should I introduce the biological control?

A Whitefly should be present before *Encarsia* is introduced, but don't wait too long or there will be too many for the parasite to cope with. *Encarsia* is expensive, but if introduced at the right time, can be very effective.

Several introductions are often needed to control the pest. *Encarsia* need a temperature of 18°C to survive, and will die out when all the whitefly have gone.

Use yellow sticky traps to monitor the whitefly population and order the parasite when you see the first whitefly. Once you've introduced the wasp, don't trim off or discard any plant material with black scales or you will be throwing out valuable parasites. Don't spray the crop with insecticide either.

Q Where do I get the biological control from?

A You may find it sold in garden centres as a pre-paid card ready to send off to the supplier. Alternatively, you can order it by mail order.

Q What can I spray whitefly with?

A There are a wide range of sprays available. You could try Bayer Organic pest Control, Bug Free or Provado Ultimate Bug Killer Aerosol - check instructions before use.

Q Are there any other measures I can take?

A If you haven't got time to inspect your plants regularly, there is a range of plant-protection composts containing an insecticide called imidacloprid that may be the answer. Our tests show that as well as being effective against vine weevil grubs, it is good for controlling whitefly, for up to three months. Alternatively you can buy imidacloprid as a soil drench and a contact spray. Not all formulations are suitable for food plants, so check the product label before you use it.

Q What about yellow sticky traps?

A These were designed to monitor whitefly numbers but can control small outbreaks too. Place the traps above your plants before any whitefly appear, and replace them when they are completely covered. The drawbacks are that they will catch other insects, and they won't cope with severe infestations. Yellow sticky traps are available in garden centres and by mail order.

Some gardeners even swear by sucking up adult whitefly with their vacuum cleaner. If you use this method, use yellow sticky traps in the greenhouse or conservatory to keep track of how many remain.

Q What about deterrent plants like marigolds?

A Some gardeners are convinced that growing plants such as marigolds (*Tagetes*) or basil in the greenhouse will deter whitefly. However, we have no direct evidence that this approach is effective.

Suppliers of biological control and traps

Agralan Ltd
01285 860015
www.agralan.co.uk

Biowise
01798 867574
www.biowise-biocontrol.co.uk

Defenders Ltd
01233 813121
www.defenders.co.uk

Green Gardener
01603 715096
www.greengardener.co.uk

Harrod Horticultural
0845 402 5300
www.harrodhorticultural.com

Just Green
01621 785088
www.just-green.com

Scarletts
01206 240466
www.scarletts.co.uk

The Organic Gardening Catalogue
0845 130 1304
www.organiccatalog.com