Aphids

Aphids are sap-sucking insects, they have many predators and are the basis for many food chains. The sap sucking can cause a lack of plant vigour, distorted growth and often excrete a sticky substance (honeydew) on which sooty moulds can grow. Some aphids transmit plant viruses.

Mottled arum aphid on dahlia

Quick facts

Common names Aphids, greenfly, blackfly, plant lice
Scientific name True bugs (Hemiptera) in the Aphidoidea
Plants affected Most plants are susceptible
Main symptoms Presence of aphids, poor/distorted growth, sticky honeydew and sooty moulds
Most active Spring and summer on garden plants; all year round indoors

What are aphids?

Aphids are sap-sucking true bugs. They range in size from 1 to 7mm (¼in or less) long. Some aphids are known as greenfly or blackfly, but there are species that are yellow, pink, white or mottled. Some species, like **woolly beech aphid** and **woolly aphid** on apple, cover themselves with a white waxy secretion and can be confused with **some scale insects**, **mealybug** or **whitefly**. A few species such as the *Pemphigus* aphids on poplar (*Populus*) cause plants to produce galls inside of which they live. Most aphids suck sap from foliage, stems and flowers but some feed from roots.

There are more than 500 aphid species in Britain. Some feed on only one or two plant species, but others can be found on a wide range of plant hosts. Many have lifecycles that involve more than one host plant. Almost any plant can be a host to aphids, including ornamentals, vegetables, fruits, greenhouse plants and houseplants.

Symptoms

You may see the following symptoms:

- It is usually possible to see aphid colonies with the naked eye, many species colonise shoot tips, flower buds and the underside of younger leaves
- Aphids can cause stunted growth with curled or distorted leaves and can weaken the plant
- Many aphids excrete a sticky honeydew on which black sooty moulds can grow
- White cast skins of aphids can accumulate on the upper surface of leaves
- Ants may be found climbing plants with aphid colonies, they tend the aphids obtaining honeydew as a reward. The ants will remove aphid predators

1 / 1 Aphids secrete honeydew on foliage, stems and fruits, which attracts the growth of sooty moulds. Here you can also see white cast aphid skins.

Management

What should I do?

Here are our top tips to your most common questions on managing aphids.

Should you remove aphids? Tolerate aphids where possible. It is usual to have some in a healthy, balanced garden. They are a vital food source for a wide range of wildlife in the garden

Do aphids kill plants? Very rarely. Some aphids cause some leaf and bud distortion, they can spread plant **viruses** and you might see some honeydew on which a harmless sooty mould can grow. This can be wiped off with a damp cloth.
Do I have to control aphids? You don't have to kill or control them. They are part of the biodiversity of gardens and a vital food source for other wildlife in your garden. If you do decide to control aphids, these are the ways you can cause least harm to the environment and avoid pesticides.

- Check plant frequently so you can act before the damage has developed
- Use finger and thumb to squash aphid colonies
- Encourage the natural enemies of aphids in your garden, such as **ladybirds**, **ground beetles**, **hoverflies**, parasitoid wasps and **earwigs**. In spring, aphid populations increase before the natural enemies are active in sufficient numbers – so if you wait a while, they'll often give the control
- Don't bother attempting control of aphids on trees as they are considered part of the biodiversity trees support and natural enemies will normally reduce numbers
- Some natural enemies of aphids can be purchased as **biological control** for use in greenhouses, including hoverfly larvae, lacewing larvae and several parasitoid wasps. More information about these can be found on the '**aphid predators**' page.

Pesticides

The RHS recommends that you don't use pesticides. Most pesticides (including organic types) reduce biodiversity, including natural enemies, impact soil health and have wider adverse environmental effects.

Where you cannot tolerate aphids, manage them using the information above as your first course of action.

Pesticide treatments are likely to kill natural enemies and so reduce the likelihood of natural control and can lead to resurgence of the target animal.

The pesticides listed are legally available in the UK. This information is provided to avoid misuse of legal products and the use of unauthorised and untested products, which potentially has more serious consequences for the environment and wildlife than when products are used legally.

Always follow the instructions on the products. For edible plants, make sure the food plant is listed on the label and follow instructions on maximum number of applications, spray interval and harvest interval.
Homemade products are not recommnded as they are unregulated and usually untested.
Be aware that products such as Neem oil are not registered for use in the UK and we cannot advise on their use.

Plants in flower must not be sprayed due to the danger to bees and other pollinating insects.

- Organic pesticides such as plant oils (e.g. Vitax Plant Guard Pest & Disease Control, Bug Clear Fruit & Veg Ultra, Vitax Rose Guard) have a largely physical mode of action and can be effective against aphids. These pesticides have a very short persistence. Plant oil and fatty acid products are less likely to affect larger insects such as ladybird adults
- Plant invigorators that combine nutrients to stimulate plant growth with surfactants or fatty acids also have a physical mode of action against aphids (e.g. Spot-On Bug Control, Growing Success Bug Stop, SB Plant Invigorator and Doff Universal Bug Control). These products contain some synthetic ingredients and so are not considered organic
- Winter wash is a plant oil application to the bark of fruit trees and shrubs targeting overwintering aphid eggs (organic e.g. Growing Success Winter Tree Wash). This may be used when the buds are fully dormant in November-early February on a dry frost-free day
- Organic insecticides such as natural pyrethrum (e.g. Neudorff Bug Free Bug and Larvae Killer) are available and broad spectrum so will kill a wide range of insects
- More persistent contact-action insecticides include the synthetic pyrethroids lambda-cyhalothrin (e.g. Resolva Bug Killer), deltamethrin (e.g. Provanto Ultimate Fruit & Vegetable Bug Killer, Provanto Sprayday Greenfly Killer) and cypermethrin (e.g. Py Bug Killer). Permethrin is available as a smoke formulation for use in empty glasshouses (e.g. DeadFast Greenhouse Smoke Fumigator 2). These products have long lasting action against insects including those that are beneficial
- Pesticides, with both systemic (absorbed and transported through plant tissues) and contact action, are available. These include Flupyradifurone (Provanto Smart Bug Killer) for use on ornamentals and selected edibles and the neonicotinoid insecticide acetamiprid (e.g. Bug Clear Ultra). These pesticides are widely considered to be the most environmentally damaging, remain active for a long time and will kill beneficial invertebrates

Further information about the use of pesticides available for management of aphids is available on the pesticides for gardeners leaflet

Biology

The life cycles of each aphid species differ in general for much of the year, aphid colonies consist of wingless females that give birth to live young. Winged forms develop when overcrowding, deterioration in the host plant or seasonal changes induce a move to another plant. Most aphid species overwinter as eggs but some can remain as active aphids, particularly in mild winters or on indoor plants.

Many aphids, especially those on fruits and vegetables, go through an annual cycle that involves two or more host plants. The plant on which overwintering eggs are laid is often a tree or shrub. In the spring, the eggs hatch and the aphids feed on the young foliage. By early summer, the foliage has grown older and tougher, this combined with increasing temperatures and day-length induces winged forms of the aphid that migrate to the summer host plant. This is usually a non-woody plant with soft, succulent foliage. Some aphids, however, spend the whole year on one type of plant, although they may be active for only part of the year.

Some aphids can transmit **plant viruses**. This is a particular problem on soft fruits, such as **strawberry** and **raspberry**, and some vegetables such as **tomatoes** and plants of the **cucumber/marrow family**, as well as on some ornamental plants, such as dahlias, lilies, **pelargoniums**, **tulips** and **sweet peas**. Virus-affected plants should be destroyed to prevent the disease being spread to other plants.