

Aphid can cause veggies to deform

Question: A client brought in some broccoli and kale leaves from her garden to the OSU Extension Master Gardener Plant clinic recently. What is causing the leaves on my broccoli and kale to pucker and become deformed?

Answer: After examining the leaves, it was evident that damage was likely caused by aphids. The tiny dreaded insects were crawling everywhere!

Aphids feed on a wide variety of garden plants and on trees such as birch, linden, and maple. Aphids are slow moving, soft bodied sucking insects that usually appear in clusters on new growth. More than 1,300 native species of aphids inhabit North America. They come in a wide range of colors, including pale green, yellow, orange, brown and black, and measure 1/16-1/4 inch long. Aphids are oval to pear shaped and usually wingless. Aphids insert their needle-like mouth parts into plant tissues and remove plant juices, thus robbing the plant of nutrients. One thing that sets aphids apart from other insects is a pair of tubes, called cornicles which look like exhaust pipes, at the posterior end. Another unique feature of aphids is that they rarely lay eggs, and instead give birth to live young, which are clones of their mother. This ability to reproduce parthenogenetically (without fertilization), results in rapid, explosive increases in aphid numbers in a very short time. After one or two generations, winged aphids are born, and



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these fly off to other plants. When male and females mate towards the end of the season, eggs are produced, enabling the insect to overwinter.

Aphids cluster on leaves and stems, where they suck sap, causing curling and cupping of leaves. When you see clusters of gray-green aphids on kale, broccoli, cabbage or Brussels sprouts, you are looking at cabbage aphids (*Brevicoryne brassicae*). Severe infestations cause general loss of plant vigor and stunting, with reduced yields. Aphids excrete excess sugars and sap in a liquid called honeydew through the cornicles. This honeydew attracts ants and an air borne fungus called sooty mold. The ants feed on the honeydew. This food source is so valuable that some species of ants tend the aphids, and even take them into their shelters over winter. Such ants tend to aggravate the aphid problem, distributing them to new plants. Aphids usually appear as the weather begins to warm; they will first be noticed on plant tips, near opening flower and leaf buds. Aphid populations tend to be higher in plants that are fertilized liberally with nitrogen and are heavily watered, as these practices produce flushes of succulent growth. Avoid excessive watering, and use slow-release or organic



PHOTOS COURTESY OF OSU

A green aphid sits on a leaf. Aphids feed on many varieties of plants, and can cause deformation and puckering of vegetables.

sources of nitrogen. Properly fed plants tend to be less troubled by aphids. Apply thick mulch in the summer to keep soil cool and moist.

Heavy rain, especially when accompanied by strong winds, can significantly reduce aphid populations by washing the aphids off the plants. Crops grown under sprinkler irrigation may also have fewer problems with aphids.

It is a good practice to monitor susceptible plants, and then at first sight of aphids simply wash off the plants with a stiff jet of water or by hand wiping. Cradle the plant tips in your hand as you wash off the pests. Sticky honeydew and sooty mold can be washed off with a mild soap and water rinse. These two methods are especially recommended for aphid attacks on edible plants. Adult aphids can also be killed

by spraying plants with insecticidal soap, pyrethrins, or with the botanical insecticide neem. Take care to apply these treatments to the stems and the undersides of leaves. When severely infested annuals fail to recover from aphid attack, it is perhaps better to dig these out and dispose of them.

Aphids have many natural enemies that can be effective in reducing aphid infestations including lady beetles, syrphid fly larvae, green lacewings and parasitoid wasps. Look closely for evidence of predators and avoid broad spectrum insecticide applications that would disrupt these natural enemy populations. Braconid wasps are especially important parasitoids. Lady beetle adults and larvae eat as many as 200 aphids per day and as many as 2400 in their lifespan.



Aphids feed on a broccoli leaf.

Aphids are attracted to the color yellow, and this can be used against them. Bright yellow plastic dishpans make a good trap when filled with soapy water and set near infested or vulnerable plants.

In summary, try combining many methods in your approach to controlling these pesky insects, such as the biological controls, physical/mechanical controls, and cultural controls

discussed here.

Do you have a gardening question? Please email, call, or visit the Douglas County Master Gardener Plant Clinic at douglasmg@oregonstate.edu, 541-672-4461, or 1134 S.E. Douglas Ave., Roseburg. Douglas County Master Gardeners are trained volunteers who help the OSU Extension Service serve the people of Douglas County.