Pest Control No. TPC2

Aphids, *Family Aphididae*

Aphid problems are most common in temperate regions. However, aphids are also present in warmer subtropical areas and sometimes in wet tropical areas.

Host plants

Aphids affect most plants, shrubs and trees, particularly young tender growth. They are often pests of legumes, melons, cucumbers, wild grasses and citrus fruit.

Symptoms

Direct damage occurs through sap removal which is followed by leaf curling, wilting and browning. Some species of aphid have toxins in their saliva and may kill young shoots. Aphids produce honey-dew (a sticky substance) on which sooty moulds grow. Ants, fruit-flies and other pests are often attracted to the honey-dew, causing additional pest problems.

Damage is also caused when aphids transmit virus diseases, such as bean mosaic virus, rosette virus and cucumber mosaic virus. One species of aphid may transmit up to 100 viruses causing diseases on plants belonging to 30 different families.

Description of pest

Aphids are soft, oval-shaped sap eaters, a few millimetres long. The colour of different species varies from yellow, green, brown, grey, white to black.

The mouth part is very sharp and is used to puncture plants and suck out the sap. When successful they live in large numbers and cluster close together on the tender parts of the plant.

An aphid infestation

Life cycle

An adult can produce 2 to 20 offspring per day. In good conditions they will live for at least two weeks. Aphids can be either winged or wingless, the wings developing if the host plant becomes too crowded.

Prevention and control

Being small and soft-bodied, aphids are very susceptible to environmental conditions and populations can be wiped out by a spell of windy rainy weather. On a small scale you can squash aphids by hand, pruning out the infested material or spraying with soapy water. Use potash based soft soap that is used for washing dishes and not the modern washing powders that contain caustic soda which will harm plants.

Ants also need to be controlled as they spread aphids and scare off beneficial predators. Using sticky bands or spray-banding on the trunks of trees and bushes will prevent ants from climbing into the foliage. Sprays made from Mexican marigold, rhubarb and tomato can also help to control ants (Further information is available from HDRA).

Healthy plants: Growing healthy plants helps to prevent aphid infestations. Using compost helps to produce healthy plants that become resistant to attacks. Artificial fertilisers, however, produce sappy young growth that is very attractive to aphids. Increasing plant diversity by intercropping also helps to control aphids.

Companion planting: Planting with garlic, chives, marigold, nasturtiums, parsley, pigeon pea, onion, basil and fennel amongst a crop is said to repel aphids.

Trap cropping: Trap cropping means intercropping with plants that attract pests. In this way the pest does not attack the crop. Milkweed, sowthistle and black nightshade are all said to attract aphids and effectively reduce the number of aphids on crops.

Beneficial insects: As the aphid is small, soft-bodied and slow moving it is preyed upon by a large number of predators and parasites. These natural enemies should be encouraged by maintaining natural surroundings with plenty of breeding places for them. Predators include hoverfly larvae, ladybirds, lacewing larvae, parasitic wasps, the praying mantis, small birds and spiders.

Cow urine: To collect the urine, pen cows (or sheep or goats) overnight on a concrete floor which slopes to a tank. The urine collected must stand, uncovered for 2 weeks in sunlight. To make a spray dilute 1 part of urine into 6 parts of water but the farmer can experiment (care should be taken not to burn tender leaves with too strong a concentration).

Flour preparation: A spray can be made from 2 cups of fine white flour well stirred into 5 to 10 litres of water. This should be sprayed in the morning when the heat of the sun will dry the mixture out, the insects are left encrusted in flour, and they shrivel and die.

Plant preparations

Chillipepper (*Capiscum frutescens*): Use 100g of chillies, 1 litre of water and soapy water (use potash based soft soap that is used for washing dishes and not the modern washing powders that contain caustic soda which will harm plants). Grind the chillies finely in a mortar, put them in the water and stir vigorously. Then filter through fine cloth and dilute 1 part of this mixture with 5 parts of soapy water.

Note: Care should be taken because chillis and chilli solution irritate the skin.

Annona (*Annona muricata A. reticulata A. squamosa*): Annona is commonly known as soursop, custard apple or sweetsop. Seeds from the unripe fruit should be collected and ground to extract the oil. This should be diluted in water and used as a spray. The seeds can also be dried and crushed and dusted directly onto the affected plants or diluted with 20 parts of water, and used as a spray.

sweetsop (*Annona squamosa*)

neem

Neem (*Azadirachta indica*): Native to India, neem is now distributed throughout Southeast Asia, East and sub-Sahelian Africa. Fallen fruits are collected from underneath the trees where they grow. The flesh is removed from the seeds and any remaining shreds washed away. The seed is carefully dried in airy conditions (in sacks or baskets), to avoid formation of mould. When needed, the seeds are shelled, finely grated or pounded, then soaked overnight in a cloth suspended in a barrel of water. There should be 2 to 50g of powder per litre of water. This solution is then sprayed on infested plants.

Other preparations include using derris, garlic, quassia and marigold. Information on these can be obtained by writing to HDRA, the address for which is below.

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