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PROTECT YOUR CABBAGE CROP FROM APHIDS

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Introduction

The cabbage aphid, *Brevicoryne brassicae*, is the most common and destructive pest of cole crops. It is a pest of economic importance since it arrests crop growth seriously and has a tendency to contaminate the crop, rendering it unmarketable. The green peach aphid, *Myzus persicae* also attacks cabbages to a lesser extent. The green peach aphid has a wide range of host plants which include peppers, parsley, beetroot and spinach. The cabbage aphid affects the majority of cole crops or brassicas including cabbage, Brussels sprouts, cauliflower, mustard, radish and turnip. The farmer needs to prevent aphid damage at all costs and control them effectively once they prevail to obtain a decent crop of cabbages.



Aphid infestation on cabbage

Pest description

Cabbage aphids are grey-green in colour and have a white waxy coating. They appear in dense colonies and they feed mostly under young tender leaves. Green peach aphids do not form dense colonies. Aphids sit deep inside cabbage heads, which makes it difficult to control them. Aphids are soft pear-shaped insects. They are easily damaged and killed by their natural predators including lady-bird beetles, lacewings, spiders and small parasitic wasps.

Aphid infestations can easily get out of hand due to the nature of the aphid lifecycle. Aphids survive through winter in the form of eggs. The eggs are black and are covered by thick shells which can survive extreme temperatures. During spring, the eggs hatch into females. The females are capable of producing several generations of female offspring without mating in a process called parthenogenesis. In this manner, colonies grow exponentially in a short space of time. The offspring reaches the reproductive stage in 8-10 days. During cold weather, most offspring is killed by cold, which makes aphid populations more manageable in winter.

The nature of aphid damage

Aphids damage plants by piercing soft plant tissues and sucking sap out of them using well adapted mouth parts. The sharp mouth used for piercing and sucking plant parts is called the proboscis. Tender leaves are severely damaged and killed in the process and become malformed and curled. The aphids also transmit viruses which further arrest plant growth. Infested plants are weak, prone to virus attack and they fail to produce an economic crop. Aphids excrete a sugary substance called honeydew after digesting the sugar-rich plant sap. Honeydew is sought after by ants as a food source. They feed on honeydew left behind by aphids on plant surfaces. They sometimes stimulate ants to produce more honeydew by 'milking' them. The presence of ants on plants is usually the indicator of aphid infestation. Ants tend to protect aphids from natural predators to ensure continuous production of honeydew. Sooty mold, a black fungus tends to grow on leaves with excessive honeydew. This fungus blocks light from reaching the leaves and this negatively affects photosynthesis, hence reducing yield.



Ants 'milking' aphids for honeydew

How to control aphids

Keep your plants healthy

Cabbage plants are heavy feeders which require adequate nutrients throughout their growth. They require adequate nitrogen, phosphorus and potassium together with adequate micro-nutrients in the form of calcium, magnesium, manganese, molybdenum and boron. Cabbage growth is adversely affected by excessively acid soils. A soil pH of 5.5 to 7.5 is recommended. Acid soils tend to make most nutrients unavailable to plants, thus affecting overall plant health. Organic matter is highly beneficial to cabbages. Well rotted animal manure or compost can be used.

Cultural practices

Weeds which belong to the cabbage family must be removed as they attract aphids as well. Seed beds should be kept clean at all times. A minimum three year rotation is advised to prevent aphid infestation.

Biological control

Aphids have a large number of natural enemies or predators. Unfortunately, they are killed due to excessive use chemical pesticides. It is important to keep pesticide use to a minimum so that natural enemies can thrive. They help to keep aphid populations down.



A lacewing larva feeding on aphid



A ladybird beetle feeding on aphid

Organic control

Aphids can be controlled in a garden situation by using mineral oil, neem oil and other organic sprays. This is an example of effective spray against aphids for the home garden:

1 bulb garlic

1 bulb onion

1 tsp cayenne pepper

1 litre water

1 tsp dish washing liquid

Mix the first three ingredients in a blender or food processor into a paste. Be careful not to inhale this pungent paste. Mix with water in a closed container and steep for one hour. Strain, then add dish washing liquid. Spray onto the plants focusing under the leaves where most aphids hide. Spray preferably late in the afternoon or early morning to prevent possible sun damage. The mixture can be stored in the refrigerator for 5 days.

Chemical control

There is a range of recommended chemicals for controlling aphids. They should be used with caution and safety periods need to be observed to prevent crop contamination. Further information on chemicals is available from agricultural extension personnel and chemical companies.