

# Downy Mildew Disease of Cucurbit Crops

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Downy mildew is the most common and widespread disease of cucurbit crops such as cucumber, pumpkin, loofah, honeydew melon and bitter gourd. This disease is caused by the fungus *Pseudoperonospora cubensis* and is present in all cucurbit growing areas throughout the year. Severe infection can retard growth of plants and reduce yield of produce.

## Symptoms

The first symptom on leaves is the appearance of pale green areas on the upper surface. As the disease progresses the pale green areas change to yellow spots which remain angular bounded by veins. On the lower surface of leaves, the symptoms appear as grey to brown angular or circular spots due to spore production by the fungus. As the disease becomes severe the spots turn grey, dry and papery. Heavy infection causes the whole leaves to dry up and curl followed by death. Usually, the lower leaves become infected first, then symptoms appear progressively on younger leaves until most leaves are affected.

## Conditions Favouring Disease

The disease affects cucurbit crops at all stages of growth but mature plants become more severely affected. The fungus can survive on crop residues after harvest and in soil. Disease development is favoured by high



Downy mildew of cucumber

humidity and temperature. Leaf wetness caused by rain, dew, fog and sprinkler irrigation is also conducive to disease development. The fungus produces large numbers of wind-borne spores which may be blown around for several hundred meters to cause infection in neighbouring farms.

## Control

Wide spacing between plants is encouraged to allow free air movement which will keep leaf surface dry.

The lower infected leaves should be pruned to reduce the level of infection.

All crop residues after harvest should be removed and destroyed to prevent carry over of the fungal

pathogen from infested residues.

Rotate cucurbits with other crops such as long bean or sweet corn.

Overhead or sprinkler irrigation should be avoided as this will encourage the development of disease.

Fungicide sprays should be advocated to prevent disease build up. Use chemicals wisely, try to limit the number of applications to a minimum. Ensure that spray equipment is properly set up to give good spray coverage. Start disease control program early and maintain a regular schedule using one of the following fungicides such as Daconil, Kocide, Cupravit and Benlate. **Do not over use the chemicals as this may lead to disease resistance by the fungus.**