



Cantaloupe leaf showing extensive damage caused by leaf miners.



Cantaloupe Pest!

Leaf Miners

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The premature deterioration of the older, or crown, leaves of melons is often termed "crown blight." Our studies in Arizona seem to indicate that no single factor is responsible for this malady.

This so-called "crown blight" has frequently been confused with the injury of such pests as leaf miners, leafhoppers, and spider mites (red spiders). Control of these pests often makes the difference between success and failure in a melon crop, despite the presence or absence of other factors which may favor "crown blight."

Maggots Feed on Melon Leaf

Injury by leaf miners shows up as irregular mines or tunnels within the cantaloupe leaves caused by the feeding of a maggot, which is the immature form of a small fly. The fly, approximately 1/16 inch in length, deposits its eggs within the leaves. The eggs hatch within a

few days, and the tiny maggots complete their life as miners, emerge from the leaf and drop to the soil. Then they enter the pupal stage and about 10 days later appear again as adult flies.

Usually leaf miner flies enter the cantaloupe fields just as the plants are emerging, and deposit eggs in the cotyledons, which subsequently become heavily mined. By the time the plants have developed two new leaves, the second brood of flies is in the field, depositing eggs in the new leaves, which in turn may become heavily mined. The third brood usually appears about the time the plants are starting runners, and many of the crown leaves may be damaged. Plants can usually tolerate the damage of these first three broods with a minimum loss, but injury by later broods is a more serious matter. It is suggested that no attempt at chemical control be made until after the third brood of miners appears. This will give opportunity for parasite development and may prevent trouble later.

Bugs That Eat Bugs

Fifteen species of small, wasp-like parasites are always present and may control infestations if given the opportunity. The largest is about the same size as the leaf miner fly, others about half as large. They are black, blue-black, or greenish black, and most of them have a metallic sheen.

Although adult parasites are very small and difficult to see, they can be observed working over the surface of infested leaves. They lay eggs either within the bodies of the leaf miners or within their mines. After hatching, the young parasites feed on the leaf miners.

When cantaloupe plants have runners one to two feet long, probably at least three broods have developed in the field as previously indicated. It is now time for the grower to examine the plants closely for leaf miners and evidence of leaf miner parasitization. If only two or three mines per leaf occur, the infestation is not serious and treatment is not indicated, but the field should be carefully watched for further leaf miner development.

Look for Dead Miners

If most of the crown leaves are heavily mined, as indicated in the accompanying photograph, the grower should look closely for dead miners in the mines.

If one or two dead miners per leaf can be found this is an indication that parasites are working. Also look for the small parasitic wasps. If dead leaf miners can be found, if the tiny wasps are seen in the field and only very few small mines are developing in the younger leaves, the chances are the grower will not need to apply insecticides to control the leaf miners. The field should be carefully watched for new mines, however, so that chemical control can be started if mines become numerous.

Parathion, the most effective insecticide so far discovered for use against the leaf miner, should be applied when active miners are numerous in the leaves. Adult flies will be killed as well as the maggots. Adult parasites will also be killed, but there is a chance that parasite eggs already laid may hatch and produce a new generation.

Occasionally the older melon fields are subjected to leaf miner migrations from alfalfa or other crops. When this occurs, most of the parasites are left behind and there is little hope of natural control. In such cases the grower should wait until active miners appear in the melon leaves and then apply parathion. Repeat the application in two weeks. Two applications, well timed, may be sufficient.

Get USDA Leaflet

Specific instructions and precautions for the use of parathion against leaf miners are given in USDA Leaflet No. 389, "Cantaloupe Insects in the Southwest—How to Control Them," available from your county agent.

Additional information on insects and mites attacking cantaloupes in Arizona may be found in University of Arizona Experiment Station Bulletin 275, available free from your County Agent.