Plant diseases : angular leaf spot of cucurbits

O M. Goss
ANGULAR LEAF SPOT OF CUCURBITS

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ANGULAR leaf spot caused by the bacterium Pseudomonas lachrymans (E.F.Sm. & Bryan) Carsner, is common on cucumbers and gherkins grown late in the season. The same disease has been recorded on rockmelons, watermelons and pumpkins but rarely occurs on these hosts in Western Australia.

**Symptoms**

The disease appears on leaves, stems and fruit as small water soaked spots. On the leaves they enlarge up to about 3 mms. in diameter and become angular in shape (Figs. 1 and 2). As they enlarge a tan colour develops on the upper surface and the lower surface appears shiny due largely to the drying out of the bacterial ooze.

On the stems and fruits the spots are covered with a white crusty bacterial exudate (Fig. 3). Inside the fruit a brown discoloration develops under the spots and continues along the water conducting strands to the seeds, so giving rise to seed infection. (Fig. 4.)

**Development of the Disease**

The pathogen is seed borne, both internally and externally and also persists in infected crop residues and in the soil. It is favoured by the use of fertilisers which are high in nitrogen and low in potassium. Leaves which are just approaching maximum size are most susceptible to attack and the old mature leaves are most resistant. Spread occurs most readily following
heavy winds accompanied by rain and where sprinkler irrigation is used.

**Control**

The disease is seed borne and careful seed selection and treatment are vitally important.

1. For seed purposes, carefully select a crop where there is no evidence of the disease.

2. Treat seed (at least of unknown origin) with mercuric chloride 1-1000 for 5 to 10 minutes, followed by a water rinse. This is only partially effective as it does not kill organisms within the seed, but no method for complete eradication is known at present.

3. Careful crop rotation and sanitation are essential to eliminate the disease.

4. Do not over manure with nitrogen containing fertilisers but use a fertiliser in which the nitrogen and potash are properly balanced.

5. If the disease becomes established in a growing crop, copper-containing sprays such as copper oxychloride may be used for control. In young plants it is preferable to use Captan or Ziram for the first sprays and then change to copper when the runners develop. This spray schedule should also help to control powdery mildew disease.
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