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POWDERY MILDEW OF CUCURBITS

By G. C. MacNISH, B.A., B.Sc. (Agric.), Plant Pathologist

POWDERY MILDEW* is a widespread and prevalent fungal disease of cucurbits in Western Australia. It is most general on early plantings of rockmelon and cucumbers.

Symptoms and spread
In affected crops the fungus becomes obvious as a grey-white powdery growth of fungal spores and threads (mycelium) forming as patches on the leaves, leaf stalks and runners. These minute spores are easily dislodged by wind and serve to spread the fungus throughout the crop.

The fungus first becomes established on the older leaves and subsequently infects the younger developing leaves. Severely infected leaves turn yellowish-brown and wither. In years of severe attack most of the foliage withers, leaving only a few whole leaves at the tips of the runners.

Following defoliation, the fruit, although not attacked by the fungus, often fail to reach marketable size and are liable to sunburn.

Although infection is favoured by warm to hot humid conditions, the fungus can also become established during relatively dry weather. Conditions suitable for the development of powdery mildew occur in Western Australia in most seasons.

Control measures
1. Fungicides
Powdery mildew becomes very difficult to combat when once established in the crop, and prevention rather than cure should be the aim. This can only be achieved by regular applications of a protectant fungicide, beginning when the first infections of mildew are noticed, and continuing at 8 to 10 day intervals. Recent trials have shown that the following fungicides will give effective control of mildew:

Morestan—at 8 oz. in 100 gallons of water or
Morocide—at 1 lb. in 100 gallons of water or
Karathane—at 1 lb. in 100 gallons of water.

* Caused by Sphaerotheca fuligina (Schlecht.) Poll

Rockmelon leaf affected by powdery mildew

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Powdery mildew on cucumber. The variety in the foreground is severely affected by powdery mildew. The row behind it is of a resistant variety.

About 150 to 200 gallons of spray per acre may be needed for adequate coverage of the plants. For best results thorough spraying at high pressure is necessary. If mist sprayers are used the manufacturer's directions should be followed closely. The use of wetting agents should be determined by the recommendations on the container of the fungicide.

Although in some instances unfavourable weather conditions may check further development of the disease, in most seasons protection will be necessary until the end of the harvest.

NOTE: To prevent scorching of the foliage, fungicides used for powdery mildew control should not be applied when shade temperatures exceed 90°F.

2. Resistant varieties

The growing of powdery mildew-resistant cucurbits should be considered for areas that are prone to regular and serious occurrences of this disease.

The following varieties have shown considerable resistance under local conditions.

Cucumber: Ashley, Palamar and Stone; Rockmelon: Florigold, Hales Best P.M.R.5, Florisun, Conqueror, Rio Gold and Hales Best P.M.R.45; Watermelon: Blackboy and Yankee Doodle.