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BROWN SPOT OF PASSION FRUIT

By R. F. DOEPEL, B.Sc. (Agric.), Plant Pathologist

Brown Spot is a serious fungal disease of passion fruit in this State. Successful crop production is dependent on adequate disease control in the plantation.

BROWN SPOT is found in plantings throughout Western Australia. Severe outbreaks of the disease have occurred in most districts, including Serpentine, Manjimup, Nannup and Denmark. Although isolated young plantings may remain healthy for two or three years, the disease eventually becomes established in the vines.

Symptoms
This disease, which is caused by the fungus Alternaria passiflorae, may affect all above-ground parts of the vine.

On leaves small, circular, dark-brown spots develop which later enlarge and form lighter coloured central areas (Fig. 1). Badly affected leaves fall readily and a severe outbreak of the disease may defoliate vines.

Laterals develop dark brown marks or lesions which may reach several inches in length (Fig. 2). The lesions often encircle the laterals and cut off the sap flow with resulting death of all parts beyond. Sudden wilting of fruit on a recently cinctured lateral is an obvious symptom by which the disease can be detected (Fig 3).

The fungus also attacks the fruit which develop brown sunken spots more or less circular in outline (Fig. 4).
Spread of Disease

The brown spot fungus is spread by means of minute spores or fungal seeds which are produced in large numbers on diseased plant parts. These spores are carried by wind or splashed by rain on to healthy leaves, laterals and fruit where they germinate and cause new infections.

Warm, moist weather conditions favour brown spot development and so in normal seasons the disease is most serious during the spring and early summer.

Unpruned vines are very subject to serious brown spot attack. The tangled growth of foliage and laterals remains wet for long periods after rain and provides ideal conditions for development of the fungus.

Control Measures

Successful control of brown spot depends on the adoption of two routine practices—pruning and spraying.

Pruning

An appropriate method of pruning the vines is necessary at least once a year to prevent the growth becoming too dense on the trellis. Pruned vines dry out more readily after rain and also allow of better penetration and coverage by fungicidal sprays.

Basically the pruning system consists of trimming off all low hanging growth and systematic thinning out of laterals. Any diseased growth should be removed and all prunings burnt.

Details of pruning methods are given in Bulletin No. 2018 entitled "The Passion Fruit" and published by this Department.

Spraying

Immediately after pruning spray the vines with Bordeaux mixture at 8-8-100 strength plus a suitable spreader-sticker.

Routine sprays should also be applied at monthly intervals during spring and early summer, and at two-monthly intervals thereafter.

During spring, the intervals between spray applications should be reduced to 14 days whenever weather conditions are extremely favourable to brown spot development.

Bordeaux mixture should not be applied to the vines for a few weeks prior to harvesting otherwise an unsightly spray deposit will be left on the fruit. To overcome this problem one of the organic fungicides such as zineb or maneb should be substituted in the spray programme at that time.
Fig. 3.—Wilting of fruit on a cinctured lateral is a symptom by which Brown Spot can be easily detected. The affected lateral may have to be traced back several feet before the causal lesion is discovered.

Fig. 4.—Fruit affected by Brown Spot.
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