

## DEPARTMENTAL NOTES

### CITRUS CANKER

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**C**ITRUS canker is probably the most serious disease of citrus grown in the East. It is thought to have come from China in the first instance and it is very common in Ceylon at elevations below 3,000 feet on all varieties of citrus, although some are not so badly attacked as others. Grape-fruit is very susceptible to the disease while the mandarin orange is probably the most resistant species in Ceylon. Other species of citrus known to be attacked by the disease include lime, lemon, pummelo, citron, sweet and sour orange, mandarin and *Nataran*.

#### SYMPTOMS OF THE DISEASE

The disease is most common and characteristic on leaves although it also occurs on fruits, young green twigs and occasionally on larger branches. The leaves are the first place where the appearance of the disease should be sought. On these it forms small roundish cankerous spots up to one-quarter of an inch in diameter. The canker spot is readily recognisable by the naked eye, especially if the leaf is held up and the spot viewed with light coming through the leaf. Except in the earliest stages, the centre of the spot is light-brown in colour and can be felt as a rough raised outgrowth on both surfaces of the leaf. Immediately round the central raised area is an unbroken, narrow, darker oily-looking discoloured zone which in turn is surrounded by a broader, diffuse yellow area which appears as a halo round the spot.

The spots occur on any part of the leaf and are usually round although two or more spots may coalesce to form an irregular shaped diseased area. The disease is sometimes carried by the common leaf mining caterpillar and on some leaves the galleries of the insect are covered by numerous canker spots.

On the fruit the disease occurs as spots but the yellow halo is not so noticeable as on the leaves. The spots on fruits usually have a crater-like appearance and when the infection penetrates deeply an exudation of gum may occur. The value of fruits attacked by canker is reduced considerably but the disease is rendered more serious by the fact that fruit-rotting organisms which cannot attack healthy fruits frequently gain entrance through the canker spots and cause the fruits to decay.

The cankers on the green twigs have a similar appearance to those on the leaves and fruits. They may completely ring the twigs and so cause the die-back of shoots.

The disease does not cause the immediate death of trees and, apart from its effect on fruits, does not at first sight appear to be of great importance. Badly spotted leaves fall off, shoots are killed and in the course of time diseased trees, especially young trees, become unthrifty and a prey to other diseases which do not affect healthy trees.

### THE CAUSE OF THE DISEASE

The disease has been proved to be caused by the bacterium *Psuedomonas citri*. The organism is not known to attack any plants outside the citrus family (*Rutaceae*). During periods of wet weather the bacterium, which is capable of free movement in water, is readily spread in rain drops, splashings and moist soil on the feet and clothing of man, by animals, birds etc. and by wind movements which bring diseased leaves into contact with healthy ones. Except in periods of dry weather all the citrus growing districts in Ceylon below 3,000 feet provide conditions favourable for the development and spread of the disease. It is commonest where there is an even distribution of rain throughout the year.

### CONTROL OF THE DISEASE

Owing to its bacterial nature no methods of curing the disease are known and control can only be effected by the destruction of affected parts of plants, by the prevention of the spread of the disease and by the protection from the disease of healthy plants. In parts of America and Africa the disease has been completely stamped out by the complete destruction of trees and even of whole orchards where the disease has occurred. In Ceylon, where the disease is so wide-spread, such a measure would be impracticable.

The control measures recommended in Ceylon are as follows:—

1. Prune off and burn all die-back branches, cutting back to healthy wood.
2. Pick off and burn all diseased leaves, fruits and shoots.
3. Protect all citrus plants by spraying regularly once a week in wet weather and once a fortnight in dry weather with a reliable fungicide. Details of a cheap and efficient fungicide can be obtained on request from the Mycologist, Department of Agriculture, Peradeniya. Spraying has been proved to be beneficial and to give efficient control. The saving resulting from the improvement in the plants and fruits more than repays the cost of the fungicide and of the labour involved.
4. If possible protect citrus trees from the wind by growing other trees such as *Gliricidia* as wind-breaks.