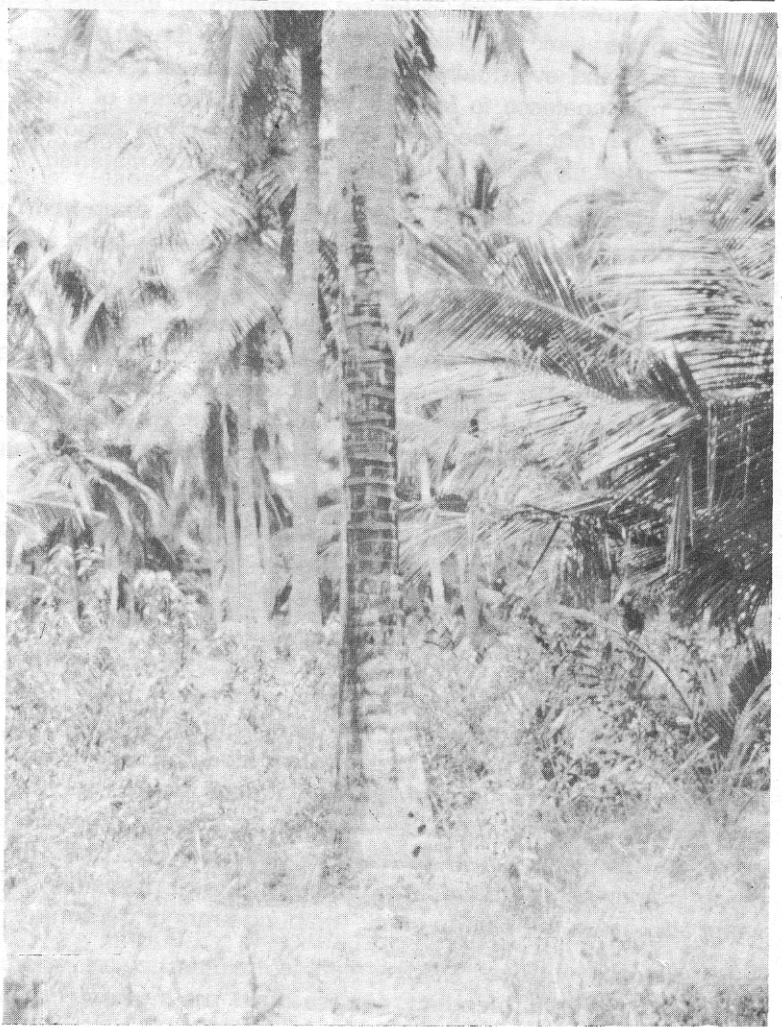


*Coconut Research Institute
Sri Lanka*

STEM BLEEDING DISEASE AND ITS CONTROL



Stem bleeding disease is common in coconut. Bleeding from the trunk is due to a variety of reasons such as lightning, heavy manuring, fire damage, heavy rains or floods and Red Weevil attack. In all these instances, there is cracking of the bark. More often than not, a fungus known as *Ceratocystis paradoxa* invades such weakened tissues. The fungal infection aggravates bleeding.

SYMPTOMS

The initial stages of the disease is characterized by the oozing of reddish brown or rust coloured liquid from longitudinal cracks on the bark of the trunk. Gradually, these patches become dark and eventually blackish grey. Several patches of infection may coalesce to form large patches. Oozing of liquid ceases as the patches become old. The liquid too becomes viscous and finally solidifies as streaks of resinous material.

When a slice of the infected patch is cut with a sharp knife, it will be observed that the fibrous tissue underneath is black and rotten.

Stem bleeding is also a symptom of trees affected with a fungus known as *Ganoderma*. This disease is rare in Sri Lanka. Bracket-like fungal structures in the bole region of the palm are characteristic of this disease. If this condition is observed, please notify the Director of the Coconut Research Institute, Lunuwila.

Vigorously growing young palms with bulbous boles often have cracks on the bark in the bole region. It is not uncommon to have stem bleeding on these palms.

Palms damaged by fire, lightning and Red Weevil often show stem bleeding. Palms subjected to heavy manuring and floods may also have stem bleeding. Fire and lightning damage are easy to detect. In a palm affected by stem bleeding, it is always advisable to look for signs of the Red Weevil attack (such as emergence holes of the weevil, frass, cocoons, crunching noise inside the trunk – please see Advisory Circular B3) before commencing treatment. Sudden uptake of nutrients and water also cause the bark to crack, enabling entry of the fungus.

In general, younger palms with softer tissue are more vulnerable to stem bleeding disease than older palms with harder trunks.

TREATMENT

As in any other disease, early detection makes treatment easier. The infected dark patches should be cut away using a sharp knife, chisel, or more conveniently, using a hand adze. The rotten, black fibrous tissue should be completely removed until the pink, healthy tissue is exposed. The pieces that are removed should be burnt. Once the affected area is cut and cleaned of the infected tissue, Bordeaux mixture should be applied liberally, and repeated a few days later. After about 10 days when no further infection or bleeding is noticed, the wounds should be dressed with coal tar.

If the growers find it difficult to make Bordeaux mixture, they are advised to apply coal tar immediately after the infected patch is cleaned. However, in such instances, the wounds should be re-examined in a few days time to ensure that the bleeding has ceased.

In advanced stages of bleeding when a large area is affected, every effort has to be made to remove as much infected tissue as possible. In such instances it is not uncommon to find secondary infestation by termites. It is then necessary to spray or paint an insecticide to control the termites, along with the fungicidal treatment.

In the case of stem bleeding caused by lightning, making oblique holes in the basal area of the trunk to drain out fluids has been found to be beneficial. Afterwards, the holes should be filled with cement mortar.

The growers are advised to investigate the cause of stem bleeding before attempting treatment. Treatment largely depends on the individual condition, but it would be necessary to clean the bleeding patches and dress them as indicated above.

Bordeaux mixture

Bordeaux mixture is prepared as follows: (Use earthenware vessels)

Copper sulphate	– 200 g
Quick lime	– 200 g
Water	– 25 litres

Dissolve copper sulphate overnight in 5 litres of water (suspend in a bag to facilitate dissolving). Suspend lime separately in 20 litres of water and strain through a fine cloth. Add the copper sulphate to the lime stirring vigorously.

Use immediately after preparation.

Note: All fungicides are toxic and should be handled with care.

Prepared by the Coconut Research Institute, Lunuwila,
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