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PROTECTION OF TEA FROM COLLAR AND BRANCH CANKER DISEASE IN THE UP COUNTRY
(*Phomopsis theae*)

(This Advisory Circular replaces Circular No D6, Serial No 15/76)

1. Introduction

The fungus *Phomopsis theae* attacks tea plants in immature new clearings (up to 8 years) and also the tender shoots of mature seedling teas and tea cultivars, in areas over 1200 m (4000 ft) in elevation. In all cases, infection takes place during dry weather conditions.

2. Symptoms and Diagnosis

In mature bushes that are recovering from pruning under very dry conditions, some tender shoots may become diseased and die back. This is not considered a serious problem, because it could in the end cut down on transpiration losses while in the mean time allowing the uninfected shoots to become healthier as a result of the rerouted sap flow towards them.

Those bushes that are infected at the collar start to show general yellowing of the entire foliage. These symptoms become heightened with the onset of rains when they fail to recover, compared to an adjacent healthy bush. Upon uprooting, such plants will show near complete or complete girdling at the collar, depending on the intensity of yellowing. This could give the impression that the disease starts with the rains.

Perfectly healthy well-grown VP plants are not attacked even during dry conditions. Infection takes place through leaf scars, wounds or directly by penetration of the bark in plants, which are subjected to moisture stress. This is found to be more common in VP tea cultivars, which have a shallow rooting habit, or in plants growing in unsuitable soils. Similarly, poorly developed nursery plants having weak root systems are also prone to attack. Infections over a large area is uncommon unless the area has poor, gravelly or clayey soil with underlying slab rock or unless very susceptible tea cultivars are used. Infections are usually sporadic and occasional, and patchy infections are a rarity.

3. Control of Collar and Branch Cankers

An integrated system of control has been found to be the most suitable. These will have to be invariably combined with measures to conserve soil moisture during dry weather periods. The following measures are recommended in order to raise plants, which can withstand infection.

3.1 Cultural methods

(a) Nursery Practices

It is necessary to raise healthy and uniformly grown plants in the nursery. In order to achieve this, the following measures are recommended:

- Avoid the use of susceptible cultivars (i.e. KEN 16/3, K 145, TRI 2024, TRI 2142, TRI 3020, TRI 4067, TRI 3073, TRI 3072) in the drier tea districts where *Phomopsis* canker is a problem.
- Always use good soil for raising nursery plants.
- Never plant two cuttings in a bag, as these plants will ultimately compete with each other.
- Do not resort to use any sub-standard plants for field planting.
- Ensure that only the uniformly grown plants are planted out in the field in order to minimize competition later on.

(b) Field Practices

Land Selection

Avoid planting in unsuitable lands in steep and rocky areas, in areas with underlying slab rock, ravines and in areas with poor drainage.

During rehabilitation

- Examine the grass during the drought and mark out the areas where the grass is not growing satisfactorily, particularly in patches.
- Determine whether such poor growth is due to underlying slab rock or poor soil by digging a pit.
- Having determined the cause of the poor growth of grass, either ameliorate it or diversify into grass.

During field planting

- Begin planting with the best plants, then use the medium category plants and discard the very poor plants.
- It is important to prepare correct-size planting holes and follow up by correct planting, to encourage a well distributed root system.
- In nematode infested areas, treat planting holes against nematodes (see Circular No PM4, Serial No. 5/02)
- Thatch the clearing with loppings of Mana, Guatemala or *Eragrostis curvula*.

Post-planting operations

Apply fertilizer correctly, as recommended (see Circular No SP 2; Serial No 00/2).

- If and when bending is desired, great care must be exercised not to damage plants while bending. Most infections are found on bent or damaged plants.
- Protect the plants against blister blight until maturity. Entry of *Phomopsis* can take place through wounds caused by stem infections due to blister blight.
- If any cankers are noticed, remove the branch just below the canker as soon as they are noticed.
- Thatch all new clearings adequately. All road banks, drain sides and footpath banks should be planted with *Eragrostis curvula* to provide loppings for thatching.

3.2 Chemical methods

As infection is always sporadic, prophylactic treatment of all plants in a clearing is not advocated in order to prevent possible infection on a small number of plants. However, it has been observed that the fields, which receive adequate controlling in blister blight, by way of fungicides, particularly the systemic ones, to record less incidence of *Phomopsis* canker. By the time the plant has started showing general yellowing of the foliage, it is too late for any chemical treatment. They have to be uprooted and burnt.

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