

# Coconut Research Institute Sri Lanka

## TAPERING OF PALMS AND LEAF SCORCH DECLINE

Tapering and Leaf Scorch Decline of coconut are prevalent in most coconut growing areas under almost all conditions of environment. They are found both in good and bad soils. This complex condition can be classified into the following categories.

1. Rapid tapering associated with Leaf Scorch Decline,
2. Gradual Tapering.

### 1. Rapid tapering associated with Leaf Scorch Decline

Leaf Scorch Decline is a disorder of coconut palms, first detected in the Southern Province of Sri Lanka in 1955. The condition had been observed, generally, in palms over 20 years of age.

Leaf Scorch Decline with concomitant tapering occurs under diverse environmental conditions including lands under regular cultivation and manuring. It is not uncommon to see heavy bearing palms and those tapped continuously succumb to this condition. A recent survey has indicated an incidence of about 0.75% of Leaf Scorch Decline in the coconut triangle. A relatively higher rate of tapering was observed in estates which have not been fertilized regularly and where soil was shallow and compact.

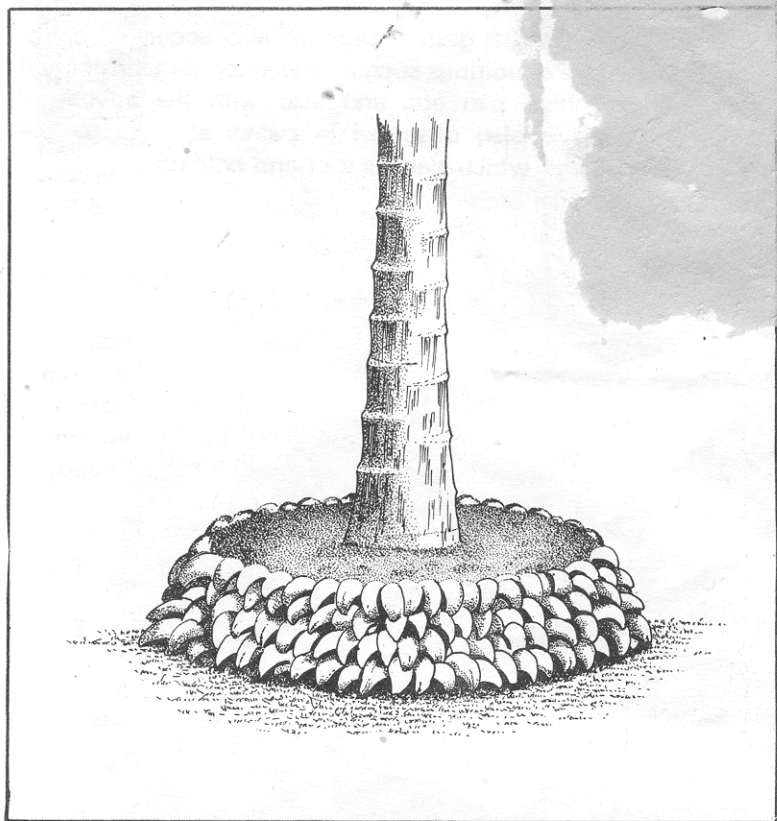
## Symptoms

Leaf Scorch Decline could easily be identified in the early stages by the characteristic scorching and downward curling of leaf tips in older fronds. After a period of time, depending on the location and the management, the crown diminishes in size and the trunk begins to taper. The size as well as the number of fronds decrease. When the crown starts reducing, formation of inflorescences may cease completely. Nuts produced would be elongated and malformed. There is also extensive dieback of roots.

Although extensive research work has been carried out on Leaf Scorch Decline, there is no conclusive evidence to implicate a pathogen with this condition. However, the condition is often associated with one or more of the following:

- (a) Cracking of heavy clay soils due to drought,
- (b) Cement like hard pan particularly seen in gravelly soils and in certain areas in sandy loams,
- (c) Infestations of "Kadiyas" and white ants,
- (d) Magnesium deficiency.

Palms at an early stage in the development of this condition could be corrected by inducing new root formation, which could be easily achieved by bench terracing round the base of the palm. This is done by constructing a circular bench to a height of about 0.5 metre ( $1\frac{1}{2}$  ft.) with coconut husks about 1 m. (3 ft.) away from the base of the palm and filling the space with porous soil, preferably rich in organic matter (Fig. 1). This should be followed by regular manuring. Palms showing symptoms of magnesium deficiency should receive magnesium fertilizers as indicated in advisory circular No. A 5.



**Fig. 1** *Construction of a circular bund with husks.*

## **2. Gradual tapering**

The gradual tapering of the trunk is generally the result of prolonged neglect. The basic underlying cause appears to be a retardation in growth due to general malnutrition. As to be expected, the onset of this condition is hastened in shallow infertile soils.

The incidence of gradual tapering due to neglect is more extensive than in the case of rapid tapering. Ultimately a neglected property becomes unproductive and the palms suffer premature senility and death on an extensive scale.

Palms in the initial stages of decline may be rehabilitated by improving the soil by application of fertilizer and organic manure, husk burial, cover crops etc.,

It should be noted that gradual tapering also occurs on palms exposed to adverse conditions such as water-logging, prolonged moisture stress, hard pan etc. and also with the advent of senility. Tapering is also observed in palms affected by the fungus, *Ganoderma* which causes root and bole rot.

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