

# PRELIMINARY OBSERVATIONS ON THE "YELLOW LEAF DISEASE" OF ARECANUT PALM.

By

SHAMA BHAT KHANDIGE, G. I. PATEL &  
K. V. AHAMAD BAVAPPA  
Central Arecanut Research Station, Vittal.

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In recent years reports were received from the areca growers of Sullia, Bellare, Vittal etc. of South Kanara about the yellowing and wilting of young areca plants during summer months and when examined, infestation by mites was found to be the cause of this phenomenon. During the summer of 1957, several gardens round about Vittal and Perdala had the outbreak of the pest in a severe form and the plants infested with mites showed symptoms similar to those, as understood, for the "Yellow Leaf Disease" of arecanut palms in Kerala whose causes were not known.

With the above background a preliminary survey of the important arecanut growing districts (Cannanore, Trichur, Kottayam, Quilon and Trivandrum) of Kerala State, affected by 'Yellow Leaf' was made during May-June, 1957. On examination of the leaves, it revealed that the causal organism is mite. Enquiries indicated that the malady of Yellow Leaf was noticed as early as 20 years back but has become virulent in recent years. It is popularly known as 'Chovakedu' near Chengaloor of Mukundapuram, 'Karimputhal' near Periyar river belt, 'Plague' near Muvattupuzha and 'Vasantha' or 'Kattu' or 'Leaf-disease' in other areas.

*Symptoms and causes*:—Trees having pale yellow leaves and drooping crown are the first visible symptoms of an affected garden. The undersurfaces of such leaves when closely examined look as though they had been very lightly dusted with fine white or red powder. When examined under lens, those regions are seen to consist of empty wrinkled skins and minute spherical eggs covered over by almost invisible strands of silk. Under this silk or web and beneath it on the surface of leaf are found either resting or running about numerous

minute whitish or reddish eight-legged mites of varying sizes. These mites live upon the sap of the plant which is drawn by piercing the leaf with two sharp lances attached to the mouth. Consequently anabolic substances are sucked out from the plant and assimilation surface is reduced due to destruction of cells which are naturally accompanied by loss of vigour of palms, production of undersized spindles and leaves with crinkled spadices, non-matured fruit and yield losses in the following year. The infested parts of the leaves to begin with turn sickly yellow and along with the increased activity of the mites, they look more and more yellow and finally giving an appearance of more or less completely yellow or bronzed; further they droop down and wilt. The attack is commonly seen on tender foliage. During monsoon the affected trees are seen with two or three lower drooping leaves having portions with dried midribs of leaflets and thus giving broom like appearance. Almost any green portion of the areca palm, viz., tender unfurled spindle, stem and even green fruits are found infested in severe cases. The mites suck sap from the epidermis below the calyx of tender nuts causing shrinkage and fall of tender fruits. The infestation was observed both in irrigated and non-irrigated gardens and palms of all ages (i. e., from seedlings in the nurseries to adult palms in gardens), but mostly in non-irrigated exposed situations. Hot, dry weather appears to be favourable to the incidence of

these mites and the population get considerably reduced during the monsoon. Since the mites and their eggs are very light, they are likely to be transmitted during heavy wind from tree to tree which also adds to their easy spread and further multiplication.

The mite infestation on areca has been observed in Shimoga and practically in the entire areca belt of West Coast.

*Control measures:*—Preliminary trials carried out at the Central Arecanut Research Station, Vittal, on the arecanut nurseries indicate that either spraying wettable sulphur (1 oz. per 2 to 3 gallons of water) or Folidol (2 c.c. per gallon of water) or dusting lime plus sulphur (2:1) may be taken up as an immediate measure to control the mites on areca plants. Care may be taken to spray or dust thoroughly the lower surfaces of leaves which harbour the mite population. The application of miticide may be commenced from early December, when mites become active and build up the population with the advance of hot weather. The spraying or dusting may be repeated if found necessary.

The different species of mites causing the 'Yellow Leaf of arecanut palms' is being identified and trials for determining the comparative efficacy of different miticides are under way at the Central Arecanut Research Station, Vittal.

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