Extension Folder No. 18

MANAGEMENT OF ROOT (wilt) AFFECTED COCONUT GARDENS

CPCRI

CENTRAL PLANTATION CROPS RESEARCH INSTITUTE
(INDIAN COUNCIL OF AGRICULTURAL RESEARCH)
Kasaragod - 670 124, Kerala, India

MANAGEMENT OF ROOT (WILT) AFFECTED COCONUT GARDENS

Coconut root (wilt) disease is not lethal; but it debilitates the production potential of the palms. The disease is caused by Mycoplasma-like organisms. Though no therapeutic control of the disease is available till date, it has been possible to evolve a technology to increase the productivity of the diseased palms. This comprises scientific and balanced fertilisation, application of organics, cultivation of compatible crops in the interspaces of coconut, eradication of disease advanced and uneconomic palms, planting of quality seedlings, plant protection measures to control other pathogens and pests of coconut, prevention of drought and water logging and restructuring of other perennial crop species.

Root (wilt) disease is not caused by any nutritional deficiency. However, apparently healthy palms in the disease affected areas as also early diseased palms respond well to scientific and balanced fertilizer application. It is necessary to supply 500 g nitrogen, 300 g phosphorus, 1000 g potassium and 500 g magnesium oxide to each palm in two splits in all year when sufficient moisture is available in the soil. For the purpose, it is sufficient to apply 1.1 kg urea, 1.7 kg super phosphate, 1.7 kg muriate of potash and 3 kg magnesium sulphate to each palm. Under rainfed conditions, one-third of these fertilizers should be applied at the start of the monsoon (April-May) and the remaining two-third towards the end of the monsoon (September-October). Wherever irrigation facilities are available fertilizers can be applied in four lots in the months of January, April, August and October. Even for hybrids these fertilizer doses will be sufficient.

Application of organics to the soil will improve its physical structure and the capacity to retain water and nutrients. It will be beneficial to apply 50 kg cow dung or compost to each palm in a year. It will be also desirable to cultivate green manure crops in the coconut basins. The same may be ploughed into the soil. After the application of first dose of chemical fertilisers, seeds of *Peuraria* (10 g) can be sown into each basin, which can grow to produce approximately 18 kg of green manure in four months. This can be incorporated into the soil during the application of second dose of fertilisers.

Intercropping with elephant foot yam, ginger, yam, colocasia, etc. in rotation in coconut gardens can substantially increase production of coconut. Cultivation of fodder grasses and maintenance of milch cows in heavily diseased gardens facilitates organic recycling. Irrespective or the disease condition of the palms this helps to increase the yield considerably. Whenever intercrops are cultivated, both the coconut and the intercrop need separate fertilisation.

Disease advanced palms will be uneconomical and do not respond to care and management. Such palms are to be eradicated. Likewise, in the sparsely diseased areas (north of Trichur) even early diseased palms irrespective of the age and productivity should be eradicated. This will not only remove the foci of infection but also prevent the spread of the disease to newer areas. Even juvenile palms which take up the disease before the onset of flowering need be removed. Such young palms will never bear properly. Spraying of 0.1% Endosulphan or Monocrotophos to the leaves of disease affected palms before removal will be beneficial in suppressing insect vector to some extent. After eradication, quality seedlings may be planted in the garden if sufficient space is available.

Leaf rot is another disease normally found super imposed on the coconut root (wilt) affected palms which can drastically reduce the yield of the palms. This disease can be controlled by spraying fungicides (Bordeaux mixture 1%, Dithane M-45, 0.3% and Phytolan 0.5%) in a sequential manner three times a year. Rhinoceros beetle and red palm weevil which affect coconut palms are to be properly controlled.

Drainage should be provided for increasing aeration in the soil and more of soil should be applied in low lying areas to

facilitate production of new roots. In summer 600-900 litres water may be applied to each palm once in 4-6 days. The population of unwanted trees can be reduced and other perennial crops species restructured by cutting the branches. This will ensure more sunlight to the palms.

By adopting integrated management practices the yield of root (wilt) affected palms can be increased by more than 23 nuts/palm/yr. on an average. The response was much higher in apparently healthy and disease early palms.

POINTS TO REMEMBER

- Remove disease advanced uneconomic palms
- Remove all diseased juvenile palms
- Eradicate every diseased palm in newer areas
- Apply balanced doses of fertilisers
- Add 50 kg Farmyard manure per palm per year
- Grow green manures in basins
- Intercrop only with compatible crops
- Adopt mixed farming and recycle organics
- Control leaf rot by spraying fungicides
- Protect from red palm weevil and rhinoceros beetle
- Irrigate during summer and avoid water logging
- Restructure perennial trees to reduce shading

Published by: M. K. Nair
Director, CPCRI,
Kasaragod-670 124 Kerala

Text prepared and edited by: A. Muralidharan
N. P. Jayashankar
Nov.—1989

Printed at : Sharada Press, Mangalore.