

EFFECT OF SOIL APPLICATION OF FERTILIZERS AND MICRONUTRIENTS ON ROOT (WILT) DISEASE AND YIELD OF COCONUT IN THE BACK WATER REGION OF KERALA.

Micro elements have been noted to induce changes in external growth attributes and inorganic and organic composition of plants. In many cases they bring about marked changes of a biochemical nature like chlorophyll formation, respiration and photosynthetic activity. Above all these are credited with the function of increasing the resistance of plants to diseases.

Studies conducted by Davis & Pillai (1966) on the effect of Magnesium and certain micronutrients on root (wilt) affected and healthy coconut palms indicate that magnesium, copper and manganese increased the yields of nuts in both healthy and root (wilt) affected trees. Experiments conducted by Pillai (1975) revealed that the root (wilt) affected coconut palms show deficiency of iron, manganese, molybdenum and zinc. Sankara Subramoney *et al* (1951) found no correlation between disease incidence and manganese content of the soil and palm tissues. Trials conducted on the N P K requirements of coconut in the back-water region of Kerala showed that single dressing of ammonium sulphate, urea and potassium chloride enhanced yield of coconut in that area (Thomas, 1967).

The Influence of fertilizers with and without a dose of certain micronutrients on the yield and disease condition of coconut palm was studied in a field experiment of a 9 x 4 randomised block design with 9 treatments at the Coconut Research Station, Kumarakom during the period 1962 to 1971. The soil type of the experiment plot was reclaimed clayey loam and acidic in reaction (pH 5.2).

Each plot contained 8 diseased palms of the group 30-40 years. All palms in the experiment were given a basal dose of 20 kg of green manure and 20 kg of cattle manure per tree per year. River sand @ 87 cubic metres per hectare were also applied in addition. N P K and micronutrients are applied basally in soil. Observations on the yield of nuts and the intensity of the disease syndrome were recorded at half yearly intervals from 1965 upto 1971. The disease intensity was assessed by scoring for symptoms like flaccidity, yellowing and necrosis and expressed in per cent. The treatments were started during 1963 and continued upto 1967.

The yield data and mean intensity indices of disease for the years 1965 to 1971 are presented in Table 1. The effects due to the treatments are not found statistically significant for the whole period except that of 1967. Application of fertilizers had high response in yield during 1967. The increase in yield was also significant in the case of treatment with N P K @ 500:700:1400g/tree/year.

Further the trend in yield during the subsequent years 1968, 69 and 70 show that the maximum number of nuts were recorded by the palms which received zinc treatment. It may be noted from the data (Table 1) that the yield obtained by treatment with Bo, Mn, Cu and Mo either singly or in combination are insignificant when compared with the control which is in agreement with the findings of Radha (1963).

Analysis of the data on mean intensity of infection of root (wilt) disease collected for the period from 1965 to 1971 (table 1) revealed that the treatments have given a negative response with regard to the intensity of disease. It was observed that application of N P K or trace elements like Bo, Mn, Cu, Mo and Zn had any effect in bringing down the intensity of root (wilt) disease both when applied singly or in combinations. Sankara Subramoney *et al* (1951) found no correlations between disease incidence and manganese content of the soils and palm tissues which corroborate with the result of the present study.

സംഗ്രഹം

നൈട്രജൻ, ഫോസ്ഫറസ്, പൊട്ടാഷ്യം എന്നീ മുഖ്യസസ്യോഹാര മൂലകങ്ങളും ബോറോൺ, മാംഗനീസ്, കോപ്പർ, മോളിബ്ഡിനം, സിങ്ക് എന്നീ സൂക്ഷ്മ മൂലകങ്ങളും രോഗബാധയുള്ള തെങ്ങുകളിൽ പ്രയോഗിച്ചു നോക്കിയതിൽ ഒരു തെങ്ങിന് ആണ്ടിൽ 250 ഗ്രാം നൈട്രജൻ, 350 ഗ്രാം ഫോസ്ഫറസ്, 700 ഗ്രാം പൊട്ടാഷ്യം, 200 ഗ്രാം സിങ്ക് സരഫേറസ് ഈ തോതിൽ മണ്ണിൽചേർത്ത തെങ്ങുകൾക്ക് രേങ്ങായുടെ എണ്ണം കൂടുതലായികണ്ടു. അതോടൊപ്പം മുഖ്യമൂലകങ്ങൾക്കും സൂക്ഷ്മമൂലകങ്ങൾക്കും തെങ്ങിന്റെ രോഗബാധയെ നിയന്ത്രിക്കുന്നതിന് കഴിവില്ലെന്നും തെളിഞ്ഞിട്ടുണ്ട്.

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