

STATUS OF SOIL BORON IN COCONUT ESTATES IN THE COCONUT TRIANGLE OF SRI LANKA

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Boron (B), an essential micronutrient required for the growth of plants, which is a naturally occurring element found in the form of borates. It is frequently found in low levels in tropical soils, which affect nutrition and productivity of coconut (*Cocos nucifera*. L) plants. Amount of total B in soils is not necessarily correlated with its availability to plants. In most soils, the amount of available B for plant uptake is less than 5% of the total B in the soil. Therefore, the objective of this study was to determine the soil available B content in some coconut estates falling within the coconut triangle. For the study, coconut estates were randomly selected to represent the wet, intermediate and dry zones. Coconut palms were also randomly selected and individual soil samples were collected from manure circle of coconut palms at the depths of 0 - 20 and 20 - 40 cm from the surface. Soil samples were analyzed for hot water soluble B to estimate total available B. Soil pH and organic carbon content were determined using standard analytical methods. Results indicated that, pH values of the soils varied in a wide range in the coconut triangle. The hot water soluble B values in surface soils ranged from 0.012 to 2.33 mg/kg, 0.010 to 7.55 mg/kg and 0.001 to 1.46 mg/kg for wet, intermediate and dry zones, respectively. A similar trend was observed in sub soils as well. The 48% of the surface and 62 % of sub surface soils were below the critical soil B value of 0.5 mg/kg, indicating B deficiency in some coconut estates. There was no ($p > 0.05$) significant correlation observed among soil B values and pH and organic carbon content of the soils. Finally, it can be concluded that B level in some of the areas in coconut triangle of Sri Lanka are in deficient conditions.

Keywords: Boron, Coconut, Deficiency, Soil