

REMEDICATION OF MANGANESE DEFICIENCY IN TEA (*Camellia sinensis*) PLANTATION OF MASKELIYA SERIES

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This study was initiated to investigate the effect of application of different source of Manganese (Mn) fertilizer under application of different Nitrogen (N) fertilizer for remediation of Mn deficiency in tea land in Muskeliya series. Long term negligence of micronutrient application and inherited low levels in the soil can lead to visible deficiency in tea field. The experimental plots were located at Field number 07, Hamilton Division, Laxapana Estate, Muskeliya, Sri Lanka. The trial was carried out as a Randomized Complete Block Design, using 62/6 tea cultivar. Field plots were selected for seven treatments having two N sources with or without soil or foliar Mn applications with three replicates. Collected data were analyzed using Analysis of Variance. Ammonium sulphate fertilizer applied plots showed lower pH values than urea applied plot irrespective of manganese sulphate application. Though, there is no significant difference ($p < 0.05$) in soil Mn content among treatments applied, the highest value was observed with ammonium sulphate and soil manganese sulphate combination. Significant differences ($p < 0.05$) in leaf Mn content were observed among treatments and the highest values were observed in plots applied with ammonium sulphate with manganese sulphate. The plots applied with manganese sulphate foliar application and with ammonium sulphate and manganese sulphate soil application with soil ammonium sulphate had the mean values of 133.42 ppm and 113.58 ppm of Mn content in mother leaves of tea respectively. The critical level of manganese in tea leaf is 100 ppm. No significant differences ($p > 0.05$) in yield were found among treatments. This may be due to fertilizer response for perennial crop like tea; the yield response cannot be expected within a short period of time. Thus it can be concluded, that application of ammonium sulphate with manganese fertilizer can be recommended as a remedy for Mn deficiency in tea plantations of Maskeliya series.

Keywords: Ammonium sulphate, *Camellia sinensis*, Micronutrients, Soil pH

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