# A STUDY ON IRON -CHLOROSIS OF SWEET ORANGES (CITRUS SINENSIS) GROWN IN BIBILE

M.D.J. Wijayabandara and S.P. Deraniyagala
Dept. of Chemistry, University of Sri Jayewardenepura.

Iron Chlorisis (Chlorisis is a term used to describe marked deficiency of chlorophyll in plants) is an important nutritional problem in agriculture and has plagued citrus growers in the world throughout the history of citrus growing.[1] This arises due to the deficiency of iron in leaves and may be caused by the lack of soluble iron in the soil.

Citrus sinensis (Sweet Oranges) grown in Bibile showed the symptoms of iron - chlorosis. Hence this study was undertaken to determine the extent of insolubility of iron in soils taken from two orange orchards followed by analysis of leaves to verify whether chlorisis is caused by a simple deficiency of iron in leaves. In addition, the study was also extended to establish some effective chelating agents that would make iron soluble and cure iron - deficiency Three chelating agents were selected for this purpose. They are $Na_2$EDTA (disodium salt of ethylenediaminetetraacetic acid) CDTA (cyclohexane 1,2 diaminotetraacetic acid) and NTA (nitrilotriacetic acid).

Preliminary results obtained in this investigation can be summarized as follows:

(1) Iron-chlorosis of orange trees is caused by a simple deficiency of iron in the leaves.

(2) A very low percentage of soluble iron was found in both orchards. The total iron content was considerably greater than when compared with soluble iron.

(3) Application of chelating agents to iron-deficient soils resulted in an increase of soluble iron. CDTA was found to be somewhat more effective than the other two chelating agents in solubilization of insoluble forms of iron.

References:

Wallihan E.F., and Embleton, T.W. (1954) Citrus Leaves, 8.