

DETERMINATION OF MICRONUTRIENTS AND MACRONUTRIENTS IN SOIL SAMPLES FROM
AROUND LAKE OL-BOLOSSAT

P. M. Mbuguah¹, A. M. Salim*¹, A. O Onditi¹, A. O. Yusufu²

¹Chemistry Department, Jomo Kenyatta University of Agriculture and Technology (JKUAT), P.O. Box
62000 00200 CITY SQUARE Nairobi

²Department of Chemistry, University of Nairobi, P. O. Box 30197-00100 GPO Nairobi

ABSTRACT

Soil minerals are classified as macro and micronutrient. The soil samples were collected randomly and assayed. 5 g of soil was shaken with 1 % EDTA and analyzed for Copper, Iron, Zinc and Lead, by flame Atomic Absorption spectroscopy. 10 g of soil was shaken in double acid and analyzed for Potassium, Sodium using flame photometer. calcium using flame atomic absorption spectroscopy and phosphate using UV-VIS spectrophotometry. 0.5M of K_2SO_4 was used to extract 5 g of soil for nitrates then analyzed using UV-VIS spectrophotometry. Comparing the results obtained with those that conformed with the Kenya Agricultural Research Institute (KARI) specification in me/100 g of soil. PO_4^{3-} for all samples was within the range i.e. > 2 , NO_3^- was within the range i.e. > 0.25 , only A1 and B2 for K were within the range i.e. 2, Na for all samples was within the range i.e. 1. Ca was within the range i.e. 8-10, for all samples. Fe, for all samples, was within the range i.e. < 1 , only B1, B2, C1, C2, for Zn were within the range i.e. > 1 . Cu for all samples was within the range i.e. > 1 and all values for Pb were within the range i.e. < 1 . Thus it can be concluded that, the soil can be exploited productively for horticultural products.

Keywords: *Macronutrients and micronutrients, assayed, double acid, flame Atomic Absorption spectroscopy, flame photometer, UV-VIS spectrophotometry*

INTRODUCTION