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

P. M. Mbugua, A. M. Salim, A. O. Onditi, A. O. Yusufu

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

Department 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 K₂SO₄ 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. PO₄³⁻ for all samples was within the range i.e. > 2, NO₃⁻ was within the range i.e. > 0.25, only Al 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