

Application of Neutron Activation Analysis Technique for the Analysis of Soil Samples from Farmlands of Yebrage Hawariat, East Gojjam, Ethiopia

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Abstract : Farmers may not be conscious for their farmland's nutrients, soil organic matter, water and air because they simply concerned only for their labor availability and soil fertility losses. The composition and proportion of these components greatly influence soil physical properties, including texture, structure, and porosity, the fraction of pore space in a soil. The soil of this farmland must be able to supply adequate amount of plant nutrients, in forms which can be absorbed by the crop, within its lifespan. Deficiencies or imbalances in the supply of any of essential elements can compromise growth, affecting root development, cell division, crop quality, crop yield and resistance to disease and drought. This study was conducted to fill this knowledge gap in order to develop economically vital and environmentally accepted nutrient management strategies for the use of soils in agricultural lands. The objective of this study is to assess the elemental contents and concentration of soil samples collected from farmlands of 'Yebrage' using Neutron Activation Analysis (NAA) techniques regardless of oxidation state, chemical form or physical locations. NAA is used to determine the elemental composition and concentrations present in a soil. The macro/micronutrient and organic matter deficiencies have been verified in agricultural soils through increased use of soil testing and plant analysis. The challenge for agriculture over the coming decades will meet the world's increasing demands for food in a sustainable way. Current issues and future challenges point out that as long as agriculture remains a soil-based industry, major decreases in productivity likely to be attained ensuring that plants do not have adequate and balanced supply of nutrients.

Keywords : NAA, Yebrage, Chemoga, macro/micronutrient

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