

ASSESSMENT OF SOIL AVAILABLE MACRO AND MICRONUTRIENTS CONTENT AT S.C. EVEL-H COMPANY S.R.L., ROMANIA

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Abstract

In the context of climate change and a growing world population, soil quality assessment is required for food security and for rising the quality of yield and crop production. In order to obtain a sustainable and an efficient production, taking into account the environment, a study was carried out to evaluate the content of accessible macro and micronutrients in plants at S.C. Evel-H COMPANY S.R.L. To evaluate the soil status supply, 12 average agrochemical soil samples from the 0-20 cm depth were taken and analysed. Quantitative analysis of Zn, Cu, Fe, Mn, B, K was performed using a high resolution continuum source, atomic adsorption spectrometer AAS (ContrAA 700, Analytik Jena, Germany) and phosphorus determination was done colorimetrically (Specord 210 Plus). The results obtained reveal an optimal content of macro and micronutrients under the experimental conditions. The trends of the average concentrations of micronutrients were as follows 51.28>18.38>0.9>0.68>0.36 mg/kg for Mn, Fe, Zn, Cu, B, and for macronutrients were S<I.N.<P<K with values 0.027<2.31<142<342. The optimal nutrient ratio ensures a higher yield even if one of the growing factors is at minimum availability and content. Imbalances produced by decreased different nutrient concentrations induce disturbances in plant metabolism manifested by minimizing yield and/or susceptibility to pathogen attack.

Key words: soil, concentrations, micronutrients, macronutrients