

Solubility and Behavior of Zinc Added to Some Sub-Saharan Torrifuvents Soil, South of Libya

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ABSTRACT

A laboratory experiment was carried out to study solubility and behavior of dominant zinc phase, as a result of zinc addition to four Torrifuvents soil from Sub-Saharan region, south of Libya. Two grams of each soil were equilibrated with wide concentration range of zinc; i.e. 0, 10, 20, 40, 80 and 160 $\mu\text{g l}^{-1}$ at soil solution ratio 1:25. Two zinc carriers were used; i.e. inorganic (sulphate) and organic (EDTA). Obtained results indicate that zinc silicate is the dominant solid phase, which control solubility of initial and added Zn at low concentration with mineral carrier. Zinc oxide and zinc carbonate became the controlling phase at all studied soils with increasing concentration of added zinc sulphate to 80 and 160 $\mu\text{g ml}^{-1}$. Solid phases formed with Zn-EDTA were at or over zinc oxide and zinc carbonate lines in all the studied soil at all concentration of addition.