



Effect of Heavy Metals in Oxisol amended with sewage sludge

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Sewage sludge production is a great world problem, but its destination as soil conditioner or fertilizer, when possible, may minimize the environmental impact and management costs (Melo et al., 2002). The objective of this work was to evaluate the effect of Cu, Mn, Zn, Cr, Pb and Ni in Typic Haplorthox amended with sewage sludge for eight consecutive years. The experimental design was randomized blocks with four treatment (rates of sewage sludge) and five replications. In the first year the treatments were T1 = control (no sewage sludge and no chemical fertilization), T2 = 2.5 t ha⁻¹ sewage sludge, T3 = 6.0 t ha⁻¹ sewage sludge and T4 = 20.0 t ha⁻¹ sewage sludge (dry basis). From the fourth year, the dose 2.5 t ha⁻¹ sewage sludge was replaced by 20.0 t ha⁻¹ in order to try promoting plant toxicity, so that the accumulated rates of sewage sludge in the eighth year of experimentation were 0, 40, 80 and 107.5 t ha⁻¹. During seventh years the test plant was corn (*Zea mays* L.) and in the eighth year the test plant was *Crotalaria juncea* L. Soil samples (0-0.20 m) were collected 60 days after sowing; 12 single samples in the useful area of each plot (6 on the sowing furrow and 6 between sowing lines). The amended sewage sludge not promotes increased in Mn and Cr. Cu and Ni showed same behavior in soil. The dose 10 t ha⁻¹ (80) promote increased in Pb when compare with control treatment, but not differed 5t ha⁻¹(40) e 20 (107,5) t ha⁻¹treatments. The medium values of Cu, Mn, Zn, Cr, Pb and Ni, in soil, expressed in mg kg⁻¹ TFSA, was respectively 12.3625; 33.9375; 14.7625; 133.575; 8.7575 and 74.7375.

Reference

MELO, W.J., MARQUES, M.O., MELO, V.P. O uso agrícola do bioassólido e as propriedades do solo. TSUTYIA, M.T. et al. (eds.), Bioassólidos na Agricultura. Capítulo 11. São Paulo, ABES/SP, 2002. p.289-363.