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WATER TREATMENT SLUDGE AS POTENTIAL SOIL AMENDMENT FOR NATIVE PLANTS OF THE BRAZILIAN CERRADO

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Abstract

This work evaluates the effect of 5 mixtures of water treatment sludge, soil from the Cerrado region (Brazil) and a commercial substrate on the growth of 4 species of native plants (*Copaifera langsdorffii*, *Astronium fraxinifolium*, *Peltophorum dubium* and *Tabebuia roseo-alba*) from the Brazilian Cerrado. A randomized design was setup with four repetitions and WTS loading rates of 0, 204, 417, 638 and 869 g/kg. Plant sampling for analysis was performed at 30, 60, 90, 120 and 150 days after planting, totalling 400 experiments. The results on morphological parameters and foliar analysis showed good results for the sludge loading rates of 204 and 417 g/kg (18,75 and 37,5% of sludge, respectively), for the *Copaifera langsdorffii*, *Astronium fraxinifolium* and *Tabebuia roseo-alba* growth, which presented the highest values for plant diameter, height and total dry matter weight at the 90th and 120th day of experiments. These loading rates seem to provide suitable buffer conditions and nutrients for plant growth. For sludge loading rates of 638 and 869 g/kg the development of all species was reduced, suggesting that plant growth was probably affected by both the higher concentration of Al and the poor mixture structure due to excess of sludge.

Key words: native plants seedlings, sludge rate, sludge reuse, water treatment sludge

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