Decomposition of *Avicennia marina* on an iron-smelting slag substrate

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Abstract

The present study, conducted near Newcastle, Australia, used a blocked analysis of variance experimental design to compare initial nutrient concentrations and decomposition rates of Avicennia marina (grey mangrove) grown on sand and rock blast furnace slag. There were no significant differences (ANOVA; $P > 0.05$) in mean initial nutrient concentrations of total C, N and P for plants grown on the sand and slag substrates. A litterbag technique was used to estimate decomposition rates. After 360 days of incubation, repeated measures analysis did not identify significant differences between the substrates for the interaction term 'substrate × time' or the term 'substrate' for percentage weight loss or for C, N and P remaining. Avicennia marina on both substrates had nutrient characteristics and decomposition rates comparable to those found in the literature. Results suggest that initial nutrient concentration and decomposition rates are not dramatically influenced by the presence of slag.

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