Geophysical Research Abstracts
Vol. 14, EGU2012-6423, 2012
EGU General Assembly 2012

Oxisol decapitated recovery with green manure and sewage sludge: Effect on growth of Astronium fraxinifolium

S.N. Souto Filho, D.C. Marchini, O.G.de Arruda, R.G. Giácomo, and M.C. Alves

State University of São Paulo, Faculty of Engineering. Ilha Solteira, São Paulo, Brazil. e-mail: sebastiaonsf@gmail.com; dcmarchini@gmail.com; otton.garcia@gmail.com; romuloflorestal@gmail.com; mcalves@agr.feis.unesp.br

Incorrect use of land and large buildings in rural areas are causing changes to it, making them less productive and thus increasing the degraded areas. Techniques aimed at ecological restoration of degraded soils have been investigated. In recovery planning a degraded area, the great challenge to be achieved is the establishment of a A horizon, so that from then on, the process is catalyzed by the biosphere, and there may be other horizons, as the natural conditioning. In this sense the positive changes were investigated in an environment of decapitated Savannah Oxisol, which was removed a layer 8.5 m thick to build a hydroelectric power plant. For recovery, we used a native tree species, green manure, sewage sludge and grass. The studied soil is under human intervention techniques for recovery for seven years. The experimental design was randomized blocks with five treatments and five replications. The treatments were: 1-Control- bare soil (without management), 2-Astronium fraxinifolium Schott; 3-A. fraxinifolium + Canavalia ensiformis; 4- A. fraxinifolium + Raphanus sativus by 2005 was replaced in 2006 by Crotalaria juncea; 5- A. fraxinifolium + Brachiaria decumbens + sewage sludge (60 t ha-1, dry basis). We studied in 2010 and 2011 the development of tree species (stem diameter and plant height), the fresh and dry matter of green manures and B. decumbens. The results were analyzed by performing the variance analysis and Tukey test at 5% probability to compare averages. The rate of plant growth during the periods studied in the treatment with sewage sludge was higher than other treatments, so this is the most appropriate management for the recovery of degraded soil under study.