Geophysical Research Abstracts
Vol. 14, EGU2012-6454, 2012
EGU General Assembly 2012

Epigeal fauna of a degraded soil treated with mineral fertilizer and compound cellulose cultivated of tree species

R.G. Giácomo (1), O.G.de Arruda (1), S.N. Souto Filho (1), M.C. Alves (1), M.G. Pereira (2), and G.C. Frigério (1)

(1) State University of São Paulo, Faculty of Engineering, Ilha Solteira, São Paulo, Brazil. E-mail:romuloflorestal@gmail.com; otton.garcia@gmail.com; sebastiaonsf@gmail.com; mcalves@agr.feis.unesp.br; gervasio@ufrrj.br; giselefrigerio@hotmail.com, (2) Federal Rural University of Rio de Janeiro, Rio de Janeiro, Brazil. E-mail: gervasio@ufrrj.br

The aim of this study was to investigate the behavior of the epigeal fauna in a degraded soil in the recovery process after one year of cultivated with tree species. The experiment was established in February 2010 in Mato Grosso do Sul, Brazil. The experimental design was randomized blocks in split plots with five treatments and four replications. In the main plots, pure cultivation of Eucalyptus urograndis (exotic species - hybrids) and Mabea fistulifera Mart. (native species) and the subplot treatments: Control; D0 - without fertilization; DM - mineral fertilizer according to crop need; DC - with compost manure according to crop need (10 t ha-1); D15 - 15 t ha-1 and D20 - 20 t ha-1 of the compound. In February of the years 2010 and 2011 were installed in the central region of each treatment two traps "pitt fall" which remained for seven days in the field. We calculated Shannon diversity and Pielou evenness indices, and richness of wildlife activity groups. The results were analyzed by ANOVA and Scott Knott test at 5% significance level. In 2010, the area with M. fistulifera, was captured a total of 2697 organisms distributed mainly in: Hymenoptera with 45.83% of the total collected, Collembola (36.93%), Hemiptera Heteroptera (6.56%). In the area with E. urograndis, 1938 organisms were captured, being 50.67% of the order Hymenoptera, Collembola 26.83%, 7.59% Hemiptera Heteroptera. It was found that there was no significant difference between treatments and between species for all variables. Collected in 2011 were 4970 organisms in 56.22% of the order Hymenoptera, Collembola 18.49% and 7.12% beetle in the area of M. fistulifera. In the area of E. urograndis were 4200 organisms, 55.29% (Hymenoptera), 23.79% (Collembola) and 5.86% (Coleoptera). It appears that the activity values and richness of the fauna groups were significantly higher in treatments with organic fertilization in both cultive. It is concluded that after one year there was a variation of the dominant groups and an increase in the activity and the orders number epigeal fauna in the treatments with application of organic compost.