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390-36 Biological Quality of the Soil Seasonally Evaluated in Different Land Uses in Santa Catarina, Southern Brazil.

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Wednesday, October 24, 2012
Duke Energy Convention Center, Exhibit Hall AB, Level 1

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Soil quality represents the maintenance of the productivity for plant and the ecosystem. One parameter that reflect soil quality is the biological quality of it. The objective of this study was to evaluate seasonally the biological quality of the soil under different land uses at Santa Catarina state, south of Brazil. For this, six soil samples were collected in four seasons in an area of 400 m^2 at a farm, on six different systems of land use: native pasture (NP), mixed primary Atlantic Rain Forest (PF) and in regeneration (PFR), and reforested *Araucaria angustifolia* (RAF), *Eucalyptus sp.* (REF) and *Pinus taeda* (RPF). The variables: clay, pH, C, P, K, Ca, Mg, Al, cation exchange capacity, microbial biomass carbon (MBC), basal respiration (BR) and metabolic quotients (qCO2) and microbial (qMIC) were determined for each sample. The results were subjected to analysis of variance with repeated measures and Tukey's mean separation test. The results of the MBC, and BR qMIC were influenced by the interaction between land uses and the seasons. The values obtained for qCO2 did not differ significantly for land uses and seasons. The highest MBC value was obtained in PFR during the spring. The highest value of BR was observed in the REF during the fall. The highest qMIC value occurred in RAF in the winter. The MBC, BR, and qCO2 qMIC showed positive correlations with each other. The RB also showed positive correlation with clay, K and C content in the soil. The MBC, BR and qMIC can be used as indicators of soil quality, since they have different sensitivity to land use and seasonal variation.

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