COARSE WOODY DEBRIS IN ATLANTIC FOREST AND CERRADO, SÃO PAULO STATE.

Theme: Impacts of Local and Global Changes on the Atlantic Rain Forest

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The coarse woody debris (CWD) plays an essential role in the nutrient and carbon cycle, accounting for 20 to 40% of C stocks of an ecosystem and is a significant component of the stocks and fluxes of tropical forest carbon cycles in terms of magnitude and vagility. The annual exchange of C between terrestrial ecosystems and atmosphere can reach 15% of global carbon. Tropical landscapes play a key role in the global C cycle due to the large amounts of C stored and to high rates of land-use change. However, there are currently insufficient data from tropical ecosystems to evaluate the factors that control CWD total stocks, annual inputs and rates of turnover. The C turnover is dependent on climatic variability, nutrient availability, altitude and floristic composition. Micrometeorological towers are used to understand the ecosystem dynamics of water, CO_2 and energy, and when accompanied by biometric measurements, provide diagnostics of the contributions from each component to total C flow. The objective of this work was quantify CWD stock and input in order to better understand the C cycle in a Cerrado (Brazilian Savannah) and an Ombrophylous Dense Montane Forest (Brazilian Atlantic Forest) sites, in São Paulo State. Two sampling periods were performed, summer (CWD stock) and winter (CWD input) in 1.4 ha per site. Our preliminary results show interesting patterns: In the summer, 6425 pieces belonging to intermediary decomposition stage (40% biomass decomposed) in the Forest and 3221 pieces belonging to advanced decomposition stage (90% biomass decomposed) in the Cerrado. Surprisingly, in the winter the sampling indicated 2,2 times less CWD in the Forest and 2 times more CDW in the Cerrado. In relation to wood density, the Cerrado revealed higher values than the Forest. The estimated stocks were based in the Van Wagner's method: Forest – 35.2 ton ha^{-1} in the summer and 2.34 ton ha^{-1} in the winter; Cerrado – 98.65 ton ha^{-1} in the summer and 6.3 ton ha^{-1} in the winter. These results probably reflect the difference in the seasonal climate of each site. The Cerrado shows very seasonal climate with wet summer and dry winter while the Forest shows less seasonal precipitation patterns. Therefore, in the Cerrado during the winter, the decomposition is delayed or interrupted, accumulating stocks and at this time the year the stock is also replaced, while in the Forest decomposition occurs all year around act with stock replacement probably in the summer.

Key words: Necromass, Atlantic Forest, Carbon.

Support: CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior). FAPESP (Fundação de Amparo e Apoio a Pesquisa do Estado de São Paulo) - “Carbon Tracker and Water availability: controls of Land Use and Climate” Project.