

## **27.6-P: Isotopic Composition of Soils and Plants in a Gallery Forest of Cerrado Biome: Effect of Topographic Gradient**

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Gallery forests represent 5% of the Cerrado biome (savannas of Central Brazil) but contain 1/3 of its biodiversity. They protect water quality, control soil erosion and are important corridors for the fauna. In Central Brazil, gallery forests are characterized by a high heterogeneity particularly due to topographic variations that determine important variations of the edaphic conditions. In the present study we determine the isotopic composition of carbon and nitrogen in soils and leaves of 15 woody species for the Gallery Forest ecosystems according to variations in the topographic. The experiment was established in a plot of 100 x 100 m in the Gallery Forest of the Córrego Pitoco, in the Reserva Ecológica do IBGE, DF (15°56'41"S and 47°56'07"W). Three sampling lines were established, parallel to the stream and 45 m apart to each other. The lines represent wet community (near the stream), intermediate community and dry community (adjacent to a typical Cerrado area). The foliar  $\delta^{13}\text{C}$  values increased from the wet to the dry community species. Probably because in the drier sites the water stress leads to a decrease in the ratio  $c_i/c_a$  and consequently to a decrease in the foliar  $\delta^{13}\text{C}$  values. The higher  $\delta^{13}\text{C}$  values of the soil organic matter in the dry community can be related to the input of a litter with higher  $\delta^{13}\text{C}$  values or a higher contribution of C4 grasses in the past. The woody species of wet community presented larger values of  $\delta^{15}\text{N}$  and of N in comparison to the dry community species indicating that denitrification is probably higher in the wet communities leaving behind a  $^{15}\text{N}$  enriched organic matter.