



Surviving but not expanding – a large fraction of trees for hyperdominant species do not exhibit annual increase in diameter in a central Amazon forest

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The low growth rates of adult trees in the Central Amazon forests suggest a high competition for resources. This work is showing that adult trees of hyperdominant species spend a long time without expressing xylem production in the DBH (diameter at breast height). A high percentage of trees with zero increments were detected in permanent plots with two precisions level, 1mm and 0.01mm. Zero increments can occur sporadically or for several consecutive years. In years influenced by gaps in the canopy (post-logging), are smaller numbers of trees with zero increment ($p=7.6 \times 10^{-12}$). The number of days without rain throughout the year also affects the occurrence of zero or negative increment in hyperdominant trees ($R^2= 0.70$ e $p= 0.0004$) and by trees community represented by 109 species ($R^2= 0.59$ e $p=0.002$). Ours results demonstrated a cessation of xylem production for many years in the adult trees of the Central Amazon “Terra Firme” Forests. During these periods, trees probably do not form growth ring, increasing the intensity of partial or missing rings throughout the lifetime of trees. Moreover, these results require more attention in the data treatment of the forest inventory and from dendrocronologists to estimate biomass or cut cycle to forest management.