

Physio-morphological growth dynamics of equatorial *Maesopsis eminii* seedlings indicate drought stress vulnerability and resilience

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Climate is changing globally at an unprecedented scale, triggering responses of multiple ecosystems, including forests. Indeed, intensification of weather extremes (e.g. rainfall anomalies expressed as droughts) has emerged as one of the most detrimental facets of climate change. The question as to whether tropical African rainforests will succumb or acclimatize to these extremes is uncertain and requires investigation. Basically, responses are imprinted in the physiology and morphology of trees. Marrying this knowledge with information on species-specific characteristics, niche and response to microclimate enables better understanding of their adaptability and stress tolerance. Undoubtedly, drawing a line between pre and onset of these drought-induced transitions is paramount in understanding species-specific dynamics, vulnerability, resilience and early warning signals. Thus, this study, which was carried out in an equatorial field setting in Uganda, was designed to assess the effects of drought stress on the resilience, vulnerability and adaptability of fast-growing light-demanding tropical *Maesopsis eminii* seedlings. Drought treatments were experimentally imposed on nine young trees: three per treatment. Treatments included complete drought induction, daily irrigation and control receiving water only during rain events. Parameters monitored were: stem diameter fluctuations and growth, sap flow, soil water potential and climate using both mechanical and ocular discernment. Findings show multiple time lag responses with drought stress strongly correlated to growth and relative sap flow dynamics. Furthermore, growth was dynamic dependent on climate, capacitance, seedling size and demand, soil moisture, drought stress duration and intensity, and synergy or antagonism modification by other stresses (Passioura 2002, Chaves et al. 2009).



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