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## GROWTH RESPONSE OF *EUCALYPTUS GRANDIS* TO MOISTURE IS ATTENUATED BY UNFAVOURABLE NUTRIENT CONDITIONS

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### ABSTRACT

Montane forests of the Bamenda Highlands are threatened by changes in climatic and environmental conditions. To investigate the combined effect of moisture and nutrient availability on the growth of *Eucalyptus grandis* Hill ex Maiden, seedlings were raised under three moisture levels (low [20-30%], intermediate [45-55%], high [70-80%] FWC) and three nutrient regimes (low [10/4/6], intermediate [100/40/60], high [200/80/120] ppm NPK) for three months. The intermediate moisture treatment increased height, the biomass of plant fractions, and total biomass while reducing root mass ratio and root: shoot. Height, number of leaves, the biomass of plant fractions, total biomass, and stem mass ratio were augmented by the intermediate nutrient treatment that resulted in a decline in leaf mass ratio, root mass ratio, and root: shoot. There were significant moisture × nutrient interactions indicating that the effect of the intermediate moisture treatment on height was limited to the intermediate nutrient regime. As for the number of leaves, the decline from the intermediate to the other two nutrient levels was 25% at the low as opposed to 40.3% and 51.9% at the intermediate and high moisture levels, respectively. The findings suggest that nutrient content should be taken into account when designing strategies for adaptation of the species to variability in moisture conditions.



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