
**ECOPHYSIOLOGY OF TWO LIANA SPECIES *Calamus ovoideus*
AND *Coscinium fenestratum* UNDER DIFFERENT CANOPY
REMOVAL TREATMENTS IN A *Pinus* ENRICHMENT TRIAL IN THE
BUFFER ZONE OF SINHARAJA MAB RESERVE, SRI LANKA**

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Calamus ovoideus Thw. and *Coscinium fenestratum* Colbr. are naturally growing economically important liana species, around the Sinharaja MAB reserve, Sri Lanka. Growth performance and physiological attributes of these species were examined using plants established in 1991 under three different canopy removal treatments in a *Pinus caribaea* plantation in the buffer zone of Sinharaja forest. They were 3 pine rows and 1 pine row removed, 3 pine rows under planting and the *Pinus* underplanting control where the initial light intensities were 22, 10, 5 and 3 mol/m²/day respectively.

The results showed that height after 8 years and the annual height increments were significantly higher among the three canopy removal treatments compared to that in the closed canopy control for both species. In *C. ovoideus* greatest height was in the three-pine rows removal treatment and least in the closed canopy under planting. In contrast, *C. fenestratum* showed no significant height difference among the three canopy removal treatments compared to the control. The mean root collar diameter after 8 years and its increments in *C. fenestratum* were significantly higher in the canopy removal treatments compared to that of the control. In the physiological studies, both species showed significant differences in their net photosynthetic rate and stomatal conductance when grown under different light regimes. The higher photosynthetic rate of *C. ovoideus* was in the one pine removed treatment and in *C. fenestratum* it was in the three pine rows removed treatment.

After 8 years of establishment, for both study species the three and one pine rows removed and three pine rows underplanting treatment were better than the *Pinus* underplanting (closed understorey) treatment. This study revealed that these liana species could be successfully introduced to the monoculture *Pinus caribaea* plantations in the lowland wet zone of Sri Lanka.