

## Seedling growth of five species (Clusiaceae) under different light intensities in a Sri Lankan rain forest

In this study performance of seedlings of *Mesua ferrea* L., *M.nagassarium* (Brum.f.) Kosterm., *Calophyllum bracteatum* Thw., *C. trapezifolium* Thw., *Garcinia hermonii* Kosterm. were investigated. Each species were grown in twelve different replicated shade house treatments varying in PPFD (photosynthetic photon flux density; full sun-1200  $\mu\text{mol m}^{-2} \text{s}^{-1}$ , partial sun-800  $\mu\text{mol m}^{-2} \text{s}^{-1}$ , partial shade - 350  $\mu\text{mol m}^{-2} \text{s}^{-1}$ , shade - 50  $\mu\text{mol m}^{-2} \text{s}^{-1}$ ) representing the PPFD found in the Sinharaja rain forest of south - west, Sri Lanka. Experiment was designed to monitor growth of planted seedlings for two years. At the end of two years height increment was calculated and destructive samples taken to measure dry mass gain of root, stem and leaves. Comparisons were made on growth performance of seedlings planted in different light environments.

Results clearly demonstrated that all species attained their maximum height growth in the partial shade treatment. All species did best in partial sun for dry mass gain and root collar diameter (except *C. bracteatum*). The highest leaf mass ratio was in low light environments and the opposite occurred for root mass ratio.

Results suggest that height is a better competitive indicator for poor light than root collar and dry mass gain -which are both indicators of structural bulk. All species allocated more resources to leaves for light capture in poor light conditions, and in full sun light conditions all species allocated more to roots.