

## **Measurement of light quantity and air temperature variation within Sinharaja rain forest**

The amount of light quantity in a canopy gap is strongly dependent on the size, location and aspect of the canopy gap. Larger the gap, the amount of light quantity that may reach in the forest floor will be higher. For this reason different size of gaps may have different microclimates.

Objective of this study was to determine the variations of light quantity and air temperature in canopy gaps and forest understories of three different topographic positions, valley, midslope and ridgetop within the Sinharaja rain forest.

The largest amount of photosynthetic photon flux density (PPFD) 29.9 mol/m<sup>2</sup>/day was recorded in the ridgetop and the lowest PPFD 12.3 mol/m<sup>2</sup>/day was recorded in the centre of valley site. The centres of the ridgetop gaps were exposed for a long duration of full sun due to its aspect and the centre of valley site gaps were exposed for a shorter duration of full sun. The respective PPFD of full sun were 75% and 32.6%. The PPFD of the full sun. On a sunny day the light quantities received valley, midslope, and ridgetop forest understories were between 0.60 – 2.50 mol/m<sup>2</sup>/day, 0.63 – 1.90 mol/m<sup>2</sup>/day and 0.35 -2.00 mol/m<sup>2</sup>/day, respectively. IN the forest understorey the effect of the dynamics of light is mainly due to the contribution of sun flecks.

Diurnal temperature range was wider in the centre of gaps than adjacent forest understories. On sunny days the highest temperature observed was 29 °C and it the gap centre of ridgetop. The lowest temperature observed 26 °C was in the centre of the valley site.