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Leaf structure of a seedling is an important indicator of the level of light and drought tolerance of species. Shade leaves are larger and thinner compared to sun leaves. Light – demanding species have winder anatomical plasticity than shade – tolerant ones. Our study examined Myrtaceae to different combinations of light and soil nutrients.
These species are usually found in the canopy/ sub canopy in lowland rain forests.

Six combinations of radiance and spectral quality were used for this investigation. In each light treatment seedlings were fertilized with phosphorus, potassium and / or magnesium. One set of seedlings without addition of nutrients was used as the control. Seedlings of *S. firmum, S. makul, S. operculatum, S. rubicundum* were grown within shelters each representing a different light level. At the end of one and half years, leaves were sampled from each species in each soil nutrient combination. Subsequently, leaf blade thickness, stomatal frequency, and thickness of upper and lower epidermal and palisade mesophyll cell layers were measured.

Analysis of variance (ANOVA) was performed on each measure. Analysis tested for differences and interactions among species, light and nutrient treatments. In general, leaf dimensions and cell layers of all species increased with increased with increase in amount of light except for S. rubicundum, in which leaf blade thickness, and palisade cell depth were greatest in the light treatment similar to that of the shelters simulating small (200 m^2) and larger (400 m^2) forest openings, *S. makul* exhibited double rows of cells within the palisade mesophyll and lower epidermal layers while *S. furmum* exhibited double rows of cells only within the palisade mesophyll.

Greatest densities of stomta were measured for S. operculatum followed in declining order by *S. makul, S. Firmum* and *S. rubicundum*. The nutrient treatments showed no significant differences in leaf anatomy.

The findings suggest that S. rubicundum is more drought and shade tolerant compared to this others, because of its low stomatal frequency and its increase in leaf thickness and palisade cell depth from sun to shade. *S .operculatum* is the least drought tolerant species due to its highest stomatal frequency. S. furmum with the thickest cuticle and leaf blade seems to be more light tolerant. *S. makul* is moderate in light and drought tolerance.