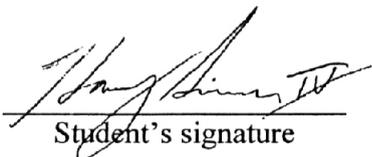


Harry Graybill Simmons IV 2008: Light Acclimatization Ability of Some Species of *Bambuseae*. Master of Science (Tropical Agriculture), Major Field: Tropical Agriculture, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Surawit Wannakrairoj, Ph.D. 102 pages.

Light acclimatization ability of the *Bambuseae* tribe was evaluated for possible indoor use. Twenty greenhouse grown accessions from the *Bambusa*, *Cephalostachyum*, *Dendrocalamus*, *Gigantochloa*, *Schizostachyum*, *Thyrsostachys* and *Vietnamosasa* genera were investigated. *Bambusa nana*, *Bambusa vulgaris* 'Wamin,' *Thyrsostachys siamensis* and *Vietnamosasa ciliata* had the highest average quality grade. Nineteen accessions were then subjected to 10% sunlight levels for 6 weeks whereupon plant health was evaluated using SPAD Chlorophyll Meter. SPAD readings showed an increase in chlorophyll when grown under 10% sunlight for *V. ciliata* and *B. vulgaris* 'Wamin.' They were the only species with high average quality grades to show this increase. A light response curve of *B. vulgaris* 'Wamin' leaves showed a light saturation point at levels $>1000 \mu\text{mol m}^{-2} \text{s}^{-1}$, where P_{max} equaled an average $9.31 \mu\text{mol CO}_2 \text{m}^{-2} \text{s}^{-1}$. Regression analysis indicated a light compensation point of a very low $17.7 \mu\text{mol m}^{-2} \text{s}^{-1}$. When drenched with 1000 ml per pot of 225 and 450 ppm paclobutrazol, *B. vulgaris* 'Wamin' showed no change in chlorophyll or P_{max} . At higher concentrations of 1,800; 3,600 and 10,000 ppm paclobutrazol, increases in chlorophyll were recorded while P_{max} was significantly reduced. *B. nana*, *B. vulgaris* 'Wamin,' *T. siamensis* and *V. ciliata* were placed in 10, 35, 50 or 100% light levels for 6 weeks before being evaluated for changes in chlorophyll and P_{max} . Chlorophyll and P_{max} in *V. ciliata* were inversely related to light levels while chlorophyll and P_{max} in *B. nana* and *T. siamensis* increased with light levels. *B. vulgaris* 'Wamin' had mixed results. *B. vulgaris* 'Wamin' treated with 0, 225 and 450 ppm paclobutrazol and exposed to 10% light for 6 weeks showed no statistically significant differences in chlorophyll levels.


Student's signature


Thesis Advisor's signature

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