

## IN VITRO REGENERATION ENHANCES THE PROPAGATION POTENTIAL OF THE NEOTROPICAL GIANT BAMBOO, GUADUA ANGUSTIFOLIA, A POSSIBLE PERENNIAL GRASS BIOFUEL CROP.

*Guadua angustifolia* is a tropical American bamboo known for its rapid growth and abundant production of woody culms. This vigorous growing grass is considered the third largest bamboo in the world and has been observed to grow up to 21cm a day and produce multiple culms that can reach a maximum height of 30 meters. Previous studies conducted in the bamboos native habitat have estimated a mean number of standing culms per hectare of 6,940 with an oven-dry biomass of 311 ton/ha. This extensive amount of biomass has raised interest in the use of *Guadua* as a feedstock for the cellulosic biofuel industry. However, the establishment of successful bamboo plantations has been hampered by the lack of viable seed due to irregular flowering cycles and poor seed quality. This limitation poses a major problem for the development of *Guadua* as an energy crop by impeding the rapid multiplication of plant propagules, which are required for the establishment of breeding and research trials and ultimately for large-scale commercialization. Micropropagation constitutes a feasible alternative to traditional techniques utilized for the production of viable planting material. We report here the findings of method comparisons for the in vitro propagation of *Guadua angustifolia* through nodal explant proliferation, lateral culm cuttings, and the traditional chusquines method. Comparative results including multiplication rate, rooting, and acclimatization will be discussed.