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## OPTIMIZING THE SEED GERMINATION OF *GARCINIA MANGOSTANA* L. THROUGH PRIMING TREATMENTS

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*Garcinia mangostana* L., commonly known as mangosteen, has recalcitrant seeds that remain dormant unless exposed to optimal environmental conditions. In various crops, seed priming treatments are known to enhance seed germination, and alter the seed's metabolic activity before germination. The study aimed to optimize the germination of *G. mangostana* seeds through different priming treatments, namely, soaking the seeds in H<sub>2</sub>O, H<sub>2</sub>O<sub>2</sub> and acid scarification with HNO<sub>3</sub>. The effectiveness of the priming treatments in inducing seed germination was compared. The lipid and carbohydrate components of the seeds that had undergone priming were determined. Mangosteen seeds were subjected to three different methods of seed priming, namely soaking seeds in distilled water, H<sub>2</sub>O<sub>2</sub> acid scarification with HNO<sub>3</sub> before germinating in the dark for seven days. The germination percentage, mean germination time, and germination rate were measured every day. After 7 days of germination, total lipids and total carbohydrates in ungerminated and germinated seeds were quantified using modified Folch method, and Dubois assay, respectively. The results of seed germination showed that soaking the seeds in 0.5% H<sub>2</sub>O<sub>2</sub> was the most favourable among all the priming treatments based on the values of measured germination parameters. A significant difference between the mean % germination of seeds was observed, while there was no significant difference between the mean germination rates and mean germination time of seeds between treatments. Increasing concentrations of H<sub>2</sub>O<sub>2</sub> and HNO<sub>3</sub> reduced the lipid content of seeds. The carbohydrate content of the germinated seeds primed with distilled water and increasing concentrations of H<sub>2</sub>O<sub>2</sub> decreased, while seeds primed with increasing concentrations of HNO<sub>3</sub> had increasing carbohydrate content. Therefore, the concentrations of H<sub>2</sub>O<sub>2</sub> and HNO<sub>3</sub> in the priming treatments greatly affect the lipid and carbohydrate contents of the seeds. Results of this study serve as a significant contribution to the improved propagation of *G. mangostana* L., an economically valuable species.

## BIOGRAPHY

Puzon Juliana Janet M is a botany professor in the Institute of Biology, College of Science, University of the Philippines, Diliman, Quezon City. She teaches botany subjects and heads the Plant Physiology Research Laboratory in this institute. Her current research interests include plant stress physiology, phytotechnologies, bioactive secondary metabolites, and physico-chemical and phytohormonal control of seed germination.

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