EVALUATING BIO EFFICACY OF AQUEOUS SOUTION OF *Michelia champaca* SEEDS IN CONTROLLING COMMON WEEDS IN AGRICULTURAL LANDS

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by

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ABSTRACT

The use of herbicides is the commonest practice for controlling weeds in tea land. However, the use of herbicides is becoming restricted in Sri Lanka, due to the hazardous effects on human and environment. Therefore, it is high time for contemplating on cultural, biological methods and use of botanicals etc. Some chemical compounds with allelopathic potentials in some plants cause to kill or inhibit the growth of several weeds. There may be some allelopatic compounds in seeds of *Michelia champaca* L. Seeds, locally known as 'Ginisapu'. Hence, a study was undertaken to evaluate the bio efficacy of different concentrations of aqueous solution of *M. champaca* seeds and to study the effect of various additives to minimize of adhesiveness of the aqueous solution. Seeds were thoroughly blended with distilled water by using blender and supernatant was thoroughly filtered. Additives such as Coconut oil, Kerosene oil and Maltodextrin were tested to minimize the adhesiveness of solution against centrifuging. Each aqueous solution incorporated with an additive and centrifuged solution was sprayed to the field where there are many tender weeds. A bioassay was also done for testing phytotoxic effects of original and centrifuged solution on plant growth. Finally, field application was done to evaluate the bio efficacy of 30% and 40% of aqueous solutions which were centrifuged. Visual injury symptoms in the weed were observed and scored in 1, 3 and 5 days after application (DAA). Partially and totally dead plant percentages were counted at 7, 14, and 21 DAA. Dry weight of viable weeds was measured at 21 DAA. Results showed that the better performance in controlling weeds was shown by the centrifuged solution after removing adhesiveness. Germination percentage and root length of Radish seedling were zero with 60% and 80% aqueous solutions and both were slightly lower with 20% and 40% solution compare with the control. 51.6% and 57.5% dead plants were recorded with 30% and 40% centrifuged aqueous solution of *M. Champaca* seeds at 21 DAA, respectively. Therefore, aqueous solution of *Michelia champaca* L. Seeds are found to be having some weed controlling ability, particularly some of the tender and succulent broad leaf weeds. Hence, there is a potential the use it as a Botanical with further development.

Key word: *Michelia champaca,* Seeds, Allelopathic, Adhesiveness, Botanical