Insights in aquaculture and biotechnology

Plant growth inhibitors in velvet bean (*Mucuna cochinchinensis*) and their effects on weedy rice (*Oryza sativa* L.)

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Abstract: The experiment was conducted at the Toxicology laboratory, Faculty of Agriculture, University Putra Malaysia, Serdang, Malaysia. Allelopathic potential of aqueous methanol and water extracts of M. cochinchinensis leaves, seed and root was investigated on seed germination and seedling growth of weedy rice (Oryza sativa); and biotest crop specie: lettuce (Lactuca sativa). The treatments consisted of five concentrations (100, 75, 50, 25, 0 ppm); plant parts (leaves, seed, root) and extraction solvents (methanol, water) were replicated three times and arranged as a completely randomized block (CRD) design. Germination and hypocotyl growth of all test plant species were inhibited at concentrations (100, 75, 50 and 25 ppm). Inhibitory activity was dependent on the extraction solvents and extract concentrations as reported that methanol and higher extract concentration had the stronger inhibitory activity. The mean EC50 values of M. cochinchinensis leaves, seed and root of methanol extracts in relation to the germination inhibition of O. sativa, 86.06%, 416.32% and 72% respectively, and 30.66% 55.84% and 18.24%, respectively, in L. sativa. Similar trend was observed with the varying concentration of the water extracts.

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14th International Conference on Agriculture and Plant Science June 22-23, 2020

Abstract Citation : A.J. Ibrahim," Plant growth inhibitors in velvet bean (Mucuna cochinchinensis) and their effects on weedy rice (Oryza sativa L.)", AGRI SUMMIT 2020,14th International Conference on Agriculture and Plant Science June 22-23, 2020.