Abstract No: 164 **Earth and Environmental Sciences**

AQUATIC INVASIVE WEEDS *Eichhornia crassipes* AND *Salvinia molesta*: HERBICIDAL PROPERTIES AGAINST *Brassica juncea* AND *Pennisetum polystachion*

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Eichhornia crassipes (Mart.) Solms and *Salvinia molesta* D. Mitch. are considered as the two most troublesome aquatic invasive weeds worldwide. Value addition to these plants via production of eco-friendly plant-based herbicides is a strategy to control their spread. The aim of the present study was to explore the potential of the two weeds as a source for developing plant-based herbicides by initially evaluating their phytotoxic properties against *Brassica juncea* (L.) Czern. (mustard) and the alien invasive weed *Pennisetum polystachion* (L.) Schult. (mission grass). Air-dried *E. crassipes* and *S. molesta* were powdered and each powder was extracted using combinations of dichloromethane (DCM), methanol (MeOH) and water at ambient temperature. The powdered plant material and solvent-dried extracts were tested in four replicates for their effects on seed-germination of *B. juncea* and *P. polystachion* and then on the early growth of seedlings of the surviving seeds, under laboratory conditions. The plant powders showed low to moderate inhibition of seed-germination of *P. polystachion* (< 16%) and *B. juncea* (< 40%). The DCM-MeOH (1:1) plant extracts displayed potent inhibition (90 - 100%) of seed-germination of *P. polystachion* and *B. juncea* having the following IC_{50} values: 665 ± 163 and 2446 ± 160 mg L^{-1} of *S. molesta* extract, respectively; 889 ± 131 and 2576 ± 165 mg L^{-1} of *E. crassipes* extract, respectively. The MeOH-water (1:1) extracts of both plants were less potent. The plant powders and extracts displayed concentration-dependent variable effects on growth parameters-root length, shoot length and biomass-of the developed seedlings of *B. juncea* and *P. polystachion*; growth promotion was observed at low concentrations of the extracts and growth retardation at high concentrations. The extracts of *E. crassipes* and *S. molesta* can inhibit the seed-germination of *B. juncea* and *P. polystachion* indicating their potential as a source for developing plant-based herbicides.

Financial assistance from Sri Lanka Council for Agricultural Research Policy (*Grant No. NARP/16/UP/PGIS/01) is acknowledged.*

Keywords: Aquatic invasive weeds, *Eichhornia crassipes,* Phytotoxicity, *Salvinia molesta*