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ASSESSING THE FERTILIZER EFFECT OF THE INVASIVE SPECIES, *Prosopis juliflora* EXTRACTION ON GROWTH OF COWPEA (*Vigna unguiculata*)

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Abstract

The plant *Prosopis juliflora* is one of the widely spread invasive alien species in the tropical dry zones. It is spreading rapidly in the croplands, rangelands, and forests and mainly near the coastal watersheds. The uncontrolled spread of the plant, there is a need to develop sustainable management strategies that are environmentally friendly and economically viable to bring them under control. The study was to investigate the effects of *P. juliflora* liquid fertilizer (P JL) and biochar made out of *P. juliflora* stem in comparison to commercial fertilizer on the growth of Cowpea (*Vigna unguiculata*). The objectives of the study were to introduce an organic liquid fertilizer and biochar prepared from the invasive species *P. juliflora* and to propose a method of minimizing the expansion of *P. juliflora* in Sri Lankan coastal zone by sustainable management. The experiment was arranged in a three-factor factorial with Completely Randomize Design (CRD) with three replicates. The experiment was conducted at the, Mahailuppallama, sub campus, University of Peradeniya, in August to December 2019. Once in every two weeks 100 ml L-1 and 250 ml L-1 concentration of *P. juliflora* Liquid fertilizer was applied to plants and their growth and development performances was recorded. The study the results confirmed that the Juliflora liquid fertilizer was producing significantly greater positive impacts on plant growth and development parameters such as leaf, stem and root dry weights as well as flower and pod counts in 100 ml L-1 concentration at 8WAP and in 250 ml L-1 concentration at 10WAP compared to other treatments. The plant N content also was greater in Juliflora liquid fertilizer. Thus, *Prosopis juliflora* liquid fertilizer can be proposed and recommended as a good organic liquid fertilizer.

Keywords: Biochar, Invasive Alien Species, Sustainability, Liquid Fertilizer