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Impact of combine use of banana pseudostem sap with inorganic fertilizer on root development, nodulation and dry matter accumulation of cowpea (Vigna unguiculata) in sandy regosol

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This study was aimed to evaluate the impact of foliar spray of nutrient enriched organic fertilizer with inorganic fertilizer on root development, nodulation and dry matter distribution of cowpea in sandy regosol at Crop Farm, Eastern University, Sri Lanka. An experiment was laid out in a Randomized Complete Block Design having five treatments replicated four times. Cowpea variety *Waruni* was used for this study. Treatments were recommended as inorganic fertilizer and different concentration of nutrients enriched sap such as 1%, 3%, 5% and 7% which were prepared by using banana (*Musa acuminate* L.) pseudostem and sprayed with urea, TSP and ½ MOP as basal and recommended topdressing. Data were collected by destructive sampling method. The results revealed that application of banana pseudostem had significant positive impact ($P<0.05$) on root length, dry weight of leaves, stem and roots at 4th, 6th and 10th week after planting and sun-dried seed weight of 100 seeds at 1st, 2nd and 3rd picking compared with recommended fertilizer. Number of nodules was not varied immediate after first application. However, a significant difference ($P<0.05$) was shown after 2nd dose. Present study suggested that among the tested treatments 1% banana pseudostem sap at 3rd, 5th, 7th and 9th week after planting with urea, TSP and ½ MOP as basal and recommended topdressing would be the most suitable combination to enhance root development, nodulation and dry matter accumulation of cowpea in sandy regosol.

Keywords: Banana pseudostem, Dry weights, Nodules, Root length, Seeds