**Effect of alternative organic and inorganic potting mixtures on early growth of black pepper (*Piper nigrum* L) nursery plants**

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**ABSTRACT**

Black pepper (Piper nigrum L.) is the world’s most demanding and the second most valuable spice in Sri Lanka. Qualitative and economical potting mixture is a prerequisite in production of quality black pepper plants. Both cow dung and coir dust in recommended potting mixture (cow dung: top soil: sand: coir dust: 1: 1: 1: 1) and in an alternative potting mixture (Top soil: sand: coir dust in 2: 1: 1 + 1g of Di-ammonium Phosphate (DAP)/pot) are expensive and scarce. Therefore, this experiment was conducted to find out alternatives for both cow dung and coir dust. Coir dust of recommended potting mixture (T1) was replaced by partially burnt paddy husk in T3 whereas decomposed saw dust in T5. Coir dust of alternative potting mixture (T2) was replaced by partially burnt paddy husk in T4 and decomposed saw dust in T6. Two nodal black pepper cuttings were planted in pots and arranged as Randomized Complete Block Design inside a shade (60 %) house for 11 weeks. Plant survival (%), shoot length (cm), intermodal length (cm), number of leaves and roots, Shoot and root dry weights (g), root volume (ml), root length (cm) were recorded. The potting mixture was analyzed for pH, EC, total Nitrogen (%), available P (ppm), exchangeable K (ppm), and organic C (%) in the end of the experiment. Survival percentage of all treatments were more than 97 %. Neither growth parameters of plants nor chemical properties of potting mixtures showed significant differences (P>0.05) among treatments compared to alternative and recommended potting mixtures. It reveals that partially burnt paddy husk and decomposed saw dust are alternatives for coir dust in black pepper nursery mixture. Same time di-ammonium phosphate is also applicable with those alternatives. However, experiment should be repeated and continued for 6 months in order to confirm results.

**Keywords:** *alternative potting mixture, black pepper, diammonium phosphate*