

SPENT MUSHROOM COMPOST AS AN ALTERNATIVE CONSTITUENT FOR THE NURSERY POTTING MIXTURE OF PEPPER

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Spent mushroom compost (SMC) is a waste generated from mushroom cultivation, which can substitute expensive and unavailable constituents in the Department of Export Agriculture (DEA) recommended nursery potting mixture of pepper (*Piper nigrum*). A pot experiment was conducted for pepper variety, *Panniyur 1* at Intercropping and Betel Research Station, Sri Lanka. Six treatments; DEA recommended potting mixture [topsoil, coir dust, sand, and cattle manure in 1:1:1:1 ratio] (T₁), SMC, topsoil, and sand in 1:1:1 ratio (T₂), SMC, topsoil, and partially burnt paddy husk (PBPH) in 1:1:1 ratio (T₃), SMC, topsoil, sand, and PBPH in 1:1:1:1 ratio (T₄), SMC, topsoil, sand, and coir dust in 1:1:1:1 ratio (T₅) and SMC and PBPH in 1:1 ratio (T₆) were tested in a complete randomized design with three replicates. The pH, electrical conductivity, and water holding capacity of the potting mixtures were tested. Growth parameters were recorded in timely intervals. Mean separation was done with the LSD test by using R Studio software. Root lengths at 72 days after planting (DAP) were not significantly ($p>0.05$) different among treatments. Shoot length (14.1 ± 1.05 cm), fresh weight of shoot (2.22 ± 0.37 g), dry weight of shoot (0.23 ± 0.01 g), and number of leaves per plant (2.33 ± 0.17) were significantly higher ($p<0.05$) in the DEA recommendation (T₁) at 72 DAP. Similarly, fresh weight of roots (1.14 ± 0.12 g), and dry weight of roots (0.21 ± 0.06 g) were significantly higher ($p<0.05$) in T₃ at 72 DAP. Among the SMC substituted potting mixtures, pepper plants performed better in T₃, which is comparable to the DEA-recommended potting mixture. The pH of all potting mixtures exceeded the desired range (5.5–6.5) of pepper. In conclusion, SMC is an alternative substitute to the expensive and unavailable constituents in the nursery potting mixture of pepper. Further research is suggested prior to concrete recommendations.

Keywords: Coir dust, Growth, *Piper nigrum*, Sand