

Spore Production and Root Colonization of Arbuscular Mycorrhizal Fungi in Different Media and Levels of Biochar: Their Effect on Growth of *Paspalum notatum*

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Bahiagrass (*Paspalum notatum*) is commonly used in the mass production of arbuscular mycorrhizal fungal inoculants containing infective propagules, mycorrhizal roots and spores, and the growing medium. This study was conducted to determine the best growing medium and biochar level from bamboo (BB) trimmings and sugarcane bagasse (BSB) that promote high mycorrhizal spore count and colonized roots. Two mycorrhizal inoculants, endoROOTS® (Made in USA) and MYKORICH® (Philippines product), were used in this experiment. endoROOTS® consists of nine mycorrhizal species mostly *Glomus* while MYKORICH® consists of 12 species belonging to genera *Glomus*, *Gigaspora*, *Acaulospora*, and *Entrophospora*. Media used were oven sterilized sand (S), sand+vermiculite (SV), sand+coir dust (SCD), and sand+coir dust+vermiculite (SCDV) coded as S, SV, SCD, and SVCD, respectively. The levels of biochar were: 0, 3.75, 7.5, 15, and 30% (w/w). Seedlings were inoculated with the recommended dosages as stated in the label. Inoculation was done during transplanting of 3-wk old pregerminated bahiagrass from seed germination boxes to plastic cups (five seedlings per cup) filled with the different media amended with increasing level of biochar. After 4 mo in the screenhouse, MYKORICH® gave 124 spores per g (spg) in the presence of 7.5% BSB, 176 spg in 7.5% BB, 250 spg in 3.75% BB amended sand, and almost 300 spg in no biochar sand. Ninety percent more spores were produced by MYKORICH® than endoROOTS®. endoROOTS® gave the highest (163 spg inoculant) spore count in no biochar sand. MYKORICH® inoculated plants gave heavier biomass in BB amended sand, SV, and SVCD than in BSB amended counterpart. endoROOTS® produced more root biomass in BSB amended sand, SVCD, and SV media. SCD was not a good medium for mycorrhizal inoculant.

Keywords: mycorrhizal inoculants, mixed inoculant, *Glomus*, *Gigaspora*, *Acaulospora*, *Entrophospora*, bahiagrass