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Effect of host crop on mass propagation of vesicular arbuscular mycorrhizae (*Glomus mosseae*)

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Vesicular arbuscular mycorrhizal (VAM) fungi are a group of obligate plant symbionts that improve plant growth and development of associated higher plants. The potential of VAM for productivity improvement of black pepper (*Piper nigrum*) and cinnamon (*Cinnomomum verum* Presl Syn. *Cinnomomum zeylanicum* Blume) are been exploited. As an initial step, this experiment was carried out with the objectives of finding the appropriate host crop species and time of uprooting the host crop to obtain maximum possible number of spores in the inoculum.

Two hundred and fifty grams of inoculum (consisted of mycorrhizal spores and structures (*Glomus mosseae*) with sorghum roots and moist soil) was incorporated into the sterile soil in each pot. Thus initial spore density values became to 23 brown spores and 6 black spores per 50 gram of the potting media of each pot. Surface sterilized seeds of three host crops each sorghum, maize and finger millet were planted in separate pots. The experimental design was complete randomized design with 12 replicates. Three replicates from each host crop were uprooted at different time intervals i.e. 8, 10 and 12 weeks after planting. Spore density variation of potting media under each host crop was measured using wet sieving technique.

The observations of this study are comparable with spore density observations of similar studies. Two types of spores namely brown and black in colour were observed and observations of stained internal mycorrhizal structures in root pieces confirmed the success of initial inoculation of each species. Mean brown spore density value became 142 (± 98 SD) per 50g of potting media at 12 week after inoculation of each species. Brown spore density values of each species became almost equal towards harvest at 12 week and spore density of finger millet remains above 100 spores per 50gm during three uprooting times. Under local conditions, finger millet can be recommended to use as a host crop for mass propagation of VAM. This crop would give an additional income as a grain harvest also at 12 weeks.

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