

**ARBUSCULAR MYCORRHIZAL ASSOCIATION ON SELECTED EXPORT AGRICULTURAL CROPS AND EFFECTIVE RATE OF *Glomus mosseae* INOCULAM ON COFFEE (*Coffea arabica*) SEEDLINGS**

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The Export Agricultural Crops (EACs) play a major role in export earnings in Sri Lanka. Introduction of bio fertilizer agent such as Arbuscular Mycorrhizae (AM) to EACs will have added advantages. This experiment was carried out to study the natural occurrences of AM with EACs and to find the effect of inoculation of AM *Glomus mosseae* on coffee seedlings at nursery stage. Rhizosphere soils with roots were collected from pepper (*Piper nigrum*), coffee (*Coffea arabica*), cardamom (*Elettaria cardamomum*), cocoa (*Theobroma cacao*) and cinnamon (*Cinnamom verum*) and spore density in soil and infectivity percentage of roots were measured. Five mycorrhizal inoculum levels of *G. mosseae*, 50 g (T<sub>1</sub>), 75 g (T<sub>2</sub>), 100g (T<sub>3</sub>), 125g (T<sub>4</sub>), 150 g (T<sub>5</sub>) and control (T<sub>6</sub>) were incorporated separately to polythene bags (21 cm x 13 cm) filled with sterilized standard potting mixture and one month age coffee seedlings were planted. *Glomus* and *Acaulospora* spores were predominant in rhizosphere soils of all five crops examined. Highest number of AM spores was observed with pepper rhizosphere and infectivity percentage was also highest in pepper followed by coffee. The heaviest infectivity, along with vesicles and significantly highest ( $p < 0.05$ ) phosphorus percentage in plant tissues were observed in T<sub>3</sub> at 5 months after inoculation. The highest root dry weight and volume were also observed in T<sub>3</sub> as compared to other treatments. Shoot fresh weight, shoot dry weight, leaf area and shoot height were significantly higher in all treatments except T<sub>6</sub> at 5 months after inoculation when compared to control. The study revealed that there are natural AM associations with EACs and incorporation of the *G. mosseae* at the rate of 100 g kg<sup>-1</sup> was most suitable to obtain good quality planting material for field planting of coffee.

**Key words:** Arbuscular Mycorrhiza, *Coffea arabica*, Export agricultural crops, *Glomus mosseae*