

Isolation and Identification of Vesicular Arbuscular Mycorrhiza in Maize Plant as Bio Control Agent

N. Varmila^{1*}, G. Mikunthan¹ and S. Sarvanya²

^{1*}*Department of Agriculture Biology, University of Jaffna, Jaffna, Sri Lanka*

²*Department of Botany, University of Peradaniya, Kandy, Sri Lanka*

The raising claim for more environmental and healthy agriculture is a strong intensive to find an alternative strategy to replace the use of mineral fertilizer and pesticides. Vesicular Arbuscular Mycorrhiza (VAM) a main soil microbiota represents a promising tool as a provider of key ecological services symbiotically associated with higher plant roots. It enhances nutrient uptake, tolerant to drought, toxic heavy metal, and nematode infection. Maize as host plant tested for root infection and spore count. This study was undertaken to find the occurrence and distribution of VAM colonization in rhizosphere soil and roots of maize (*Zea mays*). The fungi propagules were observed from root cortex cells by staining with a cotton blue stain. Also, spores of *Glomus*, *Gigaspora*, and *Acaulospora* species were isolated from rhizosphere soil by wet sieving with sucrose centrifuge technique. Sample soil characteristics such as electric conductivity (EC), pH, soil moisture, and texture were analysed. All tested plants are associated with VAM fungi and the number of VAM fungal spores from soils ranged from 09 to 119 per 100g of soil and infection varied from 20% to 93% there were significant differences in VAM colonization between plants sample. Spore number and root infection were negatively correlated in plants indicating that a low level of spore density is associated with high root colonization. In soil properties, EC and sand have a positive correlation whereas clay shows a negative correlation.

Keywords: Vesicular arbuscular mycorrhiza, Isolation, Spores, Morphological identification, Maize