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SPATIAL DISTRIBUTION OF SOIL MICROFLORA IN A FIVE YEAR OLD RUBBER PLANTATION IN TRIPURA

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The distribution pattern of soil microflora was studied in a five year old rubber plantation in Tripura by placing fertilizers at varying soil depths. The fungal, bacterial and mycorrhizal population were found to decrease significantly in deeper soil layers. Horizontal distribution of bacteria showed maximum activity in the region of higher root concentration. The mycorrhizal infection was found higher towards the base of the trees and also away from the site of fertilizer placement.

Key words : Arbuscular mycorrhizae, Fertilizer, *Hevea brasiliensis*, Soil microflora

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INTRODUCTION

Rhizosphere microflora has a profound influence on plant growth as it has an important role in making soil nutrients available to plants. Rate and extent of root colonisation of soil, type of root system, presence of root exudates, *etc.* influence the soil microflora. Cultural practices like type and method of fertilizer application, soil disturbances, *etc.* also influence microbial population in the rhizosphere of cultivated plants. Mycorrhizal association with plant roots favour nutrient uptake. Information on mycorrhizal association in rubber is rather limited (Wastie, 1965; Jayaratnae, 1982; Ikram and Mahmud, 1984). The present study aims at enumerating the rhizosphere microflora associated with *Hevea* and studying their spatial distribution in a rubber plantation in Tripura in relation to the method of fertilizer application.

MATERIALS AND METHODS

Soil and root samples were collected from an experiment laid out in a five year old rubber plantation at Mohanpur, Agartala, and spatial distribution of *Hevea* roots in relation to type and method of placement of fertilizer (Philip *et al.*, 1996) was studied. Soil samples were collected from plots using soil core break method (Escamilla *et al.*, 1991) at 30 cm, 110 cm and 220 cm horizontally from the base of the tree and at depths of 0-18 cm, 18-36 cm and 36-54 cm vertically 30 cm away from the plant base using a 18 cm core with a diameter of 4.25 cm.