MICROFLORA ASSOCIATED WITH PHYLLOPLANE, CAULOPLANE AND RHIZOSPHERE OF TWO POPULAR RUBBER CLONES AT TWO LOCATIONS IN INDIA

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Phylloplane, cauloplane and rhizosphere populations of bacteria, fungi, actinomycetes and yeasts associated with the *Hevea brasiliensis* trees of three age groups (2-3, 5-6 and 10-11 years) and belonging to two popular clones (RRII 105 and PB 260) grown in two locations (Cheruvally and Malankara Estates) in the traditional rubber growing tract of India were evaluated. Bacteria dominated in all the three niches while the population of yeast was the lowest. Rhizosphere harboured the highest and cauloplane the lowest number of microorganisms. There was no significant variation in microflora between the two clones. In general, there was an increase in microbial population with the age of the plantation but with respect to the location there was no general trend. The availability of plant exudates appears to influence the association of microflora on the plant surfaces.

Key words: Age, Cauloplane, Clone, *Hevea brasiliensis*, Microflora, Phylloplane, Rhizosphere.

INTRODUCTION

Enumeration and isolation of beneficial microflora associated with crop plants is an essential pre-requisite for developing them as components in sustainable agriculture. There have been very few attempts at enumeration of microorganisms associated with *Hevea brasiliensis*. These were mainly on rhizosphere microorganisms (Joseph *et al.*, 1988; Kothandaraman *et al.*, 1991; Deka *et al.*, 1992; Jayaratne, 1995; Deka *et al.*, 1998) and a few on phyllosphere microflora (George and Kothandaraman, 1999). Some of the organisms isolated have been evaluated for biological control of *Corticium salmonicolor* (Joseph *et al.*, 1991), *Phellinus noxius* (Jacob *et al.*, 1991; Kothandaraman *et al.*, 1991) and *Phytophthora meadii* (Vanitha *et al.*, 1994) causing diseases on *H. brasiliensis*.

The population of microorganism is likely to vary depending on the plant species, age and environment. The present study aims at enumeration of microorganisms associated with two *H. brasiliensis* clones (RRII 105 and PB 260) in three age groups (2-3, 5-6 and 10-11 years) at two locations, *viz.*, Cheruvally (Pathanamthitta District) and Malankara (Idukki District) Estates in Kerala State, India.

MATERIALS AND METHODS

Leaf, bark and rhizosphere soil samples were collected from the two locations from plantations of the two clones in each of the age groups. The enumeration was carried out during February 2000. For phylloplane microbial studies leaflets collected randomly from four trees were pooled.

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