ROLE OF INJECTION WOUNDS ON BARK ROT DISEASE INCIDENCE IN *HEVEA BRASILIENSIS*

Bark rot or black stripe disease on tapping panel of *Hevea brasiliensis* is caused by species of *Phytophthora*. The characteristic symptom in the case of this disease is rotting of bark followed by formation of vertical black lines in the wood after infection. *Phytophthora meadii, P. palmivora* and *P. nicotianae* var. *parasitica* have been isolated as causative organisms of the disease from the rubber tree in India, *P. meadii* and *P. palmivora* in Sri Lanka and *P. botryosa, P. heveae* and *P. palmivora* in Malaysia. Since so many species are involved, the causal fungus will be referred to as *Phytophthora*, not mentioning the individual nomenclature.

Of late, considerable work is going on in the field of induced disease resistance associated with hypersensitive reactions or necrotic responses. Living plant cells respond to physical injuries. The damaged cells as well as cells adjacent to them die and in the process produce various compounds (Day, 1974). These compounds are regarded simply as secondary plant metabolites or stress metabolites (Cruickshank, 1980). These are potent fungicides and antibiotics (Wheeler, 1975). Phytoalexins are low molecular weight antimicrobial compounds accumulated in plants after exposure to micro-organisms (Ouchi, 1983). Previously the antimicrobial stress metabolites were believed to be formed when living cells are invaded by a parasite (Muller and Borger, 1940), but later it has been proved that chemicals and wounding can do the same as well with varying efficiency and thus replace primary parasites as triggers of resistance (Van der Plank, 1975). Phytoalexins and phytostilbenes are known groups of fungitoxic stress metabolites produced in quantity in plant tissues as a result of injury. It has been reported that the phytoalexin elicitors such as physical damage not only induce localised accumulation of phytoalexins but also travel through tissues amplifying resistance reactions or may even be translocated to far distant parts of the plants which would cause a systemic resistance (Ouchi, 1983). This paper presents the results of an experiment to study the effect of streptomycin pressure injection on bark rot disease incidence in *Hevea brasiliensis* which interestingly culminated in the finding that irrespective of the treatment, wounding-induced callusing has reduced bark rot disease development to a great extent.

A statistically laid out field experiment was conducted at the RRII's Central Experiment Station at Chethackal, Ranni, situated 50 km from Kottayam in Kerala State. Four year old trees of RRII 118 were selected for the experiment. Randomised block design with four treatments and five replications was adopted. The details are presented in Table 1.

Volume injected per tree was one litre and all injections were carried out using the pressure injection equipment fabricated at the RRII and in the manner described by Thankamma et al. (1979). Injection was done through two opposite holes made on the trees at a height of one metre from the ground. Bordeaux mixture was sprayed at the rate of four litres per tree using a Rocker sprayer. Injection was done during July-