

FIELD EVALUATION OF FUNGICIDES TO IDENTIFY A SUBSTITUTE FOR ORGANO-MERCURIALS IN THE CONTROL OF BLACK STRIPE DISEASE OF RUBBER IN INDIA

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Thomson T. Edathil, Sabu P. Idicula and Kuruvilla, Jacob. C. (1988). Field evaluation of fungicides to identify a substitute for organo-mercurials in the control of black stripe disease of rubber in India. Indian J. Nat. Rubb. Res. 1(1): 42-47

Investigations were carried out to identify an effective and alternative fungicide for organo-mercurial fungicides in the control of black stripe disease of rubber. The high human toxicity of organo-mercurial fungicides and their possible withdrawal from the market necessitate the search for a substitute. Both captan (Toltal) and mancozeb (Dithane M-45) were found to be effective for the control of this disease. On economic consideration, Dithane M - 45 at 0.75% ai appears better.

Key words — Bark rot incidence, Disease index, Feeler trial, Fungicides, Human toxicity, *Phytophthora* spp., Plasticity, Plasticity retention index.

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INTRODUCTION

Black stripe or bark rot is a wet weather disease infecting the tapping panel region of mature rubber trees during the South west monsoon months of June-August. The causal fungus is *Phytophthora* spp. The pathogen makes its entry into the host tissues through the tapping cut when the weather conditions are favourable for infection (Peries, 1975). In India, the intensity of incidence of the disease is less when compared to that in other rubber growing countries of South East Asia. This is mostly because many planters discontinue tapping during the South west monsoon period. But in places where tapping is continued by providing rainguards, the disease incidence is observed to be very high (Ramakrishnan and Radhakrishna Pillay, 1963). If left unprotected the disease can

spread both above and below the tapping cut. From Malaysia it has been reported that the disease extended to about 15 cm below the tapping cut and 2-5 cm upwards in the regenerating bark. In Sri Lanka, where the monsoon rains are heavier and more persistent, the disease has often been observed to extend upwards to the first branches to a height of 2 m or more and down to ground level (Peries, 1975). For controlling the disease, regular applications of panel protectants are necessary. At present prophylactic panel applications of organo-mercurial fungicides like Arctan, Emisan and Agallol are in practice. The use of mercurial fungicides, however, should be discouraged due to their high human toxicity (Brady, 1967; Schroeder, 1971). Although copper fungicides can effectively control disease caused by *Phytophthora* spp., they can contaminate the latex resulting in deterioration of its quality