A Survey of Leaf Surface Microflora of Rubber and Their Antagonistic Activity

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Abstract

Bacterial and fungal species associated with the leaf surface of various rubber clones were isolated. Screening for the inhibitory action against three pathogens of rubber *Colletotrichum, Cyllindrocladium and Corynespora* was done. Identification of the bacterial isolates was carried out. All the bacterial isolates were Gram negative and belong to the following genera *Pseudomonas, Erwinia, Alkaligenes, Enterobacteria,* and *Chromobacterium*. Four bacterial isolates (52 W_2, 52 Y, 52 P.W, 52 S.R) which showed highest activity against all three pathogens tested were selected for the identification of the mode of action and compound involved in the antibiosis. Freeze dried culture filtrates of above bacterial strains were obtained and were screened for inhibitory action. Percentage growth inhibition of the pathogenic fungi was measured by adding various concentrations of freeze dried culture filtrates to the growth media of test pathogens. A 52% reduction of the growth of the *Corynespora* colony was obtained by adding 0.5% $^{w}/_{w}$ concentration of the crude of 52 W_2 when compared to the control. The compounds involved in the antibiosis were tried to separate and identify using solvent extraction, TLC and NMR. The active compounds seem to be very polar. Due to the practical limitations it was not possible to identify the active compounds completely.