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CHEMICAL MIXTURES FOR RUBBER WOOD TREATMENT BY DIFFUSION PROCESS

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Experiments were conducted to find out an effective combination of chemicals for preservation of rubber wood by diffusion process. The preservatives tried included solutions of inorganic chemicals, organic chemicals and their various combinations. The results indicated that the combinations of borax, boric acid and sodium pentachlorophenate (NaPCP), phosphamidon and oxycarboxin, monocrotophos and oxycarboxin were the best against the sap stain fungus *Botryodiplodia theobromae*. The growth of *Fusarium* sp., *Aspergillus* sp., *Trichoderma* sp., and *Penicillium sp.* was significantly less in most of the treatments. Insect borers were effectively controlled by borax + boric acid + NaPCP, dimethoate + oxycarboxin, dimethoate + tridemorph and copper sulphate + borax .

Sodium pentachlorophenate proved to be an important adjuvant for the diffusion treatment of rubber wood though a few combinations devoid of NaPCP also showed encouraging results. The chemical combination of dimethoate and oxycarboxin can be considered an organic substitute in view of the toxicity of PCP compounds. Copper sulphate and its combinations with other chemicals gave good protection against insect borers but were effective against fungi only if NaPCP was added.

Key words: *Hevea brasiliensis*, Wood preservation, Diffusion, Insect borers, Sapstain fungus.

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INTRODUCTION

The rubber tree, *Hevea brasiliensis*, is cultivated for the extraction of latex. On termination of exploitation for latex, the rubber trees are valued as quality timber. The area under rubber during the year 1994-95 was 515572 hectares (Rubber Board, 1996) . On an average 6000 hectares are replanted each year. Joseph and George (1994) reported that 1.235 million m^3 of rubber wood was available for industrial uses during 1993-94, out of which 0.741 million m^3 was stem wood and was used for packing cases, safety matches, plywood, treated wood for furniture, etc. The rest constituted branch wood, mostly used for cottage industries and household firewood requirements .

Rubber wood is infested by several borer beetles viz., *Heterobostrychus aequalis, Sinoxylon conigerum* (Tisseverasinghe, 1970), *Minthea rugicollis* (Norhara, 1981), *Sinoxylon anale, Platipus latifinis, P. solidus; Xyleborus similis* (Mathew, 1987) and *X. perforans* (Jose *et al.*, 1989). The fungi found associated with the biodeterioration of rubber wood are *Botryodiplodia theobromae* (sap/blue stain fungus), *Aspergillus* sp., *Penicillium* sp. (Ali *et al.*, 1980), *Trichoderma* sp. (Hong, 1981) and *Fusarium* sp. (Jose, *et al.*, 1989).