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DEVELOPMENT OF EPICUTICULAR WAX AND CUTICULAR ORNAMENTATION IN *HEVEA BRASILIENSIS* (WILLD. EX ADR. DE JUSS.) MUELL. ARG.

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The general pattern and phenology of epicuticular wax in *Hevea brasiliensis* (Willd. ex Adr. de Juss.) Muell. Arg. was studied with the aid of scanning electron microscope. The developmental stages of wax formation in relation to the phenology of leaf in *Hevea* and general pattern of epicuticular wax on the leaf surface, petiole, petiolule, tender stem and fruit wall have been described. Functional importance and possible utility of the wax pattern in disease management and clone identification in *Hevea* have been discussed. The role of epidermal structure on organographic specificity to *Phytophthora* leaf fall disease in *Hevea* has been confirmed on the basis of wax pattern.

Key words Cuticular ornamentation, Epicuticular wax, Epidermis, *Hevea brasiliensis*.

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INTRODUCTION

Surface ornamentation of cuticle mainly consists of striae which are ridges or folds of epicuticular waxes. Deposition of epicuticular wax is related to reduced rate of epicuticular transpiration (Clark and Levitt, 1956), resistance to leaf diseases and application of insecticides and fungicides on plants. The architecture of wax is important in the ability of the plant to reduce cuticular transpiration (Chambers and Possingham, 1963). In *Hevea* the leaves are compound and dorsiventral, having reticulate ornamentation on the abaxial side (Rao, 1963). In the present study the developmental stages of wax formation on the abaxial surface of leaflets, organographic variability in cuticular architecture and possible functional significance are discussed.

MATERIALS AND METHODS

Basal leaves representing different growth stages from bud emergence stage to hardened stage, as arbitrarily classified (Anon, 1976), as well as fully hardened leaves were collected. The samples thus covered bud-break stage (bud emerged and grown to a length of just two cm), leaflet stage (the leaves of the terminal flush still expanding and copper to reddish in colour), pendant stage (the leaves almost completely expanded and green but still limp), hardened stage (the leaves of the terminal flush fully expanded and just hardened, lamina in proper position) and fully hardened stage.

Fresh leaf pieces from the central position of the middle leaflet and samples from petiole, petiolule, tender green stem and