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DETECTION OF PATHOGENESIS RELATED PROTEINS IN *HEVEA BRASILIENSIS* INFECTED BY *PHYTOPHTHORA MEADII*

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Eleven pathogenesis related proteins (PR-proteins) were detected in rubber (*Hevea brasiliensis*) tree infected with *Phytophthora meadii*. New anionic peroxidase (PR-9 proteins) appeared in the tolerant interaction. Induction of PR-proteins is correlated with resistant interactions between *H. brasiliensis* and *P. meadii*. Two proteins corresponding to molecular weights 29kD and 33kD were prominent in expression in the tolerant plants 24 h after inoculation with the fungal pathogen. *In vacua* infiltration studies revealed the presence of similar proteins in the intercellular fluids, obtained from leaves. New anionic peroxidase bands appeared in the resistant plants during interaction with the pathogen. Similar changes in the protein induction were observed on treatment with salicylic acid. The results indicate an induction of tolerance in tolerant *Hevea* plants when challenged with *P. meadii*.

Key words : Anionic peroxidase, *Hevea brasiliensis*, *Phytophthora meadii*, PR proteins.

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INTRODUCTION

Plants respond to pathogen attack by synthesizing a set of proteins termed pathogenesis related (PR) proteins (Antoniw *et al.*, 1980). Van Loon *et al.* (1994) defined PR-proteins as the proteins, which are newly expressed upon infection. The appearance of PR-proteins in uninfected control tissues confirmed by western blot analysis as well as using cDNA probes (Lawrence *et al.*, 1996), prompted Van Loon (1999) to define them as proteins, which are readily detected in infected tissues but not in uninfected ones. The PR-proteins are induced more in resistant interactions (Van Loon, 1985; 1999). Their involvement in disease resistance has generated more interest among molecular biologists to exploit them for developing disease resistant plants. Several transgenic plants over expressing PR-proteins show increased resistance to pathogens (Vidhyasekaran, 1997; 1998). Rubber tree (*Hevea brasiliensis*) is severely infected by *Phytophthora meadii* and the disease causes heavy yield losses. PR-proteins have been exploited to manage *Phytophthora* disease in other crops like tobacco, potato, *etc.* (Alexander *et al.*, 1993; Liu *et al.*, 1994). No previous reports are available on the detection of PR-proteins induced in *Hevea* during pathogen attack. However, reports are available on the detection of chitinase and β-1, 3-glucanase group of PR-proteins in *Hevea* latex. In this paper an attempt