

DETECTION OF β -1, 3-GLUCANASE ISOFORMS AGAINST CORYNESPORA LEAF DISEASE OF RUBBER (*HEVEA BRASILIENSIS*)

Shaji Philip, Annakutty Joseph, Arun Kumar,
C. Kuruvilla Jacob and R. Kothandaraman

Philip, S., Joseph, A., Kumar, A., Jacob, C.K. and Kothandaraman, R. (2001). Detection of β -1,3-glucanase isoforms against *Corynespora* leaf disease of rubber (*Hevea brasiliensis*). *Indian Journal of Natural Rubber Research*, 14(1) : 1 - 6.

Corynespora cassiicola causing leaf diseases of *Hevea* is considered to be a serious problem in most of the rubber growing countries. Production of a pathogenesis related (PR) protein β -1,3-glucanase upon infection was tested in four clones of *Hevea*. Considerable variability in the β -1,3-glucanase activity of enzyme was observed among different clones during pathogenesis. Increased enzyme activity was found in the tolerant clone (CI 1), while a decrease was observed in the susceptible (RRII 105). Three prominent β -1,3-glucanase isozyme bands were detected by 17.5 per cent PAGE in the tolerant clone.

Key words : *Hevea brasiliensis*, *Corynespora cassiicola*, β -1,3-glucanase.

Shaji Philip (for correspondence), Annakutty Joseph, Arun Kumar, C. Kuruvilla Jacob and R. Kothandaraman, Rubber Research Institute of India, Kottayam - 686 009, Kerala, India (Email : rrii@vsnl.com).

INTRODUCTION

Leaf disease caused by *Corynespora cassiicola* (Berk. & Curt.) Wei. has been reported from various rubber growing countries. Earlier it was considered to be a minor problem confined to rubber nurseries. The first report of *Corynespora cassiicola* on rubber was by Deighton (1936). Later the disease was reported from India (Ramakrishnan and Pillai, 1961), Malaysia (Newsam, 1961), Nigeria (Awoderu, 1969), Indonesia (Situmorang and Budiman, 1984), Brazil (Junqueira *et al.*, 1985), Sri Lanka and Cameroon (Iiyana *et al.*, 1986), Thailand

(Pongthep, 1987), Bangladesh (Rahman, 1988), and Vietnam (Dung and Hoan 1999). Recently severe incidence of this disease on mature trees was reported from Karnataka state in India (Rajalakshmy and Kothandaraman, 1996). Chemical control has been adopted for the control of this disease in the field. The high cost and environmental impact of spraying are the undesirable effects of chemical control. Alternative methods involving biochemical or genetic manipulations of host-pathogen interaction have been found to increase the resistance to fungal pathogens in a number