ITS-RFLP BASED IDENTIFICATION OF *PHYTOPHTHORA MEADII* INFECTING RUBBER TREES

Shaji Philip, Annakutty Joseph, Cina Ann Zachariah, Ginu George, Edwin Prem and C. Kuruvilla Jacob

Rubber Research Institute of India, Kottayam-686 009, Kerala, India

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Abnormal leaf fall caused by *Phytophthora* spp. is a serious disease of rubber *(Hevea brasiliensis)* in the traditional rubber growing regions of India. Twenty-five isolates from different rubber growing regions were subjected to molecular characterization and observed the variation if any. Internal transcribed spacers (ITS) of ribosomal DNA of the isolates were amplified with ITS 4 and ITS 6 primers. The rDNA- RFLP pattern was generated for all the isolates with different restriction enzymes. Among the different restriction enzymes tested, digestion was obtained only with two enzymes *viz. Msp 1* and *Alu 1*. Uniform RFLP pattern generated for all the isolates tested from *H.brasiliensis* belonged to *P.meadii*. The RFLP patterns of generated rDNA of isolates from *H.brasiliensis* were compared with other *Phytophthora* species *viz*. *P.capsici* from pepper and *P.palmivora* from coconut showed variation.

Key words: Abnormal leaf fall disease, *Hevea brasiliensis*, Natural rubber, Oomycetes, *Phytophthora meadii*

Abnormal leaf fall disease caused by *Phytophthora* is considered to be the most destructive disease of rubber *(Hevea brasiliensis*) in India causing an estimated crop loss of 5-49 per cent by different clones (Jacob, 2003). Four species of *Phytophthora viz*. *P.palmivora* (Butler), *P.meadii* (Mc Rae 1918), *P.nicotinae var parasitica* and *P.botryosa* have been reported to cause this disease in India (Thankamma *et al.,* 1968; Edathil and George, 1976; 1980; Edathil *et al.,* 2000). Other species like *P.faberi, P.hevea and P.citrophthora* have also been reported to cause this disease in other countries (Ramakrishnan and Pillai, 1961; Chee, 1969).

Proper identification of causal organism within a short time span is of importance in disease control. The earlier identification of the causal organism of abnormal leaf fall disease have been on the basis of the morphological characters. However, morphological identification may not be accurate for closely related fungi (Waterhouse 1970). Now PCR based molecular tools have been widely used to identify *Phytophthora* species accurately (Duncan *et al.,* 1987; Cook *et al*., 2002). As the DNA sequence are unique for an individual and the variation can help in screening the varieties with in a population. Ribosomal DNA (rDNA) restriction digest

Correspondence: Shaji Philip (Email: shaji@rubberboard.org.in)