Rubber Science, **29**(3): 277-285, 2016 RESEARCH ARTICLE

PATHOGENICITY AND TOXIN PRODUCTION OF *CORYNESPORA CASSIICOLA* ISOLATES CAUSING CORYNESPORA LEAF FALL DISEASE IN *HEVEA BRASILIENSIS*

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Received: 11 April 2016 Accepted: 19 July 2016

Reshma, M., Philip, S., Rose, D., Joseph, A., Prem, E., and Joseph, J. (2016). Pathogenicity and toxin production of *Corynespora cassicoloa* isolates causing *Corynespora* leaf fall disease in *Hevea brasiliensis*. *Rubber Science*, **29**(3): 277-285.

Corynespora cassiicola is an important plant pathogenic *Ascomycete* causing Corynespora leaf fall (CLF) disease in *Hevea brasiliensis*. Phytotoxins produced by pathogens are the key factors in the development of a number of destructive diseases of crop plants. A small glycoprotein named cassiicolin was previously described as an important effector of *C. cassiicola.* The degree of aggressiveness and pathogenicity of seven *C. cassiicola* isolates were attempted in the present study. Aggressiveness of the isolates was studied by two different methods *viz*. the leaf wilt bioassay using crude toxin and spore inoculation in RRII 105 (susceptible clone) and Fx 516 (tolerant clone). *Cas* gene responsible for pathogenicity was detected in the isolates. Variability in the degree of virulence was observed among the *C. cassiicola* isolates. The isolates with no *Cas* gene could nevertheless generate moderate symptoms, suggesting the existence of other yet uncharacterized effectors.

Key words: *Cas* gene, Cassiicolin, *Corynespora cassiicola,* Corynespora leaf fall disease, *Hevea brasiliensis*, Pathogenicity test

INTRODUCTION

Commercially cultivated clones of *Hevea brasiliensis* represent a very narrow genetic base possibly originating from few selected seedlings collected by Henry Wickham in 1876. *H. brasiliensis* being an economic crop its healthy existence is significant to its productivity output (Narayanan and Mydin, 2011). Rubber cultivation is under a constant threat of attack by native as well as exotic pathogenic fungal diseases due to genetic vulnerability of the *Hevea* clones. In rubber tree, *Corynespora cassiicola* causes the damaging Corynespora leaf fall (CLF) disease that affects rubber in all Asian and African countries (Chee, 1990). Corynespora leaf disease was first detected in India in 1958 in seedling nurseries (Ramakrishnan and Pillay, 1961), although association of the fungus with rubber leaves was reported from Sierra Leone (Deighton, 1936). Corynespora leaf disease in mature trees was reported in India from the plantations of South Karnataka (Rajalakshmi and Kothandarman, 1996). Corynespora disease is more severe during the refoliation period of rubber trees (December to April). High

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