

# PHENOTYPIC, GENOTYPIC AND PATHOGENICITY ANALYSIS OF FOUR *COLLETOTRICHUM* SPP. CAUSING LEAF DISEASE IN RUBBER TREE (*HEVEA BRASILIENSIS*)

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The rubber tree (*Hevea brasiliensis*) is one of the most important domesticated crops planted commercially for the production of natural rubber (NR) worldwide. However, one of the biggest constraints of rubber cultivation is foliar diseases, which cause stunted growth of young rubber plants and reduced yield in mature rubber trees. Among the leaf diseases, *Colletotrichum* Leaf Disease (CLD) is one of the most common diseases causing economic loss. Two species of *Colletotrichum* viz. *C. acutatum* and *C. gloeosporioides* are the causative agents of *Colletotrichum* leaf disease. In addition to these, two other species were also isolated from infected leaf samples and included in this study. *Colletotrichum* spp. on rubber trees i.e. *C. acutatum* and *C. gloeosporioides* infect immature leaves and persist even in the mature leaves, but *C. siamense* and *C. fructicola* infect mature leaves and cause different kinds of symptoms. The present study was focused on the different *Colletotrichum* spp. infecting rubber trees and analysis of their phenotypic, genotypic and pathogenicity variations.

**Keywords:** *C. fructicola*, *C. siamense*, Foliar diseases, Growth retardation, Natural rubber, Pathogenicity

## INTRODUCTION

*Hevea brasiliensis* (Willd. ex A. Juss.) Muell. Arg., commonly known as the Para rubber tree, is native to the tropical rainforests of Central and South America. It is the major commercial source of natural rubber. Rubber trees are affected by a wide range of foliar diseases, which cause a reduction in rubber latex. In India, the most common leaf diseases of rubber trees include: *Colletotrichum* leaf disease caused by *Colletotrichum* spp., abnormal leaf fall by

*Phytophthora* spp., powdery mildew by *Oidium heveae* and *Corynespora* leaf fall disease by *Corynespora cassiicola*. Among the above, *Colletotrichum* is reported as a major leaf disease in India (Saha *et al.*, 2002), Southeast East Asia (Brown and Soepena, 1994) and Sri Lanka (Jayasinghe *et al.*, 1997).

The pathogen which was identified as *Colletotrichum heveae* (Petch, 1906) was earlier originally reported as *Colletotrichum gloeosporioides* (Penzig, 1882) causing CLD in Sri Lanka. Subsequently, the pathogen was