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INTEGRATED DISEASE CONTROL IN RUBBER PLANTATIONS IN SOUTH AMERICA

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Rubber tree cultivation in South America is threatened by a lot of pests and diseases. The most important factor retarding a successful development of natural rubber industry in South America is rubber tree leaf blight, caused by the ascomycete *Microcyclus ulei*. Due to application problems, this disease cannot be controlled by chemicals. This paper reports on studies carried out to find tolerant plant material, biological control procedures and plant management systems which allow rubber tree plantation establishment with economic success.

Introduction

Hevea brasiliensis (Willd. ex A.D. de Juss.) Muell. Arg. is the only source of natural rubber with economic importance. The plant's original habitat is tropical South America, but plantation development has prospered only outside South America, especially in the Far East. Since the onset of the 20th century various ambitious programs for the development of South American rubber plantations have been carried out, but all of them failed to be successful (Table 1), due to a highly destructive rubber tree leaf blight (South American leaf blight, SALB) caused by the ascomycete *Microcyclus ulei* (P. Henn.) Arx.

Due to the biology of the rubber tree and to the high adaptive potential of its fungal pathogen up till now it has not been possible to control this disease by chemicals. 10 years ago, in order to develop a new basis for South American rubber cultivation, a German-Brazilian program of collaboration was initiated, with the aim of analyzing the elements of inherent plant resistance and of elucidating of the pathogen's race structure. Based on these findings the rational "design" of adapted plant material for rubber

