

EVALUATION OF PHYLLOPLANE FUNGI AS BIOCONTROL AGENTS AGAINST *COLLETOTRICHUM GLOEOSPORIOIDES* CAUSING LEAF DISEASE IN *HEVEA BRASILIENSIS*

A. Grace Evueh, J.A. Okhuoya and O. Nicholas Ogbebor
Plant Protection Division, Rubber Research Institute of Nigeria,
P.M.B. 1049 Benin City, Nigeria

Submitted: 01 February 2007 Accepted: 05 June 2007

Evueh, A.G., Okhuoya, J.A. and Ogbebor, O.N. (2007). Evaluation of phylloplane fungi as biocontrol agents against *Colletotrichum gloeosporioides* causing leaf disease in *Hevea brasiliensis*. *Natural Rubber Research*, 20 (1 & 2): 74-76.

Ten phylloplane fungi were evaluated *in vitro* for biocontrol activity against *Colletotrichum gloeosporioides* causing leaf disease of rubber (*Hevea brasiliensis* Muell. Arg.). Among them, *Aspergillus* sp lysed the hyphae of the pathogen while *Trichophyton* sp and *Gliocladium* sp overgrew it. *Botrytis* sp, *Pleurothecium* sp and *Staphylotrichum* sp arrested its growth while *Gonastromyces* sp and *Syncephalastrum* sp showed inhibition zones. *Trichocladium* sp and *Aspergillus* sp exhibited higher antagonistic effect.

Keywords: Biological control, *Colletotrichum gloeosporioides*, *Hevea brasiliensis*, Phylloplane fungi.

Rubber (*Hevea brasiliensis*) is a crop of economic importance in Nigeria. Healthy growth of *H. brasiliensis* is necessary to ensure high productivity. Secondary leaf fall of rubber tree caused by *Colletotrichum gloeosporioides* (Penz.) Sacc is one of the serious leaf diseases affecting the new flushes produced following annual defoliation (wintering). The disease also affects young rubber plants in the nursery which under severe conditions leads to shoot die back.

Though *C. gloeosporioides* can be successfully controlled by use of fungicides, the high cost limits their use by small-scale farmers. Biological control for plant diseases is now receiving increasing attention (Osando and Waudo, 1994; Tewari, 1995; Ogbebor and Adekunle, 2005). The potential of biological control through the effect of

phyllosphere antagonists has been realized for sometime. This study is an attempt to identify phylloplane fungi which are potential biocontrol agents against *Colletotrichum* leaf disease of rubber.

The pathogen was isolated from infected leaves of rubber seedlings grown in the farm of Rubber Research Institute of Nigeria and a pure culture was developed using standard techniques. The culture was maintained on potato dextrose agar (PDA). Phylloplane fungi were isolated from healthy rubber leaves collected from the farm through leaf washing technique (Blakeman, 1981) and dilution method (Pelczar and Chan, 1972). Pure isolates were established on antibiotic-amended PDA.

Dual culturing was carried out using 10 mm discs of the pathogen and the po-