Inhibitory effects of *Monacrosporium ambrosium* on three species of endophytic fungi from tea (*Camellia sinensis*)

C. Kehelpannala, N.S. Kumar*, L. Jayasinghe and N.K.B. Adikaram

National Institute of Fundamental Studies, Kandy, Sri Lanka.
**nskumar3@gmail.com*

Endophytic fungi produce bioactive secondary metabolites which can protect the host plant from fungal pathogens. Studies of mycelial interactions using dual culture techniques are used to detect antagonistic interactions between filamentous fungi. An ethyl acetate extract of a culture broth of *Monacrosporium ambrosium* was found to inhibit the growth of endophytic fungi, *Pestalotiopsis camelliae* and *Phoma multirostrata* isolated from tea stems. In the current study, mycelial interactions between *M. ambrosium* and three endophytic fungi isolated from tea plants were evaluated using a dual culture technique. *M. ambrosium* (syn. *Fusarium ambrosium)* now described as *Fusarium oligoseptatum* sp., was isolated from the Tea Shot-hole borer beetle *Euwallacea fornicatus* (Eichhoff) an insect pest of tea (*Camellia sinensis*). The endophytic fungi isolated from tea plants were identified as *Pestalotiopsis camelliae*, *Phoma multirostrata* and *Guignardia mangiferae* by sequence analysis of the ITS region of the rDNA gene. The mean percentage inhibition of radial mycelial growth (PIRG) of each of the three fungi in the presence of *M. ambrosium*, zones of inhibition and type of interaction between the fungi were evaluated. An inhibition zone was not observed between *M. ambrosium* and either of the fungi *P. multirostrata* or *G. mangiferae*. They showed mutually intermingling growth without any macroscopic signs of interaction. The inhibition zone between *M. ambrosium* and *P. camelliae* was 0.1 cm. They showed slight inhibition, approaching each other until almost in contact with a narrow demarcation line clearly visible between the two fungi. The highest PIRG value (35.3 ± 0.9) was observed with *P. camelliae* while PIRG values of *G. mangiferae* (9.5 ± 2.4) and *P. multirostrata* (10.8 ± 1.8) were not significantly different ($P<0.05$) from each other. These results indicate that the growth of the three endophytic fungi was not inhibited by *M. ambrosium* under the conditions used in the study.

Keywords: *Camellia sinensis, Monacrosporium ambrosium,mycelial interaction*