

Plant-pathogen interaction between *Exserohilum monoceras* with *Oryza sativa* and *Echinochloa crus-galli*

ABSTRACT

Exserohilum monoceras was isolated from infected *Echinochloa crus-galli*, and maintained in the dark under near visible ultraviolet (NUV) light at 30°C on V8 (half-strength) agar. Conidia were collected from 14 day old V8 (half-strength) agar plates by washing the surface with sterile distilled water and using a rubber spatula to rub. Prior research has indicated that *E. monoceras* was pathogenic to *E. crus-galli* and other *Echinochloa* species under optimum greenhouse conditions. Rice was also infected by *E. monoceras*, but it exhibited a resistant reaction and the inoculated plants recovered over time. The aims of this study were to examine the physical aspects of infection by *E. monoceras* on the leaf surfaces of the resistant rice (*Oryza sativa*) and susceptible *E. crus-galli* plants, and to suggest ways to make the pathogen an effective bioherbicide agent. Observation of the infection was done by light microscopy which involved cross section and leaf clearing method and also by scanning electron microscopy (SEM). Formation of appressorium indicated that an infection on the susceptible plant was clearly seen on both methods used. Germination of the conidia was always associated with appressoria formation on the leaf and formation of appressoria was significantly higher (98%) on *E. crus-galli* leaves as the target plant compared to rice leaves (20%). This research also shows the germ tubes rarely ever penetrated via the stomata but through the cuticle (direct penetration) instead.

Keyword: *Exserohilum monoceras*; *Echinochloa crus-galli*; Appressoria; Bioherbicide