

**Bipolaris sorokiniana: a potential indigenous plant pathogen to control goosegrass
(*Eleusine indica*) in oil palm plantations**

ABSTRACT

Indigenous plant pathogens, namely *Bipolaris sorokiniana*, *Phoma herbarum* and *Curvularia aerea*, were evaluated in the nursery to assess their potential of controlling goosegrass (*Eleusine indica*). Two experiments were conducted, which involved pathogenicity test and host range test. The pathogenicity test showed that *B. sorokiniana* was more pathogenic to *E. indica* compared to *P. herbarum* and *C. aerea*. Infection of *B. sorokiniana* on *E. indica* occurred on the fifth day after inoculation, with 2×10^6 CFU ml⁻¹. On the Day 35 after treatment, *B. sorokiniana* caused 94% disease severity, the highest damage compared to the other two fungal plant pathogens. The increase in disease severity affected *E. indica*'s growth, causing dry weight losses of up to 28.5 g, which was significantly lower than the dry weight of *E. indica* treated with *C. aerea* (39.5 g) and untreated control (39.2 g). Nevertheless, *B. sorokiniana* did not infect oil palm seedlings. In other host plants, such as tomato, lady finger, sweet corn, chives, banana, eggplant, chili, sweet potato, Napier grass and spinach, *B. sorokiniana* only caused mild disease severity ranging from 10% to 20%. Therefore, this study suggests that *B. sorokiniana* may have the potential to be used as a biological control agent for *E. indica* in oil palm plantations.

Keyword: Weed biocontrol; *Bipolaris sorokiniana*; *Eleusine indica*