

Evaluation of *Trichoderma asperellum* for inhibiting growth of *Fusarium oxysporum* f. sp. *lycopersici* and enhancing growth of tomato and fruit quality

ABSTRACT

Fusarium wilt is a soil borne disease causing severe losses in tomato plants. The pathogen perseverance in the soil makes the disease difficult to control. Therefore, this study was conducted to examine the efficacy of the biocontrol agent *Trichoderma asperellum* against *Fusarium oxysporum* f. sp. *lycopersici*, causal agent of Fusarium wilt disease of tomato based on in vitro and in vivo conditions. *Trichoderma asperellum* B1092 inhibited mycelial growth of the pathogen under in vitro condition using poison agar method. As in vivo, formulation of *Trichoderma asperellum*-enriched oil palm empty fruit bunch was significantly enhanced the growth parameters of tomato seedlings as compared to the control and it also significantly reduced the wilt disease severity. As a conclusion, *T. asperellum* B1902 may offer the potential for biologically controlling Fusarium wilt of tomato, inducing the growth of tomato seedlings and improve its quality.

Keyword: Biocontrol; Fungi; Fusarium wilt; Physiological parameters; Poison agar