

A review report on the mechanism of *Trichoderma* spp. as biological control agent of the basal stem rot

ABSTRACT

Trichoderma spp. have been the most common fungi applied as biological control agents (BCA) as an effort to combat a wide range of plant diseases. Its uses have recorded good success rate in controlling major plant diseases. Knowledge on the mechanisms employed by *Trichoderma* spp. could be further studied to improve its ability as an efficient biocontrol agent. The *Trichoderma* ability to curb plant diseases were mainly based on the activation of single or multiple control mechanisms. It is known that the *Trichoderma*-based biocontrol mechanisms mainly rely on mycoparasitism, production of antibiotic and/or hydrolytic enzymes, competition for nutrients, as well as induced plant resistance; numerous secondary metabolites produced by *Trichoderma* species could directly inhibit the growth of several plant pathogens. These mechanisms may act directly or indirectly against the targeted plant pathogen. This chapter reviews the recent updates on published research findings on mechanisms used by *Trichoderma* as biological control of plant diseases particularly on basal stem rot disease of oil palm caused by *Ganoderma* spp.

Keyword: Antibiosis; Competition; Induced resistance; Mycoparasitism; Secondary metabolite