EFFICACY OF MICROBIAL ANTAGONISTS IN NUTRIENT AMMENDED MEDIA FOR 
THE CONTROL OF BACTERIAL WILT (RALSTONIA SOLANACEARUM) IN TOMATO 
(SOLANUM LYCOPERSICUM)

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Abstract
Bacterial wilt, caused by *Ralstonia solanacearum*, is one of the most important 
tomato diseases in Kenya. This disease causes yield losses of up to 100%. Biological 
control agents (BCA’s) such as *Bacillus spp* and *Trichoderma spp* are known to be 
effective against various plant pathogens. Studies were conducted to evaluate the 
efficacy of microbial isolates of *Bacillus subtilis 001, Trichoderma asperellum TR 900 
and Metarhizium anisophila* in the control of bacterial wilt. Seedlings were 
drenched with either *B. subtilis 001, T. asperellum TR 900, Metarhizium anisophila* 
or a combination of the three biological control agents at concentration 10⁷ CFU/g 
and planted in *Ralstonia solanacearum* inoculated media at a concentration of 10⁸ 
CFU/g. After six weeks, percent disease incidence was 38.4%, 44.6% and 52.6% 
respectively compared to 45% in the control. Transplanting of tomato seedlings in 
nutrient amended media with organic matter, NPK, CAN, later enhanced with *B. 
subtilis, T. asperellum* and challenged with *Ralstonia solanacearum* resulted in 
significant disease incidence reduction (p<0.001). Therefore, application of *Bacillus 
subtilis* and *Trichoderma asperellum* in amended can provide a potential control of 
bacterial wilt disease in tomato.

Key words: *Ralstonia Solanacearum, Bacillus subtilis, Trichoderma asperellum, cfu, 
BCAs*