

Abstract

Fusarium oxysporum V5w2 is a fungal agent, which was originally intended for biological control of the root pathogenic nematode *Radopholus similis* among other banana pests. Information on some of its actual effects on banana plants and pests has been scarce. A study was conducted to assess the effects of *F. oxysporum* V5w2 and mulch on *R. similis* and banana plants in the field. The experiment was a 3-factor ($2 \times 2 \times 2$) complete randomized block design with or without *F. oxysporum* V5w2, *R. similis* or mulch. Root damage was higher when plants were inoculated with *R. similis* compared to non-inoculated plants, while plant height, leaf size, bunch size and banana yields were lower in *R. similis*-inoculated plants. Plant growth and bunch size were greater in mulched than in non-mulched plots, with banana yields on mulched plots increasing by 131% to reach 37 tonnes per hectare. *F. oxysporum* V5w2-inoculated plants were shorter, with fewer leaves that were smaller, and had shorter duration to harvest than non-inoculated ones. When *R. similis*-inoculated mulched plants received *F. oxysporum* V5w2 inoculum, plant toppling-over occurred less frequently compared to plants that were not inoculated with the fungus, probably because the plants were smaller in size during growth. The benefits of mulching in banana production were evident, while the claimed enhancing effect of inoculating tissue culture plants with *F. oxysporum* V5w2 as a biological control agent could not be verified. I conclude by suggesting that, the use of *F. oxysporum* V5w2 as a biological control agent of *R. similis* and other pests should be reconsidered, because this fungal strain has the potential of invading xylem vessels and becoming pathogenic to banana plants.