Title Biocontrol Efficacy of *Bacillus subtilis* Strains Isolated from Cow Dung Against Postharvest Yam (*Dioscorea rotundata* L.) Pathogens

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Abstract

The biocontrol potential of *Bacillus subtilis* isolated from cow dung microflora was investigated in vitro and in vivo against two postharvest yam pathogenic fungi, *Fusarium oxysporum* and *Botryodiplodia theobromae*. *B. subtilis* strains inhibited the growth of *F. oxysporum* and *B. theobromae* in vitro in liquid medium in the range of 49.3–56.6% and in solid medium in the range of 31.0–36.0%, in comparison to the corresponding growth of fungi without bacterial inoculation. The interaction between *B. subtilis* CM1 and *F. oxysporum* was also studied by scanning electron microscopy. Chitinase production was demonstrated in vitro when *B. subtilis* was grown in the presence of colloidal chitin as the sole carbon source in a liquid medium. In vivo study showed that *B. subtilis* strains inhibited the growth of fungi (*F. oxysporum* and *B. thobromae*) up to 83% in wound cavities of yam tubers.

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