Title Biological control of postharvest fungal rot of yam (*Dioscorea* spp.) with *Bacillus subtilis*

Author R. N. Okigbo

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Abstract

The potential of isolates of *Bacillus subtilis* from yam farm soil to control rot of yam in storage barns was investigated. Yam tubers inoculated *in vivo* with *B. subtilis* showed no rot while those inoculated with *Aspergillus niger, Botryodiploidia theobromae* or *Penicillium oxalicum* showed considerable rot. The set of yams in which *B. subtilis* and the fungi were simultaneously inoculated produced rot whereas those in which B. *subtilis* was inoculated a day before the fungi was inoculated were totally reduced or free of rot. Many fewer fungi were isolated from the surface of tubers treated with *B. subtilis* than from the untreated (control) and there was high recovery of *B. subtilis* (99–100%) throughout the period of storage. Rot build up was faster in uninoculated control tubers or those inoculated with a spoilage fungus, while those treated with the antagonist were totally reduced or free of rot. The culture filtrate of *B. subtilis* prevented spore germination in some spoilage fungi. The importance of this study in relation to farmers in developing countries is discussed.