Abstract

The presence of mycotoxins in cocoa beans and chocolate products is emerging as an important public health issue and has created a need for more information about the occurrence of mycotoxigenic fungi in cocoa beans. This project has surveyed the presence of filamentous fungi on dried cocoa beans from Indonesia, Solomon Islands, and Queensland, Australia. Fungi were isolated by placing chlorine and non-chlorine disinfected beans onto the surface of plates of DG-18 agar, and also their populations were determined by spread plating onto DG-18 and DRBC agar. Fungal population in Indonesian beans varied between $10^4 – 10^6$ CFU.g^{-1}, while the populations on Queensland beans were consistently low (< 100 – 2.5 x 10^2 CFU.g^{-1}). However, there was a high incidence of potentially mycotoxigenic filamentous fungi on all bean samples. The main species were *Aspergillus flavus, Aspergillus niger, Aspergillus wentii, Aspergillus clavatus, Penicillium citrinum,* and *Penicillium spinolosum*. Chlorine treatment of the beans decreased the incidence and diversity of fungal species detected. The beans from Queensland gave high counts of *Bacillus* species and lactic acid bacteria and it is suggested that they served as natural biocontrol agents against the filamentous fungi.