

Title Potential of botanicals and biocontrol agents on growth and aflatoxin production by *Aspergillus flavus* infecting rice grains

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Citation Food Control, Volume 20, Issue 2, February 2009, Pages 173-178

Keywords Rice; *Aspergillus flavus*; AFB₁; Indirect ELISA; Plant extracts; Biocontrol agents

Abstract

The potential of certain plant extracts and biocontrol agents for the reduction of aflatoxin B₁ (AFB₁) in stored rice was investigated. Among the plant extracts tested, *Syzigium aromaticum* (5 g/kg) showed complete inhibition of *Aspergillus flavus* growth and AFB₁ production. *Curcuma longa*, *Allium sativum* and *Ocimum sanctum* also effectively inhibited the *A. flavus* growth (65–78%) and AFB₁ production (72.2–85.7%) at 5 g/kg concentration. Among the biocontrol agents, culture filtrate of *Rhodococcus erythropolis* completely inhibited the AFB₁ production at 25 ml/kg concentration. The other biocontrol agents, *Pseudomonas fluorescens*, *Trichoderma virens* and *Bacillus subtilis* showed 93%, 80% and 68% reduction of *A. flavus* growth and 83.7%, 72.2% and 58% reduction of AFB₁ at 200 ml/kg, respectively.