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POTENTIAL OF FIVE MICROBIAL ANTAGONISTS FOR BIOCONTROL OF TOXIGENIC POSTHARVEST FUNGAL PATHOGENS IN AGRICULTURAL COMMODITIES

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Toxic fungal metabolites (i.e. mycotoxins) are chemically diverse and occur in foods and feeds. They can cause both economic losses and health problems on humans and animals. Many species of *Aspergillus*, *Alternaria*, *Penicillium*, and *Fusarium* which grow on wounds and previously infected surfaces of fruits and vegetables are potential toxin producers. Therefore it is necessary to identify problem areas and suggest preventive measures.

This project involves the investigation of the ability of previously isolated microbial antagonists (MAs), *Bacillus macerans*, *Pantoea agglomerans*, *Candida lusitanae*, *Flavobacterium sp.* and *Enterobacter sp.*, to control growth and toxin production of some pathogenic fungi.

As the initial step, certain fungi known to be toxigenic, were isolated from agricultural commodities and screened for toxins. An isolate of *Aspergillus flavus* from copra, was screened for aflatoxin production using a test tube screening method on Coconut Milk Agar medium, based on UV fluorescence (365 nm). *A.flavus* was found to produce aflatoxin B1 which is a potential carcinogen. Presence of aflatoxin B1 was confirmed using Thin Layer Chromatographic technique (TLC).

The same *A. flavus* strain was cross inoculated to scraped coconut and aflatoxin B1 was visible in parts per million quantities after three days. Another isolate of *A. flavus* from groundnut was screened in the same manner and the presence of aflatoxin B1 on the substrate was established. As a continuation of this project, common potentially toxigenic fungal genera from different agricultural commodities will be screened for their ability to produce mycotoxins on their respective substrates. The effect of the MAs on toxigenic isolates will be investigated, with the view of developing them as biocontrol agents.

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