

ABSTRACT

Mycoflora and Mycotoxins of Stored Local Foods

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A semi-quantitative TLC screening method was developed for the simultaneous detection of citrinin and cyclopiazonic acid (CPA) mycotoxins in corn, rice and peanuts. Detection limits were at 1.13 $\mu\text{g/g}$ for CPA and 0.02 $\mu\text{g/g}$ for citrinin in all media.

A simple yet accurate flow injection analysis quantitative method was developed for CPA. The detection limit was established at 1.1 $\mu\text{g/mL}$ and the linear range extended to 9.2 $\mu\text{g/mL}$.

A study of the mycotoxigenic fungi on local corn, rice and peanut substrates indicated the predominance of *Aspergillus flavus*, *Aspergillus terreus* and *Penicillium citrinum*. Other potentially mycotoxigenic fungi were also detected. Evaluation of the mycotoxin producing ability of isolates of these three fungal species was done by the analytical methods described above.

Seven out of eighteen *Aspergillus flavus* isolates were found to produce an average of 41.15 $\mu\text{g/g}$ CPA while six isolates produced an average of 59.93 $\mu\text{g/g}$ Aflatoxin B₁. On average two of the isolates produced 0.33 $\mu\text{g/g}$ Aflatoxin B₂ and seven isolates 8.71 $\mu\text{g/g}$ Aflatoxin G₁.

Four of four *Penicillium citrinum* isolates produced an average of 2565.6 $\mu\text{g/g}$ citrinin while all eleven *Aspergillus terreus* isolates produced 9.82 $\mu\text{g/g}$ citrinin on average.

ACKNOWLEDGMENT

A study of the mycotoxins produced in deliberately moulded substrates which were infected with mycotoxigenic fungi detected CPA and citrinin with only one peanut isolate producing 0.7 $\mu\text{g/g}$ Aflatoxin B₁.

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