

Screening of Citrinin Mycotoxin Producing by *Aspergillus terreus*

B. Aruna, S. Girisham and S.M. Reddy

Department of Microbiology, Kakatiya University, Warangal, Telangana.

Email: arunamicro1991@gmail.com

ABSTRACT

Citrinin is a potential mycotoxin produced by toxic strains of several *Penicillium*, *Aspergillus* (*Aspergillus terreus*, *Aspergillus carneus* and *Aspergillus niveus*) and *Monascus* spp. It was first recognized as a powerful antibiotic but later it was found to be nephrotoxin which damage the kidneys of test animals, renal damage, vasodilation and bronchial constriction, retard growth and eventually cause death. Citrinin is found to be associated with rice, wheat, oats, rye, corn, barley and vegetarian foods. Dogs receiving citrinin orally developed proteinuria, glucosuria and ultrastructural changes in the epithelium of the S₂ segment, thick ascending limb, distal convoluted tubule and collecting ducts. Citrinin is also teratogenic, embryotoxic and a putative carcinogen. Therefore, its presence on food and feed could constitute a hazard to humans and animals.

In present investigation citrinin producing *Aspergillus* species were isolated from different food and feeds (sorghum, maize, red gram, poultry and animal feed and bakery foods) samples collected in and around Telangana region, revealed that the presence of different *Aspergillus* species and their mycotoxigenic ability were assessed. Generally different *Aspergillus* species which are structurally diverse, produce secondary metabolites and their mycotoxigenicity of different fungi are varied with the species. Total 150 *Aspergillus* strains (*Aspergillus flavus*, *A. fumigates*, *A. niger*, *A. terreus*, *A. ochreus* and *A. vesicolor*) were isolated from 250 samples using dilution plate, blotter technique and humidity chamber method. Among these isolated strains, 40 strains of *A. terreus* were found to be positive for citrinin production based on TLC and HPLC method for identifying and quantifying. From this 40 strains only 6 strains which are highly potential for citrinin production with mycotoxigenicity of 25% and 60% respectively are selected for further studies.