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The implications of mycotoxins contamination on Omani food chain

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Mycotoxins are group of fungal toxins that are widespread in agricultural commodities and food. The most notorious toxin of this group is Aflatoxin. It is produced by *Aspergillus* fungus and can result in major economic losses and can negatively affect animal and human health by causing both acute and chronic toxicity in animals and humans including acute liver damage, liver cirrhosis and liver cancers. Oman is a major importer of different agriculture commodities such as cereals, nuts, dried fruit, spices, oil seeds, dried peas, spices, beans and fruit. As Oman has a subtropical climate, food and feed commodities are susceptible to contamination and the food chain can be affected by poor storage of these products. In order to prevent the economic loss and the negative impact on health, Aflatoxin has to be detected in food chain. Some analytical techniques such as thin-layer chromatography (TLC), high performance liquid chromatography (HPLC), two-dimensional thin layer chromatography and enzyme-linked immunosorbent assay (ELISA) have been available for the qualitative and quantitative analysis of AFs. Although prevention is the best control strategy, it is not always possible to prevent all mycotoxin contamination. To control the risks associated with AF contamination, Hazard Analysis and Critical Control Point (HACCP) approach can be used. This approach involves strategies for prevention, control, good manufacturing practices and quality control at all stages of production from the field to the final consumer. Cheap and environmentally sustainable methods that can be applied pre or post-harvest to reduce the contamination of AFs are available. These methods include proper irrigation, choice of genetically resistant crop strains and bio-pesticide management which involves using a non-aflatoxigenic strain of *Aspergillus* that competitively excludes toxic strains. Other methods include sorting and disposal of visibly moldy or damaged seeds, reducing the bioavailability of aflatoxins using clay and chemo-protection.

Biography

Louay Labban is currently a Professor of Nutrition and Dietetics at A'Sharqiyah University in Sultante of Oman. Earlier he taught for 6 years at Kalamoon University in Syria. He taught several courses related to nutrition and dietetics. He has also served as Vice Dean of Faculty of Health Sciences at the same university. Before joining Kalamoon University, he taught several courses in American Universities and also worked for different pharmaceutical companies in the United States for many years and he was responsible for studying the effect of newly developed medication on the nutritional status of volunteered patients and he also studied the drug-nutrient interaction for these medications. He has published several papers in regarding nutritional intervention in Diabetes Mellitus management. He has received his Bachelor degree from Damascus University in Syria, Master degree from University of Newcastle upon Tyne in England and his Doctorate degree from La Salle University in the United States.

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