

Health Burden of Disease Assessment for Minimizing Aflatoxin Exposure in Peanuts

Authors : Min-Pei Ling

Abstract : Aflatoxin is a fungal secondary metabolite with high toxicity capable of contaminating various types of food crops. It has been identified as a Group 1 human carcinogen by the International Agency for Research on Cancer. Chronic aflatoxin exposure has caused a worldwide public food safety concern. Peanuts and peanut products are the major sources of aflatoxin exposure. Therefore, some reduction interventions have been developed to minimize contamination through the peanut production chain. The purpose of this study is to estimate the efficacy of interventions in reducing the health impact of hepatocellular carcinoma caused by aflatoxin contamination in peanuts. The estimated total disability-adjusted life-years (DALYs) was calculated using FDA-iRISK online software. Six aflatoxin reduction strategies were evaluated, including good agricultural practice (GAP), biocontrol, Purdue Improved Crop Storage packaging, basic processing, ozonolysis, and ultraviolet irradiation. The results indicated that basic processing could prevent huge public health loss of 4,079.7–21,833 total DALYs per year, which accounted for 39.6% of all decreased total DALYs. GAP and biocontrol were both effective strategies in the farm field, while the other three interventions were limited in reducing total DALYs. In conclusion, this study could help farmers, processing plants, and government policymakers to alleviate aflatoxin contamination issues in the peanut production chain.

Keywords : aflatoxin, health burden, disability-adjusted life-years, peanuts

Conference Title : ICTAP 2019 : International Conference on Toxicology and Applied Pharmacology

Conference Location : Paris, France

Conference Dates : July 18-19, 2019