

The occurrence of aflatoxin M1 in fresh cow milk retailed in Dar es Salaam, Tanzania

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Abstract

Aflatoxins are toxic substances produced by *Aspergillus flavus* and *Aspergillus parasiticus* during their growth on foods or feeds. Aflatoxin M1 (AFM1) occurs in cow's milk as a result of dairy cows consuming aflatoxin B1 (AFB1) contaminated feeds. The number of dairy cattle in Dar es Salaam has been on the increase over the years as part of individual efforts to supplement income. In addition to grass, dairy cattle are fed feeds that are likely to contain AFB1 because of susceptibility to fungal contamination. Little is known about the occurrence of aflatoxins in fresh milk retailed in Dar es Salaam. The aim of this investigation was to determine the occurrence of AFM1 in local milk supplies retailed in Dar es Salaam. Thirty seven samples of raw cow's milk were randomly collected from milk stalls and retail shops in Dar es Salaam and analysed for the presence of AFM1. The samples were analysed using high-performance liquid chromatography. Thirty four of the 37 milk samples (92%) had AFM1 levels between 0.005 and 0.855 µg/kg with a mean concentration of 0.246 µg/kg. Sixty eight percent contained low levels of AFM1 ranging from 0.005 to 0.336 µg/kg while twenty four percent contained high levels ranging from 0.545 to 0.855 µg/kg. Eight percent contained no AFM1 or undetected amounts. Dairy cattle in Dar es Salaam are fed on feed contaminated with AFB1 and therefore dairy and dairy products consumers are at risk of aflatoxin M1 exposure. Dairy cattle keepers and local feed producers need to be educated on the potential hazard of mycotoxins and available preventive measures that are based on principles of Hazard Analysis Critical Control Points (HACCP). Also surveillance on aflatoxin contamination in animal feeds should be strengthened.

Keywords: Aflatoxin B1, Aflatoxin M1, cow's milk, animal feed, high-performance liquid, chromatography (HPLC), Dar es Salaam

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