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Status of Aflatoxin Contamination in Marketed and Farm Gate Milk in Nairobi County of Kenya

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Abstract

In Kenya where milk consumption is higher than in other countries in the region, a major concern is the risk of chemical hazards in milk; particularly aflatoxins whose high levels have been reported. Milk contamination with aflatoxin M_1 (AFM_1) has been causing public health concerns. Thus the aim of this study was to give baseline data on aflatoxin contamination in marketed and on-farm consumed milk in Nairobi County. To quantify the levels of aflatoxin in milk and milk products consumed in middle/high and low income areas of Nairobi, 291 samples were collected mainly from retail shops and selected supermarket. For the farm gate milk, 84 milk samples were collected from small holder dairy farms in urban and peri-urban areas. All samples were analysed for AFM_1 using enzyme-linked immunosorbent assay (ELISA). The levels of AFM_1 in the milk and milk products ranged from 0.30-1069.45 ppt in low income area with over 66 % of samples exceeding the EU legal limit of 50 ng kg^{-1}, whereas contamination levels ranged from 0.94-1078.49 ppt in samples from higher income area wherein 40% exceeded the EU legal limit. Although farm gate milk samples had lower AFM_1 levels (range: 1.73-255.96 ppt) when compared to market milk samples, over 64 % had levels that exceeded the EU legal limit. The population in these regions is at high risk to AFM_1 exposure, thus necessitating the need to explore different mitigation strategies to control AFM_1 contamination in milk and milk products in Nairobi county of Kenya.

Keywords: Aflatoxin M_1, dairy farms, ELISA, exposure, milk, Kenya

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