

Food safety and Hygiene

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Aflatoxin contamination levels along the Kenyan dairy supply chain are related to husbandry practices and socio-economic factors

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Aflatoxin contamination of dairy feeds and milk was investigated in 8 Kenyan regions; Kwale, Kilifi, Nyandarua, Nyeri, Samburu Uasin Gishu and Nandi. The study was initiated to assess the knowledge and practices of dairy value chain actors as well as the prevalence and levels of aflatoxins (B1, B2 G1, G2 & M1) in dairy feeds and milk respectively. For this purpose, 180 milk samples were collected dairy farmers, milk traders and processors. Additionally, 250 feed samples were collected from dairy farmers, feed traders and feed millers. Feed and milk analysis for aflatoxin contamination were conducted using enzyme-linked immunosorbent assay (ELISA). Results showed presence of aflatoxin M1 in 123(67.8%) of the milk samples. Aflatoxin M1 contamination exceeded the recommended FAO/WHO 0.05µg/L in all milk samples, ranging from 1.1 to 107.3µg/L. 100 feed samples (40%) which were all dairy concentrates were positive for total aflatoxins of which 69 samples recorded above the 10ppb Kenya Bureau of Standards (KEBS) regulatory levels. All the forage grasses (n=80) tested negative for total

aflatoxins while 30 % (n=70) of the crop residues tested positive for total aflatoxins. Linear regression revealed a significant association between feed handling practices and total aflatoxin and AFM1 levels. The results show high incidences of animal feed contamination along the dairy value chain which impacts negatively on human health. Regulatory measures need to be put in place to improve adherence to feed and milk safety practices across the value chain particularly in raw materials sourcing, manufacture and distribution of dairy meal. Government initiatives, effective surveillance systems, collaboration between the many stakeholders, research (particularly related to preventative measures), adequate storage facilities and capacity development and training of the stakeholders additionally, availability of information on feed and milk safety standards to dairy stakeholders needs to be enhanced to ensure safe feeds and milk.

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