

Title: Levels of aflatoxins in human breast milk and household maize: the case of mothers attending MCH Makindu Hospital Makueni

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Abstract: Aflatoxin poisoning is a public health, and social economic problem. It is of great importance world wide and especially in the developing countries where 4.5 billion people are affected. Minute levels of aflatoxins in food may cause severe poisoning in human beings and animals. Aflatoxicosis can be acute or chronic exposure, characterized by acute liver damage, cancer, teratogenic, immunosuppression, kwashiorkor, retarded growth rate, nutritional modification diarrhea and even death,. In this study the levels of aflatoxins MI and BI in 113 human breast milk and maize samples, were determined using the Enzyme Linked Immuno Sorbent Assay (ELISA) method. A cross-sectional study among lactating mothers, visiting maternal child health clinic (MCH) in Makindu hospital, Makueni District was carried out. Milk samples from lactating mothers was collected using sterile zinc free plastic containers. Each mothers household was visited and a maize sample collected. Information on the socio-economic and demographic data was collected using an open ended questionnaire administered to the lactating mothers. Data analysis was carried out by the aid of SPSS software upon acquisition of descriptive statistical tools e.g mean, median, range, standard deviation, frequencies and percentages. The results indicated that out of the 113 human breast milk samples tested 92(82%) were AFMI positive with levels of 5-559ppt. Maize samples had levels of AFB 1 of 5- 260ppb,were mouldy, insect infested and fragmented, factors that enhance aflatoxins contamination. Multiple logistic regression was used to explore the relationship between multiple, risk factors and aflatoxin in maize and human breast milk levels. A Chi square test showed a relationship between MCR mothers household maize aflatoxins and aflatoxins in mothers breast milk, $\chi^2 = 80$ df 5 $P = 0.001$. The study points to an underlying problem of high levels of AFMI and AFB 1 that requires the action of policy makers. The study provides a baseline 'data on the aflatoxin MI levels on human breast milk that may be used as a biomarker by public health intervention policy programmes. The study may also enhance future comparison and estimation of trends on aflatoxicosis .Results may assist designation and implementation measures against aflatoxicosis in Makueni District.