

New Challenge: Reduction of Aflatoxin M1 Residues in Cow's Milk by MilBond Dietary Hydrated Sodium Calcium Aluminosilicate (HSCAS) and Its Effect on Milk Composition

Authors : A. Aly Salwa, H. Diekmann, S. Hafiz Ragaa, DG Abo Elhassan

Abstract : This study was aimed to evaluate the effect of Milbond (HSCAS) on aflatoxin M1 in artificially contaminated cows milk. Chemisorption compounds used in this experiment were MilBond, hydrated sodium calcium aluminosilicate (HSCAS). Raw cow milk were artificially exposed to aflatoxin M1 in a concentration of 100 ppb) with addition of Nilbond at 0.5, 1, 2 and 3 % at room temperature for 30 minutes. Aflatoxin M1 was decreased more than 95% by HSCAS at 2%. Milk composition consist of protein, fat, lactose, solid non fat and total solid were affected by addition of some adsorbents were not significantly affected (p 0.05). Tthis method did not involve degrading the toxin, milk may be free from toxin degradation products and is safe for consumption. In addition, the added material may be easily separated from milk after the substance adsorbs the toxin. Thus, this method should be developed by further researches for determining effects of these compounds on functional properties of milk. The ability of hydrated sodium calcium aluminosilicate to prevent or reduce the level of aflatoxin MI residues in milk is critically needed. This finding has important implications, because milk is ultimately consumed by humans and animals, and the reduction of aflatoxin contamination in the milk could have an important impact on their health.

Keywords : aflatoxin M1, Hydrated sodium calcium aluminium silicate, detoxification, raw cow milk

Conference Title : ICFPT 2015 : International Conference on Food Processing and Technology

Conference Location : London, United Kingdom

Conference Dates : June 28-29, 2015