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OCCURRENCE OF B_1 AFLATOXIN IN DIET AND M_1 AFLATOXIN IN BOVINE MILK

OCORRÊNCIA DE AFLATOXINA B_1 NA DIETA E DE AFLATOXINA M_1 NO LEITE DE BOVINOS

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Ensuring food quality is one of the principles of food safety. Food for dairy cattle may be contaminated by fungi of the genus *Aspergillus*, which produce aflatoxins. The B_1 aflatoxin, when ingested by animals, is biotransformed in liver in several other toxic metabolites, including M_1 aflatoxin which is excreted in milk. M_1 aflatoxin has a carcinogenic effect, which the presence in milk poses a serious risk to public health because milk and dairy products are consumed mainly by children, pregnant women and elderly. The objective of this study was to detect the presence of B_1 aflatoxin in feed supplied to dairy cows and the presence of M_1 aflatoxin in milk. Samples were collected from complete diet (corn silage and concentrate) from a batch of 15 lactating cows from a dairy farm in the Campinas region. Two samples of diets were collected directly into the troughs in intervals of 24 hours at every 15 days, totalizing a period of 45 days. Milk samples of those cows were collected 24 hours after diet collection, directly from sample valves in the glass jars.. B_1 and M_1 aflatoxins were detected by the technique of High Performance Liquid Chromatography after extraction and purification on immunoaffinity columns. From the 40 samples of diets evaluated, 40% were contaminated with B_1 aflatoxin, and the levels found ranged from 1.93 to 43.78µg/Kg. One sample showed result higher than the maximum recommended for grain and animal feed in Brazil (20µg/Kg). From the 75 milk samples analyzed, the presence of M_1 aflatoxin was detected in 13.3% with levels ranging from 0.03 to 0.16µg/L, not exceeding the maximum permitted for marketing in the country of 0.5µg/L, however 80% of contaminated samples had values above the maximum permissible levels of 0.05µg/L, value found among countries with abundant milk production... The presence of aflatoxins highlights the importance of monitoring the production, the storage and the importance of handling food and ingredients intended for dairy cattle to prevent the presence of B_1 aflatoxin and consequently, M_1 aflatoxin in milk.

Key words: B_1 aflatoxin; M_1 aflatoxin; diet, lactating cows.