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Distribution and stability of Aflatoxin M_1 during processing and ripening of traditional white pickled cheese

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Abstract

The distribution of aflatoxin M_1 (AFM_1) has been studied between curd, whey, cheese and pickle samples of Turkish white pickled cheese produced according to traditional techniques and its stability studied during the ripening period. Cheeses were produced in three cheese-making trials using raw milk that was artificially contaminated with AFM_1 at the levels of 50, 250 and 750 ng/l and allowed to ripen for three months. AFM_1 determinations were carried out at intervals by LC with fluorescence detection after immunoaffinity column clean-up. During the syneresis of the cheese a proportionately high concentration of AFM_1 remained in curd and for each trial the level was 3.6, 3.8 and 4.0 times higher than levels in milk. At the end of the ripening, the distribution of AFM_1 for cheese/whey + brine samples was 0.9, 1.0 and 1.3 for first, second and third spiking respectively indicating that nearly half of the AFM_1 remained in cheese. It has been found that only 2–4% of the initial spiking of AFM_1 transferred into the brine

solution. During the ripening period AFM_1 levels remained constant suggesting that AFM_1 was quite stable during manufacturing and ripening.

Keywords:

Aflatoxin M_1 | traditional white pickled cheese | stability | distribution

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