عنوان مقاله:

Ability of Different Treatments of Saccharomyces cerevisiae to Surface Bind Aflatoxin M۱ in Yoghurt

محل انتشار:

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خلاصه مقاله:

Microbial detoxification is considered as one of the most common methods used for the elimination of aflatoxins. Reports indicate that S. cerevisiae can be effective in removing aflatoxins through the adsorption of aflatoxins to their cell wall. In the current research, the ability of S. cerevisiae (viable, acid-, heat- and ultrasound-treated yeasts) to bind aflatoxin M۱ was assessed in yoghurt. To this end, firstly, recombinant milk containing ۱۲% solids, non-fat skimmed milk powder was prepared. Next, the samples were spiked by aflatoxin M۱ using different concentrations (۱۰۰, ۵۰۰ and ۷۵۰ pg mL-۱). When the starter bacteria were added to the milk, the treated yeasts were added as well. The concentration of aflatoxin M۱ residue in the supernatant of the yoghurt samples after different storage times (۱, ۷, ۱۴ and ۲۱ days) was measured using the ELISA method. The results showed that all treatments containing viable, acid-, heat-, ultrasound-treated yeast and starter bacteria were able to adsorb aflatoxin M۱, and the ability of the treated yeast was significant as compared with the control (P< ۰.۰۵). Among the treated yeasts, the ability of the acid-treated yeasts was higher in toxin binding. Overall, it can be concluded that using S. cerevisiae for the biological adsorption of aflatoxin M۱ is effective in fermented dairy products.

کلمات کلیدی:

Biological adsorption, Cell wall, Fermentation, Mannan, Yeast