

TITLE: INFLUENCE OF SALT CONCENTRATION IN THE ACTION OF NATAMYCIN ON PATHOGENIC MICROORGANISMS

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ABSTRACT:

Pathogenic microorganisms can contaminate food through manipulation, cleaning and environmental control unsatisfactory. Besides adoption of good practice, the use of antimicrobials in food established an important step for the control of infectious diseases. Systems in which there is migration from the active ingredient to the food should be regarded only those compounds that are approved as food additives. The aim of this research was to verify the action of natamycin (Delvocid Plus®) on the development of *Candida albicans*, *Escherichia coli* and *Staphylococcus aureus* under different salt concentrations, as well as its effect on the association of *C. albicans* with *E. coli*, in order to verify its effectiveness under these conditions, since this preservative has been used in immersion baths in several dairy products in the country. Strains of *C. albicans* SC5314, *E. coli* ATCC 25922 and *S. aureus* ATCC12600 were inoculated in different salt concentrations (0.85%; 2%; 5%; 7.5%; 10%) and in peptone water and were treated with natamycin. These solutions were maintained at temperature of 12 ° C and the behavior of microorganisms assessed at 0, 24 and 48 hours (T0, T1 and T2). Each microorganism was evaluated singly as well as the combination of *C. albicans* and *E. coli*. As proposed by the survey it was concluded that the 0.025 % natamycin has no effect on *C. albicans* inoculated in salt concentrations below 5 %. Reductions in yeast counts occurred only after incubation for up to 24 hours and in high salt concentrations. The results obtained from the *E. coli* counts suggests that natamycin can interfere with their development even at concentrations that may be considered low (0.1 %) and saline conditions of 7.5 % to 10 %. *C. albicans* when in combination with *E. coli* showed susceptibility to the proposed treatments, but the reduction in the counts may be due to yeast low capacity to develop when in combination with other microorganisms. Association of natamycin with sodium chloride potentiates its antimicrobial action and can be economically used and expanded by industries.

Keywords: brine, *Candida albicans*, *Escherichia coli*, preservatives, *Staphylococcus aureus*.