

TITLE: PHENOTYPIC, GENOTYPIC AND TERMORRESISTENCE EVALUATION OF ISOLATED YEAST FROM MILK *IN NATURA*

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ABSTRACT: Milk is considered an excellent culture medium because it is conducive to the growth of several microorganisms. Ingestion of fresh milk may constitute a potential route of transmission of zoonoses, which justifies the need for microbiological analysis for human consumption. In this study, 23 samples of fresh milk type B, collected by manual or mechanical milking were collected and stored in collective refrigeration tanks of farms located in the Metropolitan Region of Natal and nearby. Twenty samples of fresh milk commercially traded in the city of Ceará-Mirim/RN were also analyzed. In order to establish the phenotypic, genotypic, quantitative and thermo-resistant characterization of yeasts isolated from fresh milk, we also sought to trace the susceptibility profile of the isolates to the antifungal agents. Positive samples were analyzed for quantification by count of Colony Forming Units (CFU). All isolated species were treated by slow pasteurization (62-64 ° C / 30 minutes) and fast (72-75 ° C / 20 seconds), as well as by boiling. Fifty yeast strains of the species were characterized: *C. tropicalis* 14 (28%), *C. parapsilosis* 7 (14%), *C. albicans* 6 (12%), *C. glabrata* 5 (10%), *C. krusei* 5 (10%), *Kluyveromyces marxianus* 5 (10%), *C. guilliermondii* 4 (8%), *C. rugosa* 1 (2%), *C. orthopsilosis* 1 (2%), *Pichia manshurica* 1 (2%), *Kodamaea ohmeri* 1 (2%). Five isolates showed resistance to the antifungal agents tested (flucytosine, amphotericin B and fluconazole). A global median of 37×10^2 CFU / mL was obtained, 33×10^2 UFC / mL in the milk collected by manual milking and 80.5×10^2 UFC / mL in the milk collected by mechanical milking. The milk in natura marketed in Ceará-Mirim/RN showed a median of 20×10^2 CFU / mL. Of the isolates submitted to heat treatment, 80% were resistant to fast pasteurisation and 60% to boiling, but none of them resisted slow pasteurisation. It was concluded that the milk collected through mechanical milking and stored in collective cooling tanks, presented higher rates of yeast contamination, compared to milk samples collected by manual milking and kept under the same storage conditions. Boiling and fast pasteurisation were not efficient for this purpose, however, slow pasteurisation showed 100% efficient for the elimination of the contaminating yeasts of the evaluated samples of milk.

Keywords: Milk, Yeasts, Candida, Pasteurization, Boiling.

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