

# MICROBIOLOGICAL EVALUATION OF MILK AND ITS DAIRY PRODUCTS FROM INDUSTRIES INSPECTED BY THE AGENCY OF AGRICULTURAL PROTECTION OF BAHIA

Santos, S.C.<sup>1</sup>, Ribeiro, R.D.X.<sup>1</sup>, Araújo, G.C.<sup>1</sup>, Costa, E.F.<sup>1</sup>

<sup>1</sup>Laboratory of Inspection and Technology of Milk and Dairy Products, Federal University of Bahia (Avenida Adhemar de Barros 500 - Ondina - 40170110 - Salvador - BA)

## **Abstract:**

Bahia is the tenth largest national producer of milk and the largest producer in the Northeast of the Brazil. The declared aim of the government of Bahia is to increase the milk production of the state in the upcoming years. Milk and its dairy products have high nutritional values and are valuable food sources, however their production requires high hygienical standards and controlling mechanism in order to avoid uncontrolled growth of microorganisms or the risk of food poisoning for the population. The aim of this work was to evaluate the microbiological quality of milk samples and its dairy products from industries inspected by the Agency of Agricultural Protection of Bahia, that is the body responsible for inspection services and control of hygienic and sanitary aspects of animal products. We analyzed 100 samples, of which 50 were pasteurized integral milk (PIM) and 50 dairy products (yogurt, butter, curd cheese and fresh cheese). Total and thermotolerant coliforms bacteria were quantified by the most probable number method using lauryl tryptose broth, brilliant green lactose bile broth, and E. coli medium. Mesophilic microorganisms, molds and yeasts were quantified by the colony forming units. In 37% of the samples legal threshold values for total coliforms were exceeded, and 46% for thermotolerant coliforms. Thirty-four percent of PIM samples showed rates also above for mesophilic and 40% of molds and yeasts for dairy products. Fresh cheese was the product with the highest contamination rate of both coliforms and molds and yeasts. Coliforms are important indicators for the sanitary quality of food and water. They are easily inactivated by heat treatment used in production. The abundance of mesophilic microorganisms, molds and yeasts are measured to gain a better idea about the the quality of the product and are useful parameters to assess good manufacturing practices. Our results indicate that the thermotolerant coliform group was the largest contaminant and that may be related to deficiency in hygiene practices and possible failure in the production process, making these foods unsuitable for human consumption and a risk to consumer health.

**Key words:** milk and dairy products, microorganisms, microbiological quality, consumers

**Development agency:** Agency of Agricultural Protection of Bahia