TITLE: INFLUENCE OF THE TOTAL BACTERIAL COUNT ON THE RAW MILK COMPOSITION.

AUTHORS: PRIVATTI, R.T.; SANTOS, S.G.; CHANG, A.; VAZ, A.C.N.; BALIEIRO, J.C.C.; VIDAL, A.M.C.; SARAN NETTO, A.

INSTITUTION: UNIVERSITY OF SÃO PAULO, PIRASSUNUNGA, SP (AVENUE DUQUE DE CAXIAS NORTE, 225, CEP 13635-900, Pirassununga-SP).

ABSTRACT

The Total Bacterial Count (TBC) is a parameter that assists in the evaluation of hygienic-sanitary quality of milk. The high microbial contamination of the raw milk indicates failure in the milking process and management of the cows, such as: intramammary infections, poor cleaning of utensils and containers for the collection, storage and transportation of raw milk, inadequate water for cleaning, temperature and time between harvest and improper processing; these factors directly affect the industrial processes in the dairy sector, in addition to generating risks to consumer health. High levels of TBC in milk can result in changes in the levels of lactose, protein, fat, total solids (ST), solids non fat (SNF) and minerals, causing declines in the yield of dairy products. However, studies that relate low levels of TBC from raw milk to nutritional composition are scarce in Brazil, so the objective of this research was to evaluate the influence of different levels of TBC on the content of macro-nutrients of raw milk. The raw milk samples were obtained from the dairy herd at the University of São Paulo in Pirassununga. Six raw milk samples were collected, which were divided into two treatments, according to the TBC level: low TBC (<50,000 CFU/mL; average 18.400 CFU/mL) and high TBC (≥50.000 and <100.000 CFU/mL; average 74.164 CFU/mL), three replicates per group. TBC was determined by the standard plaque count method. The macro-nutrients (fat, protein, lactose and SNF) of the raw milk samples were measured in the milk analyzer (Lactoscan MCC) in triplicate at 22°C, calibrated for the analysis of cow's milk. The pH was measured by the potentiometric method, the density using lactometer and the somatic cell count (SCC) using the Ekomilk Scan® equipment at 21°C. There was no influence of TBC on the level of macro-nutrients of the raw milk, pH and SCC level, however, there was a statistical difference ($P<0.05$) between treatments for density, where the low TBC group presented a mean density of 1030.2 g/mL and the high TBC 1030.7 g/mL, indicating a lower concentration of total solids in low TBC milk. Thus, it is concluded that the levels of TBC evaluated do not influence the nutritional composition of the raw milk.

Keywords: raw milk, total bacterial count, macro-nutrients.