

TITLE: COUNT OF *Staphylococcus aureus* AND ITS ENTEROTOXINS IN THE PRODUCTION PROCESS OF MILK SERUM DERIVATIVES

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ABSTRACT:

The composition of the milk is rich in nutrients that promote the development of microorganisms that end up passing to the whey through the cheese making process. Among these microorganisms, the presence of *Staphylococcus aureus* stands out. His research on food is carried out for two reasons: the first related to hygienic-sanitary quality control of food production processes, and the other related to public health, to confirm involvement in outbreaks of food poisoning. Such intoxication is caused by ingestion of toxins formed in the food, even at very low doses, these toxins are resistant to cooking and to proteolytic enzymes. Therefore, the present work had the objective of counting *Staphylococcus aureus* and the presence of its enterotoxins in the production of whey protein concentrate (WPC), whey permeate (WP) and concentrated whey (CW) in an industry of dairy products from the western region of Paraná. Ten whey productions were evaluated, being five productions at 6% of total solids and five productions at 18% of total solids, which involved the productions of WPC, WP and CW. For monitoring, ten different productions were evaluated, where information on the time of production of the raw material, transport and arrival, storage, storage temperatures was evaluated, and the counts of *S. aureus* were obtained, totaling thirty samples and verification of the presence of enterotoxins in ten productions totaling fourteen analyzes in the months of November 2015 to March 2016. For the counting of *S. aureus*, the direct plate counting method was used and the result was expressed as colony forming unit (CFU/mL). The qualitative determination of staphylococcal enterotoxins was performed by VIDAS® SET2 method by presence/absence. All microbiological quantifications of *S. aureus* obtained results below 10 CFU/mL, that is, there was no growth. In all assays, the presence of enterotoxins was not verified. According to the history, there is rarely growth of *S. aureus* in crude serum supplied to the company. The results show that the industry studied performs production efficiently with satisfactory hygienic-sanitary quality and that the raw material is of good quality.

Keywords: hygienic-sanitary quality, whey concentrate, whey permeate, whey protein concentrate