ACEROLA BY- PRODUCT IMPROVE SURVIVAL OF *Lactobacillus paracasei* 431 AND *Lactobacillu acidophilus* LA-5 UNDER *IN VITRO* SIMULATED GASTROINTESTINAL CONDITIONS

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Probiotics are defined as live micro-organisms with ability to provide many health benefits to consumers, such as reduction of diseases associated with gastrointestinal tract. However, to the probiotics succeed perform such functions, it is necessary to survive to the adverse conditions of the gastrointestinal tract. Some probiotics and bioactive compounds have the ability to improve this resistance. The acerola by-product contains fibers and bioactive compounds, which could be utilized in food formulation adding value to this product. The aim of this study was to evaluate the influence of acerola by-product on the survival of probiotics *Lactobacillus paracasei* 431 (L-431) and *Lactobacillus acidophilus* LA-5 (LA-5) under in vitro simulated gastrointestinal conditions. The by-product was used in the dry flour form. The evaluation of probiotic survival submitted to simulated gastric and enteric conditions was carried out using gastric in vitro model. The gastric condition (pH 2-2.5, in the presence of lipase and pepsin solutions), enteric I condition (pH 4.5-5.5, in the presence of pancreatin and bile solutions) and enteric II condition (pH 6.5-7.5, in the presence of pancreatin and bile solutions) was performed. Serial dilutions for each condition were prepared and inoculated into selective culture media and the results expressed in log.CFU^{-1}. A reduction of 4 and 5 log cycles during the passage of L-431 and LA-5 by stomach was observed. However, in the presence of the acerola by-product, a reduction of one log cycle was observed after the passage of both strains through the stomach. On the other hand, upon arriving in the enteric II phase, it was noticed a decline of 4 and 5 log cycles in the population of L-431 and LA-5 respectively, both in the presence and absence of the acerola by-product. In conclusion, the acerola by-product improved survival of the probiotics strains during the gastric phase, but didn't have significant influence in the enteric phase.

Keywords: probiotic, prebiotic, viability, fruit by-product.

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