**TITLE*:*** EFFECT OF JUÇARA PULP ADDITION ON THE *IN VITRO* FERMENTATION by *LACTOBACILLUS REUTERI* AND *BIFIDOBACTERIUM SPP*.

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**ABSTRACT:**

The fruit of the juçara palm is rich in bioactive compounds, such as phenolics, especially anthocyanins. Its pulp presents as an appropriate fermentative medium for probiotic bacteria, capable of bringing benefits to the host by the balance of the gastrointestinal microbiota. The probiotic microorganisms are saccharolytic, but the ability to use different carbohydrates varies among strains. In this study was investigated the use of freeze-dried juçara pulp and two different short-chain fructo-oligosaccharides (FOS and inulin) in the fermentation of probiotic cultures in basal medium. The basal medium was prepared without addition of carbohydrate sources. For the fermentation 1% (w/v) of the substrates tested were added. The strains used were *Lactobacillus reuteri* LR 92 (Sacco - Italy), *Bifidobacterium animalis* BLC1 (Sacco - Italy) and *Bifidobacterium animalis subsp. lactis* BB-12 (Christian Hansen -Denmark). Cell viability was performed at times 0, 6 and 24 hours in MRS agar. The pH was measured using the potentiometer Kasvi. The medium containing juçara pulp after 24 hours of fermentation by *L. reuteri* presented a 1 log cycle increase in the counts (of 6.2 log CFU / mL to 7.2 log CFU / mL). In the fermentation by *Bifidobacterium* the same medium allowed a 1.5 log cycle increase for the BB12 strain, but for the BLC1 strain there was a decrease of 1 log cycle in 24 hours. The inulin medium did not provide an increase in the counts during 24 hours for the strains of *L. reuteri* and BB12, however, for the strain BLC1 there was a reduction from 6.02 log CFU / mL at time 0 to 5.61 log CFU / mL at 24 hours. The FOS present in the basal medium was efficient for the growth of the *L. reuteri* strain in 24 hours, but did not promote the growth of both strains of *Bifidobacterium*. The pH results showed that the medium containing juçara pulp had an initial pH of 8.9, 8.8 and 8.6, reaching in 24 hours a pH of 7.44, 7.9 and 6.84 for *L. reuteri*, BLC1 and BB-12 respectively, due to the acids produced during fermentation. The medium containing inulin did not present a significant pH decrease and the medium with FOS showed a greater decrease when fermented by *L. reuteri*, strain for which the FOS presented greater influence on the growth. In conclusion the freeze-dried juçara pulp presented good results for the growth of probiotic strains in basal medium, presenting better results than inulin and FOS, reference prebiotics.

**Keywords:** growth of probiotic, FOS, lactic acid bacteria, probiotics, prebiotics

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