

**TITLE:** PROBIOTIC POTENTIAL OF MANGO FLOUR ON *Lactobacillus rhamnosus*

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**ABSTRACT:**

The use of food additives in fish feed has been an important strategy for improving animal health and consequently production performance. In this context, a useful alternative is the prebiotic, non-digestible substrate which provide fermentable carbon source for the growth of probiotic organisms in the gut. The use of the mango in animal feed is justified by amount of the residues generated from harvest to shelf, in addition to having significant carbohydrate contents. Therefore, the objective of this study was to evaluate the prebiotic effect of the mango flour on *Lactobacillus rhamnosus* LAC-32 isolate, which is safe and shows *in vitro* activity against *Aeromonas hydrophila*. The strain was initially cultured in De Man, Rogosa and Sharpe (MRS) broth at 37°C for 24 h, harvested by centrifugation, washed and resuspended in sterile saline to obtain cell suspension of 1.73 in optical density reading at 620 nm. This suspension had approximately 8 log CFU / mL in MRS agar. For the evaluation of the prebiotic effect generated by the *in vitro* growth of *Lactobacillus*, different treatments (mango flour (1 and 3%), cellulose (1 and 3%) and control group) were used. The mango flour used (1 mm - Tommy Atkins) was obtained from the fruit with peel and pulp devoid of the seed after drying at 55°C in an oven presenting: 2.44 ± 0.5% starch, 2.40 ± 0.09% fructose, 5.4% fructose / glucose and 9.05 ± 0.00% sucrose. An aliquot of the bacterial suspension was added to sterile tubes containing MRS broth with the respective flours and incubated under anaerobic conditions for 48h at 37°C. Then, 1000 µl of each mixture were serially diluted in sterile saline, and subsequently, 100 µl of aliquots were added to the MRS agar by using the pourplate technique for viable cell counting. Therefore, the results of this study showed that only mango flour (3%) had a prebiotic potential against the *Lactobacillus* strain presenting 1.78 x 10<sup>8</sup> CFU / mL more than the control group, which was inoculated only in MRS broth. Thus, it may be concluded that this additive has the potential to serve as an alternative to the use of antibiotics used in the treatment, control or prevention of diseases, since when incorporated into fish feed might favor performance and enhance the health of animals.

**Keywords:** prebiotic, probiotic, susceptibility

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