Viability throughout storage of potential probiotic strains, when in contact with fruit pulps

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Production of functional food products has been, over the past years, a trend in the food industry. Functional foods are foods that, besides the nutritional value, promote beneficial effects in one or more functions of the human organism. The beneficial effects can be promoted by several different components of the food products, like antioxidant compounds, prebiotics, probiotics, among others. Probiotics are "live microorganisms, which when consumed in adequate amounts, confer a health effect on the host". A daily intake of 10^8 colony forming units (CFU) of probiotic bacteria has been suggested for a beneficial effect to be observed. The majority of the food products containing probiotics have been dairy and dried products, since they provide a favourable environment for the maintenance of viability. However, other food products have been tested/studied as vectors for probiotic delivery. Among such products are fruit based products such as juices. In this research work, the viability throughout storage of 6 potential probiotic strains (4 *Leuconostoc* and 2 *Lactobacillus*) isolated from different fruits, when in contact with fruit pulps, was studied. Eleven fruit pulps were inoculated with each of the probiotic strains and stored at 37 ºC for 7 days, and at 4 º C for 28 days, and viability was assessed. Results showed that, when the pulps were stored at 37 ºC, after 7 days, only avocado was capable of sustaining viable cell numbers high enough for the production of a functional food product. Storage at 4 ºC showed, as expected, much better results. In almost every fruit pulp, every potential probiotic strain presented, after 28 days, high survival percentages, and some fruit pulp/probiotic strain combinations presented percentages above 95%. These results show that storage at 4 ºC is, between the two temperatures tested, the most adequate for maintenance of probiotic viability. Results also showed that fruit pulps, when stored at refrigerated temperature, are capable of sustaining probiotic viabilities in the levels needed for the production of functional food products.