

ABSTRACT

Although probiotics are currently available in mainly dairy products, the interest in the cooperation of the probiotics in other foods has been increasing. The probiotics delivery system apart from dairy products has been concerned in this research aimed to developing probiotic foods by fortifying the probiotics in partially dried fruits using vacuum impregnation technique. Fruit (guava and papaya) pieces were impregnated in a vacuum pressure of 50 mBar with three types of impregnated solutions as extracted fruit juices, 15°Bx extracted fruit juices and 30°Bx extracted fruit juices containing 10^{10} cfu/mL of *Lactobacillus casei* 01 for 5, 10 and 15 min. After impregnation the fruit samples contained the probiotics around 10^8 or 10^9 log cfu/g. In addition, the impregnation time and the soluble solid contents of the impregnated solution had affected the vacuum impregnation parameters such as impregnated sample volume fraction (X) and the effective porosity (ϵ_e). No changes in volumetric deformation (γ) of the fruit pieces occurred after impregnation. The soluble solid contents also influenced on the level of probiotics in the products. Too low or too high in solid contents reduced the viable counts of the probiotics. In order to increase the storage stability of the products, the impregnated guava and papaya were dried at 40°C for 36 h and kept at refrigerated temperature for 4 weeks. The viable cell counts of *L. casei* 01 in both guava and papaya were approximately 10^7 log cfu/g, which reached the therapeutic minimum level in the dairy products.