

Production of probiotic pomegranate juice by Lactic acid bacteria

Ankita Singh, B.K. Dwivedi, Himanshu Dwivedi and Raj Nandini Solanki

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ABSTRACT : The present study was undertaken for production of probiotic pomegranate juice through its fermentation by two strains of lactic acid bacteria: *Lactobacillus plantarum* and *L. acidophilus*. Pasteurisation of freshly prepared pomegranate juice at 80°C for 15 or 20 min decreased the microbial population to below the detection limit. Fermentation was carried out at 37°C for 72 hrs. Microbial population, pH, titrable acidity, and sugar (glucose) were measured during the fermentation period and viability of all the strains was also determined during the storage time at 4°C within week. Pasteurizations were generally used to eliminate or reduced the contaminant microorganisms. The main requirement of the heat treatment was to ensure the microbial safety of the product. The results indicated that *L. plantarum* and *L. acidophilus* decreased the pH sharply at initial stages of fermentation, sugar consumption was also higher and better microbial growth was also observed for these two strains during fermentation. *L. acidophilus* showed higher viability during the storage time than *L. plantarum*. Viable cells remained at their maximum level within 2 weeks but decreased dramatically after 3 weeks. Pomegranate juice may prove to be a suitable media for production of a probiotic drink.

Key Words : Pasteurization, pomegranate juice, probiotic, fermentation, *Lactobacillus plantarum*, *Lactobacillus acidophilus*.