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Incorporation of natural antioxidants for shelf life enhancement of probiotic vegetable juice

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The present study examined the enhancement of survival period of probiotic bacteria in vegetable juice by addition of natural antioxidants. The juice was prepared by carrot and tomato juice blending (1:1) and was pasteurized before probiotic organisms were incorporated. The strain of probiotic bacteria used in this study was Lactobacillus acidophilus. This probiotic bacteria was inoculated into the prepared juice with added vitamins and antioxidants, namely green tea extract and ascorbic acid. The probiotic juice without any additives was used as a control. The viability of the probiotic organisms was assessed at an interval of seven days using Total plate count (TPC) technique. It was observed that probiotic bacteria did not survived well in the extreme acidic condition of the vegetable juice. However, when this juice was incorporated with ascorbic acid (Vit. C) and green tea extract, it was found that, with addition of both these functional ingredients better survival of probiotic bacteria was established. The probiotic vegetable juice containing green tea extract, vitamin C and control showed the same initial population of 8.24 log CFU/mL at 0 day, and after 35 days of storage an average viability of 7.44 log CFU/mL, 6.54 log CFU/mL, and 3.32log CFU/mL respectively, was noticed. Therefore it may be concluded that the natural antioxidants added in the vegetable juice enhanced the quality and the shelf-life by maintaining the viable counts of the probiotic bacteria in the product.

Biography

Aradhita Ray is a Professor in the Department of Food Technology, Guru Jambeshwar University of Science and Technology, Hisar Haryana, India. She is possessing sixteen years of extensive University teaching and research experience in various areas of Food science and technology. She has already supervised three Ph.D., ninety M.Sc. (Food technology) and twenty M.TECH (Food Engineering) students and having 30 research publication in refereed journals and 35 papers in various Conference proceedings to her credit till date. Current Research Interests: New product development from indigenous fruits, Minimal processing and Active Packaging of fruits, studies on various phyto-chemicals of fruits and vegetables, Fruits and vegetable waste utilization.

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