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The Influence of hurdle technology on vitamin C content in star fruit (*Averrhoa carambola*) juice during storage

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Hurdle technology was applied to star fruit (*Averrhoa carambola*) juice and ascorbic acid content in the juice was investigated during storage. The juice was stored in a refrigerator for 90 days at 4°C. The matured fruit was collected from the local market in Jorhat town and study was conducted in Assam Agricultural University, Jorhat. Six treatments and a control were applied to the juice in the form of hurdle which includes UV-C irradiation dose of 3.525 J/m² using (UVP UVX™ Digital radiometer) under laminar air flow cabinet, pasteurization at 78°C and potassium sorbate (200, 150 and 100ppm) respectively. Treatments were T₁ (200ppm+ UV-C), T₂ (150ppm+ UV-C), T₃ (100ppm+ UV-C), T₄ (200ppm+ UV-C + pasteurization), T₅ (150ppm+ UV-C + pasteurization) and T₆ (100ppm+ UV-C + pasteurization). The estimation of vitamin C was performed by a titrimetric method using 2,6-Dichlorophenol indophenol and analysis

of variance was done by using CRD (Complete randomized design) with 0.05 probability level. Initially, the ascorbic acid content in control was 37.62 mg/100ml wherein T₁, T₂, T₃, T₄, T₅, T₆ were found (34.63, 34.14, 33.86, 31.35, 30.83 and 30.46 mg/100ml) respectively. During storage the ascorbic acid content was decreasing significantly (p<0.05) in control 13.19 mg/100ml and among the treatments it was (22.91, 20.73, 20, 18.74, 20.48 and 19.33 mg/100ml) the decreasing ascorbic acid in percentage was 65% in case of control where others are (36%, 39%, 41%, 40%, 33% and 46%). T₁ was found to be the best among the other treatment which was able to retain the maximum amount of ascorbic acid during storage where T₅ was also found least decrease in percent. Moreover, both the treatment T₁ and T₅ can be used for the commercial production of star fruit juice.

Biography

Niranjay Kumar Sahu has completed MSc (Agri.) in Food Science and Technology at the age of 26 from Assam Agricultural University and published one paper in International Journal of Pure and Applied Bioscience.

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