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 780°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, 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 T₆ 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.