

Stability of a dairy-based electrolyte replenishment beverage

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Summary

This Technical Research Communication describes the commercial sterility and shelf life evaluation of a ricotta cheese whey-based electrolyte replenishment beverage (isotonic beverage). Three batches of isotonic beverage were processed applying different binomials: B1 (95 °C/50 s), B2 (90 °C/40 s) and B3 (85 °C/30 s). One third (1/3) of the packages, produced in each batch, was stored at -18 °C (control samples) and two thirds (2/3) at 25 °C. Samples of the three batches were subjected to a commercial sterility test to evaluate the microbiological stability of the product. Hedonic scale tests were used to estimate the shelf life of the beverage. Average scores greater than 5 (in a 9-point hedonic scale) and percentage of approval greater than 60 % were both used as threshold values for evaluating the overall impression the drink. The pH values, titratable acidity and soluble solids were determined at the beginning and the end of the shelf life study. The pH values ranged from 2.97 to 3.21, titratable acidity from 0.358 to 0.464 g citric acid/100 mL and soluble solids from 6.35 to 6.40 °Brix. All batches achieved the commercial sterility and had their shelf lives limited by the decrease of the sensory acceptability of the beverage, estimated in 100 (B1), 128 (B2) and 153 (B3) days. The milder binomial (85 °C/30 s) provided the longer shelf life, compatible with an eventual demand of the consumer market. The use of ricotta cheese whey in the production of a shelf stable sports drink is a technically feasible alternative, which adds value to a residue of the dairy industry.