Influence of osmotic pretreatment on dried cashew apple acceptability

P.M. Azoubel*, R.V. Tonon², G.C. Antonio², L.E. Kurozawa², F.E.X. Murr³

¹Embrapa Tropical Semi-Arid, Brazil, ²State University of Campinas, Brazil

Conventional dehydration methods based on hot-air drying are widely used but they can deteriorate the quality of the final product. Osmotic dehydration, which consists in immersing the food in hypertonic solution, is a common pretreatment used before air drying to improve its nutritional, functional and sensorial properties (1).

In this work, the influence of osmotic pretreatments on dried cashew apple acceptability was evaluated. The nuts were separated manually and the cashew apples were cut into 0.5 cm thick slices (5 cm average diameter). Osmotic dehydration in sucrose and corn syrup solids solutions was carried out at 34°C and agitation of 80 rpm for 165 min (2). Drying was carried out in a continuous flow fixed bed dryer (air velocity of 2.1 m/s) at 60°C. Dried samples with and without osmotic pretreatment were evaluated by 30 non-trained panelists for appearance, color, taste and aroma on a 9-point hedonic scale (1= “disliked extremely”; 9= “liked extremely”). Samples were randomly coded with three-digit numbers and their order of presentation was completely randomized for each panelist. Partitioned booths with fluorescent lighting were used for evaluation. Results were evaluated by the analysis of variance, followed by Tukey test (p ≤ 0.05). Samples pretreated in corn syrup had test scores closer to the untreated dried fruit.

Products pretreated in sucrose solution had the highest scores, except for aroma. This might be due to sugar uptake (solid gain around 8% and 2% for samples immersed in sucrose and corn syrup, respectively) and the protective action of saccharides, which increases the stability of pigments during processing (3) and contributed to the reduction of typical astringency caused by tannins in fresh fruit (4). In addition, some of the acids are removed from the fruit during pretreatment (5), so a blender and sweeter product than ordinary dried fruits could be obtained.

References:

Keywords: Cashew Apple, Osmotic Dehydration, Drying, Acceptance