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Optimization of process parameters on osmotic dehydration of yellow sweet pepper *(Capsicum annum. L)* using response surface methodology

Sachidananda Swain Central Agricultural Research Institute, India

O smotic dehydration is a cost saving, novel pre-treatment step widely used for the partial removal of water from plant tissues by immersion in a hypertonic (osmotic) solution. The chemical composition, nutritional, sensory, functional properties and organoleptic characteristics of osmo-dehydrated foods improves without changing its integrity which result in high quality products that can undergo subsequent processing to get the desired final product. In this regard, a study was undertaken on osmotic dehydration of yellow capsicum using Central Composite Rotatable Design (CCRD) with respect to salt concentration (0-20%), sugar concentration (30-70°Brix) solution to sample Ratio (SSR) (1-9), temperature (30-70°C), RPM (0- 200) and process duration (30-150 min). The analysis of results indicated that all the process variables had a significant effect on all the responses at 1% level of significance (P < 0.001). A good correlation (R^2 >0.88) between process parameters and responses were obtained having coefficient of variation (CV<10) except total solid gain. Again, Response Surface Methodology (RSM) which is an effective tool for optimizing a variety of food processes having the advantage of reduced number of experimental runs providing sufficient information for statistically valid results, was used optimization of process above independent parameters. The possible goals were maximum weight loss, maximum moisture loss and minimum solid gain. The optimum condition were found to be Salt(10.95 %), SSR(4.49), temperature(53.35°C), sugar(58.37°Brix), RPM(100) and time(120 min).

Biography

Sachidananda Swain completed his both Master and Doctoral degree from Indian Agricultural Research Institute (IARI), New Delhi. He joined as a scientist (Agricultural Structure and Process Engineering, (ASPE)) at Central Agricultural Research Institute (CARI), Port Blair in 2010 and working for post harvest management and value addition of Agri-Horticultural produces in the Islands.

sachi9463@gmail.com

Comparative studies between microwave and conventional pasteurization of fresh aonla juice

Sandrayee Brahma¹ and S. Anandakumar² ¹IIT Delhi, India ²IICPT, India

A onla (*Emblica officinalis Gaertn*), known as Indian gooseberry, is an important fruit crop of tropical and subtropical region of India. It is one of the oldest Indian fruits and considered as "*Wonder fruit for health*" because of its unique qualities and gained wide popularity all over the world for its medicinal properties. The ascorbic acid content of fresh Aonla fruit is said to be the highest among all fruits next only to Barbados cherry. The fresh anola fruits are generally not consumed due to their high astringency but it has got great potential in processed forms like aonla squash, aonla syrup, aonla jam, aonla candy, and ready to serve aonla juice.

Fruit juices play an important role in a healthy diet because they provide a variety of nutrients found naturally in fruits. Pasteurization of juice by using microwaves has been found to be an alternative to conventional thermal pasteurization. Microwave pasteurization offers similar benefits to conventional methods, but with an improved product quality and minimal exposure to thermal energy. Our study indicates that microwave pasteurization of fresh amla juice is better in terms of biochemical contents and microbial load as compared to conventional pasteurization.

Biography

Sandrayee Brahma has completed her M.Tech in Food Process Engineering from Indian Institute of Crop Processing Technology (IICPT), Thanjavur, Tamil Nadu in 2011. She was a visiting research scholar during her M.Tech in the Dept of Food Science & Tech, University of Nebraska-Lincoln, U.S.A for 4 months. Her research topic was *"Studies on Heating Characteristics of Different Food Stuffs in Microwave Ovens"*. Currently, she is a Ph.D. Scholar in the Centre for Rural Development and Technology, IIT Delhi.

mumli2k2@gmail.com