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Optimization of process parameters during raisin preparation in osmotic dehydration of grapes

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To develop a product "raisin" of high consumer acceptability and medicinal properties, the grapes of Thompson seedless variety were first osmotically pre treated and then convectively dried at constant air temperature of 55 °C to safe moisture level of 16% wet basis. Different experimental combinations of osmotic process parameters i.e. sugar concentration, solution temperature and immersion time were tried at constant fruit to syrup ratio 1:4 using CCD of experiments. Response surface methodology (RSM) was used to investigate the effect of sugar concentration (60-70°B), solution temperature (40-50°C) and immersion time (6-8 h) on the water loss, solid gain, overall acceptability, ascorbic acid, acidity and total sugar. An analysis of variance (ANOVA) revealed that among the process variable temperature and concentration has remarkable effect on responses. Optimization of the osmotic dehydration process was performed to result maximum water loss, solute gain, overall acceptability and total sugar and minimum acidity and ascorbic acid. The optimum process parameters obtained by computer generated response surfaces, canonical analysis and contour plot interpretation were: 70 0B of sugar concentration, 50°C of solution temperature and 8 h of immersion time. The raisin developed under optimized condition was of high consumer acceptability and were in close agreement to the predicted quality values.

Biography

Bhagyashree N. Patil has completed her M. Tech. at the age of 23 years from Dr. PDKV, Akola. Presently she is working as Asstt. Professor, Department of APE, Dr. PDKV, Akola. She has published 08 papers in reputed journals and presented paperin four National conference. One peper accepted in International conference for oral presentation.

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