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Jamun Juice Extraction Using Commercial Enzymes and Optimization of the Treatment with the Help of Physicochemical, Nutritional and Sensory Properties

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Abstract : Jamun (Syzygium cuminii L.) is one of the important indigenous minor fruit with high medicinal value. The jamun cultivation is unorganized and there is huge loss of this fruit every year. The perishable nature of the fruit makes its postharvest management further difficult. Due to the strong cell wall structure of pectin-protein bonds and hard seeds, extraction of juice becomes difficult. Enzymatic treatment has been commercially used for improvement of juice quality with high yield. The objective of the study was to optimize the best treatment method for juice extraction. Enzymes (Pectinase and Tannase) from different stains had been used and for each enzyme, best result obtained by using response surface methodology. Optimization had been done on the basis of physicochemical property, nutritional property, sensory quality and cost estimation. According to quality aspect, cost analysis and sensory evaluation, the optimizing enzymatic treatment was obtained by Pectinase from Aspergillus aculeatus strain. The optimum condition for the treatment was 44 ^oC with 80 minute with a concentration of 0.05% (w/w). At these conditions, 75% of yield with turbidity of 32.21NTU, clarity of 74.39%T, polyphenol content of 115.31 mg GAE/g, protein content of 102.43 mg/g have been obtained with a significant difference in overall acceptability.

Keywords : enzymatic treatment, Jamun, optimization, physicochemical property, sensory analysis
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