

CLARIFICATION OF CARAMBOLA FRUIT JUICE USING A COMMERCIAL ENZYME - OPTIMIZATION OF CONDITIONS

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ABSTRACT

In the Central Composite Design, the method employed was Response Surface Methodology, which is used in the analysis for optimizing the conditions of enzymatic treatment, on physical characteristics. Pectinase was used to treat carambola juice at various enzyme concentration i.e., 0.01 – 0.1%, Incubation time of 30 to 120 mins and incubation temperature of 30 to 50°C. Central Composite Design of second order was employed that had treatment conditions as independent variables, which has a major impact on physical characters such as turbidity, viscosity and filterability. With coefficient of determination R^2 , the significant regression models are describing the changes on the physical characters, with respect to the independent variables that were established. According to the response surface methodology and the plots, the optimum treatment conditions for clarification of carambola juice were incubation temperature of 40°C, incubation time of 75 mints and enzyme concentration of 0.055%.

KEYWORDS: Enzymatic Treatment, Turbidity, Viscosity & Filterability