

**Optimasi Proses Pemanggangan *Chiffon Cake* Substitusi Tepung Biji Nangka
Menggunakan *Response Surface Methodology***

*Optimization the Baking Process Chiffon Cake Substituted by Jackfruit Seed Flour
Using Response Surface Methodology*

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ABSTRACT

Chiffon cake is a healthy food that can increase crude fiber content using jackfruit seed flour as a substitute for wheat flour. This research aims to create an optimum baking process of chiffon cake substituted by jackfruit seed flour using Response Surface Methodology (RSM) with Central Composite Design based on Design Expert 13. The jackfruit seed chiffon cake was optimized through experimenting two factors. The first factor is baking duration and the second is baking temperature. The four responses observed in this research are water content, crude fiber content, specific volume, and texture. The model result for water and fiber content was quadratic model while for specific volume and texture was linear model. The R-square (R^2) value of water content is 0,6824 and the fiber content value was 0,961. Meanwhile, the R-square (R^2) specific volume value was 0,7714 and the texture was 0,7281. Suggested optimum conditions for the baking process of chiffon cake substituted by jackfruit seed flour was 70 minutes at a temperature of 168.005°C, which was predicted to produce a water content of 40.105%, a fiber content of 7.217%, a specific volume of 4.117 cm³/gr, and a texture of 8.309 gF. The validation test was carried out three times with an actual average value of water content of 40.723%, fiber content of 6.619%, specific volume of 3.837 cm³/gr, and texture of 7.768 gF. The one sample T-Test test explained that the actual average value was not significantly different from the predicted value resulting in a response accuracy of 101.54%, 91.72%, 93.21% and 93.49% respectively.

Keywords: *Chiffon Cake, Response Surface Methodology, Jackfruit Seed Flour.*