

**Penggunaan *Simplex Lattice Design* pada Optimasi Formula Bolu Kukus
Substitusi Tepung Okra untuk Meningkatkan Aktivitas Antioksidan
(*Application of Simplex Lattice Design in Optimizing Steamed Cake Formula
Substituted with Okra Flour to Increase Antioxidant Activity*)**
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ABSTRACT

Okra is high in bioactive substances. Okra fruit may be processed more easily into flour than other products. The usage of wheat flour can be decreased and the product's nutritional content can be increased by substituting okra flour for it in steamed cake. The goal of this study is to find the best combination of wheat flour (70–90%) and okra flour (10–30%), with the optimisation target of maintaining the specific volume of steamed cake and enhancing antioxidant activity. The optimisation findings projected a specific volume value of 2.511 cm³/gr and antioxidant activity of 73.145% for a formula consisting of 90% wheat flour and 10% okra flour, with a desirability value of 0.848. The validation findings suggested an antioxidant activity value of 72.211% and a specific volume value of 2.58 cm³/gr. A one-sample t-test confirmed that the specific volume value of 0.626 and antioxidant activity of 0.088 (>0.05) were not significantly different between the predicted and actual values. With 97,32% for specific volume and 98.72% for antioxidant activity, respectively, the accuracy of both results was certainly over 80%.

Keyword : *antioxidant activity, formula optimization, steamed cake, simplex lattice design, okra flour*