**Optimasi Formula Tepung Komposit Jagung dan Labu Kuning pada *Muffin*
Menggunakan Metode *Simplex Lattice Design* (***Optimization of Corn Flour and
Pumpkin Flour (Cucurbita moschata) Formulation in Muffins Using Simplex
Lattice Design***)**
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ABSTRACK

Muffin is a wheat-based bread product that is practical and delicious, but has a low fiber content due to the low fiber content in wheat flour. This study aims to develop the optimal formula of muffins with the addition of corn flour and pumpkin flour (Cucurbita moschata) as an alternative to wheat flour to increase food fiber content. The Simplex Lattice Design (SLD) method was used to determine the optimal proportion of corn flour, pumpkin flour, and wheat flour based on the parameters of texture, specific volume, and crude fiber content. The results showed that validation of the optimal formula consisting of 60% corn flour and 20% pumpkin flour resulted in an actual mean value for texture of 5.00 with a prediction of 5.16 and an accuracy of 96.89%. For specific volume, the average actual value was 2.65 with a prediction of 2.80 and an accuracy of 95.71%. Crude fiber content has an average actual value of 9.238 with a prediction of 9.513 and an accuracy of 97.95%. Validation using one sample t-test showed no significant difference between predicted and actual values. This means that the prediction model developed is able to produce muffins with good texture, high specific volume, and increased fiber content. To determine the acceptance of muffin products with the addition of corn flour and pumpkin flour to consumers, a hedonic test was conducted. Overall, the hedonic test results showed.

Kata kunci: *design expert, muffin, optimalization, simplex lattice design, corn flour, pumpkin flour*