

## ABSTRACT

*The purpose of this research is to generate optimal formulation using Design Expert D-Optimal Method in the making of ulen fries which uses edam cheese as substitution. The desired benefit of this research, is increasing the economic value of white glutinous rice by doing product diversification of white glutinous rice's processed product, which is ulen fries with the addition of cheese for the sake of improving the nutritional value of ulen fries, thus promoting it the useful information which can be passed to the public and the food industry to improve and develop white glutinous rice's processed products further.*

*The research method includes a preliminary study of preparing white glutinous rice flour and the primary research involves the early stage of submitting the raw materials of the formulations that are divided into two variables: the relative variable and the fixed variable. Relative variable will be incorporated into the Design Expert D-Optimal Method program using Mixture Component menu, and then 11 formulations will be acquired to be chemically analyzed and the ensuing organoleptic will be including fat, carbohydrates, protein, color, flavor, aroma, and texture.*

*The Design Expert D-Optimal Method program can determine the optimal formulation in the manufacturing process of edam cheese ulen fries, providing predictive assessment chemically of the following contents - carbohydrate content of 30.81%, fat content of 11.07%, and protein content of 12.79%, while in organoleptic attributes of color of 4.4%, the attribute flavor of 4.3%, the attributes aroma of 3.9%, and 4.4% of texture attributes. Thus Design Expert recommends the chosen formulation based on approaching figure of 1.00 desirability, which is the formulation with the percentage of glutinous rice flour white 51.23%, cheese 18.35%, and grated coconut 16.40%.*