

## ***ABSTRACT***

The purpose this research is to characteristic (flavour, texture, and odor) of Spreadable Analogue Cheese product by the substitution of *Edam* cheese and Cheddar cheese, and also addition of Soy Protein Isolate. Beside, this research is also to determine the best formulation of Spreadable Analogue Cheese process making using the Design Expert Application with Design D-optimal method.

This research was done within two phases. The preliminary phase is to determine the objective function, dependent and independent variables in the process of Spreadable Analogue Cheese making which are put in the application. The application generates the desired sensory and chemical characteristics. The second phase is to determine the best formulation of Spreadable Analogue Cheese. The respon in this research are chemical responses (including amino acids, fatty acids, and moisture content analysis), physical response (including viscosity), and sensory response (including aroma, flavor, texture, spreadability, and spoonability)

The Spreadable analogue cheese is made from *Edam* cheese and Cheddar cheese, and the thickeners (Soy Protein and corn starch). The application provides 11 formulations. The best formulation based on desirability (score 1) is the formulation which contains 11,66% *Edam* Cheese, 9,75% Cheddar Cheese, 3,84% Soy Protein Isolat, 5% corn starch, 23% vegetable oil, 43,25% water, 1% salt, 2% emulsifier (25% Trisodiumcitrate, 75% disodiumphospate), 0,5% acetic acid, and 0,02% distilled monoglyceride.

The responses results are 0,84% for fatty acids, 0,19% for amino acids, 47,64% for moisture contect, 385,44 d.pas for viscosity, 3,97 for aroma attribute, 3,64 for flavor attribute, 3,95 for texture attribute, 4,18 for spreadability, and 4,09 for spoonability.

Keyword: Spreadable analogue Cheese, Cheese, optimization