

# Formulation and Optimization by Experimental Design of Low-Fat Mayonnaise Based on Soy Lecithin and Whey

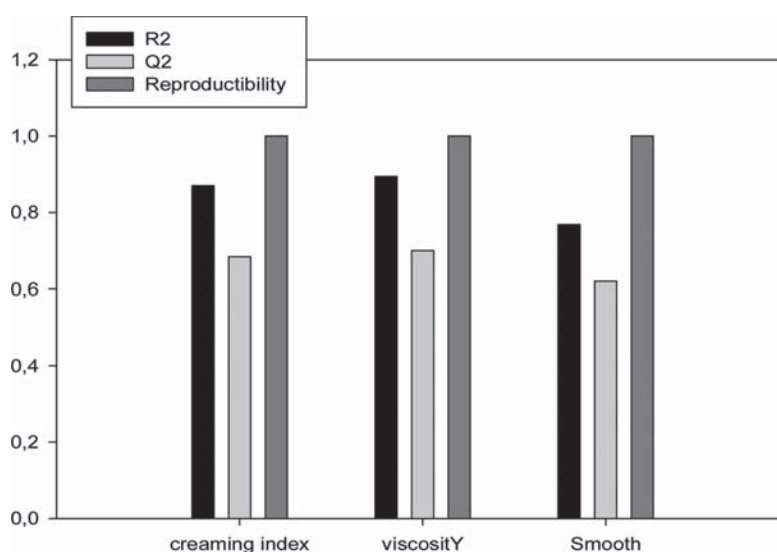
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## GRAPHICAL ABSTRACT



The main objective of this study is to develop a new formula for a diet mayonnaise-like sauce without cholesterol. Emulsifying power is provided by the use of soy lecithin and the total fat content was limited to 16%. Droplet size measurement of employed mayonnaise samples at different times show that the largest diameter of fat does not exceed 18.5  $\mu\text{m}$  with a yield stress of 56.1 Pa. Results of stability to centrifugation reveal that the absence of the supernatant oily layer ensures the stability of the emulsion. Using the experimental design method, the number of trials can be limited to a number of 16 experiments, and best formulation of the mayonnaise (without cholesterol) was obtained.

**Keywords** Dietary sauce, experimental design, low-fat mayonnaise, soy lecithin, whey

## 1. INTRODUCTION

It is known that fats are essential for a healthy body and can be a source of energy and transport vital nutrients. Fats also play an important role in food manufacturing and cooking, making our foods taste good. For good health, it is necessary to pay attention to both the total amount and the type of fats in the diet. An excessive consumption of food fats can lead to health problems such as high blood pressure and obesity.

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