

**PENGEMBANGAN DAN OPTIMASI PENGEMBANGAN PRODUK
MINUMAN BERBASIS EDAMAME MENGGUNAKAN METODE
RESPONSE SURFACE METHODOLOGY (RSM)**

*Development and Optimization of an Edamame-Based Beverage Product Using
Response Surface Methodology (RSM)*
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ABSTRACT

Edamame milk has great potential as a high-nutrition functional beverage, but faces challenges with low emulsion stability and a beany flavor. This study aims to optimize maltodextrin concentration (2.93%–17.07%) and processing temperature (55.86 °C–84.14 °C) using Response Surface Methodology (RSM) with a Central Composite Design. Results indicated that color, viscosity, and texture characteristics followed a linear model, while stability and other sensory scores fit a quadratic model. The optimum conditions were achieved at 10% maltodextrin and a 70 °C processing temperature, yielding a perfect desirability value of 1.000. Laboratory verification proved this model highly valid with low percent errors (0.27%–0.68%), making it ideal for MSME application.

Keywords: Edamame milk, maltodextrin, processing temperature, optimization, Response Surface Methodology (RSM).