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Judul Artikel Ilmiah : Optimasi Formula MP-ASI Bubuk Sumber Protein dengan Substitusi Hidrolisat Protein Ikan dan Tepung Kacang Hijau menggunakan *Response Surface Methodology*

Penulis Artikel Ilmiah : Yosi Irene Putri, Syaiful Anwar, **Diana Nur Afifah**, Ekowati Chasanah, Yusro Nuri Fawsy, Pujoyuwono Martosuyono

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Semarang, 10 Januari 2020
 Penilai I



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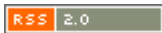
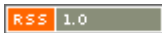
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Abstract

Abstrak

Penelitian ini bertujuan untuk mengoptimalkan formulasi bahan baku sumber protein pada Makanan Pendamping ASI (MP-ASI) untuk mendapatkan kandungan protein tertinggi. Metode eksperimen yang menggunakan 3-faktor 1-respon dengan menggunakan *Response Surface Methodology* (RSM). Tepung susu skim, bubuk Hidrolisat Protein Ikan (HPI), dan tepung kacang hijau dengan berbagai konsentrasi digunakan sebagai sumber bahan baku dan kandungan protein digunakan sebagai respon. Hasil dari respon dianalisis dengan analisis varians (ANOVA) dan melihat nilai *desirability* (optimasi terbaik). Formula MP-ASI dari hasil optimasi protein terbaik kemudian dilanjutkan dengan analisis proksimat. Hasil penelitian menunjukkan bahwa jenis bahan baku memiliki pengaruh terhadap kandungan protein ($p < 0,05$). Tiga formula MP-ASI bubuk terbaik dari hasil optimasi adalah memiliki nilai *desirability* sebesar 0,714–0,791, kadar protein sebesar 18,72–19,38 g, kadar air berkisar 7,14–7,34 g, kadar abu berkisar 2,95–3,10 g dan kadar lemak berkisar 5,44–5,82 g dalam 100 g bubuk MP-ASI. Kesimpulannya, formula MP-ASI dapat ditentukan berdasarkan kadar protein tertinggi dan rasio bahan baku mempengaruhi kandungan nutrisi pada produknya

Optimization of Formula for High Protein–Complementary Food using Fish Protein Hydrolysate and Mung Bean Flour by Response Surface Methodology

Abstract

This research aims to optimize the formula of material for protein sources to get the optimum response (based on protein content). The method of 3-factor and 1-response was used using Response Surface Methodology (RSM) to analyze the materials of skim milk flour (g, X1), Fish Protein Hydrolysate (FPH) flour (g, X2), and mung bean flour (g, X3) as independent variable/factor, whereas protein (g, Y) was used as dependent variable /response. The results were analyzed with variant analysis (ANOVA) and observed its desirability value to obtain best optimum value. The best of formula was examined its nutrition value using proximate analysis. This research showed that independent variables (X) had significant effect to the dependent variable (Y) ($p < 0.05$). The best three formulas of high–protein complementary food had desirability value starting from 0.714 to 0.791. The proximate test resulted protein content of 18.72–19.38 g, moisture content of 7.14–7.34 g, ash content of 2.95–3.10 g, and fat content of

5.44–5.82 g. In conclusion, the best formula could be determined successfully using combinations of protein sources.

Keywords

protein optimization; complementary food of instant flour; fish protein hydrolyzate (FPH); Response Surface Methodology (RSM)

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