

ABSTRAK

Konsumsi rata-rata *cookies* termasuk cukup tinggi di Indonesia dan umumnya *cookies* dibuat dari terigu. Potensi peningkatan konsumsi *cookies* dapat menyebabkan ketergantungan pangan berbasis terigu. Ketergantungan tersebut perlu dikurangi dengan meningkatkan konsumsi dan produksi bahan pangan lokal. Mocaf yang terbuat dari singkong merupakan salah satu alternatif substitusi terigu. Pada penelitian sebelumnya, telah ditemukan alternatif penggunaan mocaf pada beberapa produk diversifikasi salah satunya *cookies*, tetapi biasanya produk memiliki kadar protein rendah. Oleh karena itu, pada penelitian ini dilakukan modifikasi dengan menambahkan isolat protein kedelai dan susu cair serta mengoptimasi formula sebagai upaya untuk meningkatkan kadar protein maupun perbaikan sensori pada *cookies* mocaf.

Penelitian ini bertujuan untuk: (1) menetapkan proporsi isolat protein kedelai dan susu cair pada pembuatan *cookies* mocaf yang memiliki respon sensori optimum meliputi intensitas warna kuning kecokelatan, *milky flavor*, *beany flavor*, *cassava flavor*, kerenyahan, *aftertaste* pahit, dan kesukaan secara keseluruhan, menggunakan metode RSM; (2) mengkaji pengaruh proporsi isolat protein kedelai dan susu cair terhadap karakteristik sensori produk *cookies* mocaf dengan formula yang diperoleh dari *software Design Expert*; (3) membandingkan karakteristik sensori dan kimia produk *cookies* mocaf formula optimum dengan formula kontrol. Penelitian ini menggunakan metode *Response Surface Methodology* dengan rancangan percobaan *Central Composite Design*. Data yang diperoleh dianalisis dengan *software Design Expert V.13* dan SPSS IBM Statistics 25 menggunakan uji T 95%.

Penelitian ini menghasilkan formula optimum *cookies* mocaf dengan proporsi isolat protein kedelai 9,295% dan susu cair 15,303%. Hasil uji sensori menunjukkan peningkatan proporsi isolat protein kedelai menyebabkan peningkatan respon intensitas warna kuning kecokelatan, *beany flavor*, kerenyahan, dan *aftertaste* pahit, serta menyebabkan penurunan respon *milky flavor*, *cassava flavor*, dan kesukaan. Peningkatan proporsi susu cair menyebabkan peningkatan respon *milky flavor* dan kesukaan, serta menyebabkan penurunan respon intensitas warna kuning kecokelatan, *beany flavor*, *cassava flavor*, kerenyahan, dan *aftertaste* pahit. Produk optimum memiliki skor sensori *milky flavor*, *beany flavor*, *cassava flavor*, kerenyahan, *aftertaste* pahit, dan kesukaan yang lebih tinggi dibandingkan produk kontrol, sedangkan skor sensori intensitas warna kuning kecokelatan lebih rendah dibandingkan produk kontrol. Produk optimum memiliki nilai rata-rata kadar air, kadar abu, kadar protein, kadar lemak, yang lebih tinggi, sedangkan kadar karbohidrat memiliki nilai rata-rata yang lebih rendah dibandingkan produk kontrol. Produk optimum memiliki kadar air sebesar 3,46%; kadar abu 2,37 %; kadar protein 7,12%; kadar lemak 22,29%; kadar karbohidrat 68,23%; serat pangan total 4,27% gula total 29,65%; kalium 25,78mg/100g; dan natrium 583,97mg/100g.

Kata kunci: *Cookies, isolat protein kedelai, mocaf, RSM, susu cair.*

ABSTRACT

The average consumption of cookies is high in Indonesia and cookies is generally made from wheat flour. The potential increase in cookies consumption may lead to wheat-based food dependence. This dependence needs to be reduced by increasing consumption and production of local food ingredients. Mocaf, which is made from cassava is an alternative to replace wheat flour. In previous research, the use of mocaf has been found in several diversified products, one of them is cookies, but usually the products have low protein content. Therefore, in this research, modifications were made by adding soy protein isolate and liquid milk, also optimizing the formula to increase protein levels and improve the sensory of mocaf cookies.

This research aims to: (1) determining the proportion of soy protein isolate and liquid milk in the making of mocaf biscuits which has optimum sensory response include yellow-brown color intensity, milky flavor, beany flavor, cassava flavor, crispness, bitter aftertaste, and overall preference, using the RSM method; (2) examining the effect of soy protein isolate and liquid milk proportion on the sensory characteristics of mocaf cookies products with the formula obtained from Design Expert software; (3) comparing the sensory and chemical characteristics of the optimum formula mocaf cookies with the control formula. This research uses Response Surface Methodology with Central Composite Design experimental design. The data obtained were analyzed with Design Expert V.13 software and SPSS IBM Statistics 25 using 95% T test.

This research resulted the optimum formula of mocaf cookies with the proportion of soy protein isolate 9.295% and liquid milk 15.303%. The sensory test results showed that the increase of soy protein isolate caused increasing yellow-brown color intensity, beany flavor, crispness, and bitter aftertaste, also caused decreasing milky flavor, cassava flavor, and overall preference. The increase of liquid milk proportion caused increasing milky flavor and overall preference, also caused decreasing yellow-brown color intensity, beany flavor, cassava flavor, crispness, and bitter aftertaste. The optimum product has milky flavor, beany flavor, cassava flavor, crispness, bitter aftertaste, and overall preference scores that are higher than the control product, while the yellow-brown color intensity sensory score is lower than the control product. The optimum product has a higher average value of water content, ash content, protein content, fat content, while the carbohydrate content has a lower average value than the control product. The optimum product has a water content of 3.46%; ash content of 2.37%; protein content of 7.12%; fat content of 22.29%; carbohydrate content of 68.23%; total dietary fiber 4.27% total sugar 29.65%; potassium 25.78mg/100g; and sodium 583.97mg/100g.

Keywords: Cookies, liquid milk, mocaf, RSM, soy isolate protein.