

ABSTRAK

Kukis merupakan salah satu makanan ringan yang tingkat konsumsinya cukup tinggi di Indonesia dan umumnya terbuat dari bahan dasar terigu. Tingginya tingkat konsumsi kukis dapat menyebabkan ketergantungan pada pangan berbasis terigu. Ketergantungan ini dapat dikurangi dengan melakukan inovasi pembuatan kukis berbahan dasar tepung yang terbuat dari pangan lokal. Mocaf yang terbuat dari singkong menjadi salah satu alternatif substitusi terigu. Namun, mocaf terbuat dari umbi-umbian sehingga kadar proteinnya rendah. Oleh karena itu, pada penelitian ini dilakukan modifikasi dengan menambahkan bubuk konsentrat *whey* dan VCO serta mengoptimasi formula sebagai upaya untuk meningkatkan kadar protein maupun perbaikan sensori pada kukis mocaf. Penelitian ini bertujuan untuk (1) menetapkan proporsi bubuk konsentrat *whey* dan VCO untuk menghasilkan kukis yang memiliki respon optimum meliputi intensitas warna kuning kecokelatan *in range*, keremahan maksimal, kelembutan maksimal, *milky flavor* maksimal, *coconut flavor* maksimal, *cassava flavor in range*, dan kesukaan secara keseluruhan maksimal, (2) mengkaji karakteristik sensori dari faktor yang dioptimasi yaitu bubuk konsentrat *whey* dan VCO, (3) menetapkan karakteristik sensori dan kimia produk kukis dengan penambahan bubuk konsentrat *whey* dan VCO optimum.

Penelitian dilaksanakan di Pusat Inovasi Pangan Dukuwaluh dan Laboratorium Pengolahan Teknologi Pertanian, Fakultas Pertanian, Universitas Jenderal Soedirman Purwokerto mulai bulan Februari 2024 hingga Mei 2024. Penelitian dilakukan menggunakan metode *Response Surface Methodology* (RSM) dengan rancangan percobaan *Central Composite Design* (CCD) yang terdiri dari 2 faktor, 2 blok, dan 14 kombinasi perlakuan. Data yang diperoleh dianalisis dengan *software Design Expert V.13*.

Penelitian ini menghasilkan formula optimum kukis dengan proporsi bubuk konsentrat *whey* 9,014% dan VCO 13,536% dengan nilai desirability 0,622. Hasil uji sensori menunjukkan kukis formula optimum memiliki karakteristik sensori meliputi warna agak kuning kecokelatan (3,33), tekstur agak remah (2,76) dan agak lembut (3,30), *milky flavor* agak kuat (2,85), *coconut flavor* agak kuat (3,37), *cassava flavor* agak kuat (2,67), dan tingkat kesukaan yang agak disukai (3,36). Hasil analisis kimia menunjukkan kukis optimum memiliki kadar abu 2,19% (bk), kadar protein 5,06% (bk), kadar lemak 24,37% (bk), dan kadar karbohidrat 68,2% (bk).

Kata kunci: kukis, mocaf, bubuk konsentrat *whey*, VCO, *response surface methodology*

ABSTRACT

Cookies are type of snack that has a high consumption in Indonesia and its generally made from wheat flour. The high level of cookies consumption can cause dependence on wheat based foods. This dependence can be reduced by innovating the cookies made from flour local foods. Mocaf flour made from cassava is an alternative substitute for wheat flour. However, mocaf is made from tubers, so the protein content is low. Therefore, in this research modifications were made by adding whey concentrate powder and VCO and optimizing the formula in an effort to increase protein levels and sensory improvements in mocaf cookies. This research aims to: (1) determining the proportion of whey concentrate powder and VCO to produce cookies that have an optimum response include the intensity of the brownish yellow color in range, maximum crumbliness level, maximum softness level, maximum milky flavor, maximum coconut flavor, cassava flavor in range, and maximum overall liking, (2) examing the sensory characteristics of the optimized factors, namely whey concentrate powder and VCO, (3) determining the sensory and chemical characteristics of cookie products with the addition of optimum whey concentrate powder and VCO.

This research was conducted at the Dukuwaluh Food Inovation Center and Laboratory of Food Processing Agricultural Technology, Faculty of Agriculture, Jenderal Soedirman University, Purwokerto from February 2024 to May 2024. This research used the RSM (Response Surface Methodology) method with a CCD (Central Composite Design) experimental design consisting of 2 factors, 2 blocks, and 14 treatment combinations. The data obtained were analyzed with Design Expert V.13.

This research produced the optimum formula cookies with a whey concentrate powder proportion is 9,014% and VCO is 13,536% with a desirability value of 0,622. Sensory test results show that the optimum formula has sensory characteristics in the form of a slightly brownish yellow color (3.33), a slightly crumbly texture (2.76) and slightly soft (3.30), a slightly strong milky flavor (2.85), coconut flavor is rather strong (3.37), the cassava flavor is rather strong (2.67), and the level of liking is slightly like (3.36). The optimum cookies has a ash content of 2,19%, protein content of 5,06%, fat content of 24,37%, and carbohydrate content of 68,2%.

Keywords: cookies, mocaf, whey concentrate powder, VCO, response surface methodology