

RINGKASAN

Pie merupakan salah satu jenis *pastry* yang termasuk ke dalam jenis *short pastry*. Pie yang berkualitas baik dapat dilihat saat proses adonan, jika adonannya baik maka kualitas yang dihasilkan akan baik. Penggunaan tepung mocaf sebagai pengganti tepung terigu memerlukan proporsi dan formula yang tepat sehingga dapat menghasilkan produk pie dengan kualitas yang optimal. Salah satu buah yang dapat dijadikan bahan isian pie yaitu jambu biji merah. Tujuan dari penelitian ini untuk: (1) untuk menetapkan proporsi tepung mocaf dan jambu biji merah yang optimal dalam pembuatan pie jambu, (2) untuk mengkaji karakteristik sensori dan kimia produk pie jambu biji merah dengan formula optimal.

Penelitian dilaksanakan di Laboratorium Pengolahan Teknologi Pertanian, Laboratorium Pangan dan Gizi Teknologi Pertanian, Fakultas Pertanian, Universitas Jenderal Soedirman selama 7 bulan dari Juli 2024 hingga Februari 2025. Metode optimasi yang digunakan dalam penelitian ini, yaitu *Simplex Lattice Design* (SLD) dengan Rancangan Acak Lengkap (RAL). Penelitian ini menggunakan dua variabel input, yaitu tepung mocaf (26-30%) dan buah jambu (17-21%). Kemudian, diperoleh 8 formula pie jambu yang akan dievaluasi untuk optimasi formula pie jambu berdasarkan variabel respon yang digunakan, yaitu parameter sensori (kelembutan, keremahan, flavor mocaf, dan flavor jambu). Pengujian sensori pada tahap optimasi dilakukan oleh 35 panelis semi terlatih dengan 8 sampel, selanjutnya dilakukan tahap verifikasi dan validasi pada formula optimum. Hasil formula optimum dibandingkan dengan produk kontrol. Data yang diperoleh dianalisis menggunakan *software* Design Expert v.13 dan SPSS IBM Statistik 26 dengan uji t pada taraf 95%.

Penelitian ini menghasilkan formula optimum pie jambu dengan proporsi tepung mocaf sebesar 26% dan jambu biji merah sebesar 21%. Hasil uji sensori menunjukkan tepung mocaf berpengaruh terhadap peningkatan respons flavor mocaf dan keremahan serta menurunkan respons kelembutan. Karakterisasi sensori pada pie jambu dengan formula optimum memiliki skor warna isian pie (4,26), warna kulit pie (3,66), kelembutan (3,60), keremahan (3,74), dan kesukaan (4,11). Proporsi jambu berpengaruh terhadap peningkatan respons kelembutan, flavor jambu, dan kesukaan secara keseluruhan serta menurunkan respons keremahan. Karakterisasi kimia pada pie jambu dengan formula optimum memiliki kadar air 18,77%, kadar abu 0,68%, kadar protein 10,08%, kadar lemak 8,86%, dan kadar karbohidrat 61,5%. Pie jambu dengan formula optimum memiliki kadar karbohidrat lebih tinggi dibanding formula kontrol. Sedangkan, kadar air, kadar abu, kadar protein, dan kadar lemak lebih rendah dibandingkan dengan formula kontrol. Atribut yang memiliki perbedaan signifikan, yaitu kadar air dan kadar abu.

SUMMARY

Pie is one type of pastry that is included in the type of short pastry. A good quality pie can be seen during the dough process, if the dough is good then the resulting quality will be good. The use of mocaf flour as a substitute for wheat flour requires the right proportion and formula so that it can produce pie products with optimal quality. One of the fruits that can be used as pie filling material is red guava. The purpose of this research is to: (1) to determine the optimal proportion of mocaf flour and red guava in making guava pie, (2) to assess the sensory and chemical characteristics of red guava pie products with the optimal formula.

The research was conducted at the Agricultural Technology Processing Laboratory, Food and Nutrition Laboratory of Agricultural Tehcnology, Faculty of Agriculture, Universitas Jenderal Soedirman for 7 months from July 2024 to February 2025. The method used in this research is Simplex Lattice Design (SLD) with completely randomized design (RAL). This study employed two input variables, namely mocaf flour (26-30%) and guava fruit (17-21%). Then, 8 guava pie formulas were obtained which will be evaluated for guava pie formula optimization based on the response variables used, namely sensory parameters (softness, crispness, mocaf flavor, and guava flavor). Sensory testing at the optimization stage was carried out by 35 semi trained panelists with 8 samples, then the verification and validation stage was carried out on the optimum formula. The results of the optimum formula were compared with the control product. The data obtained were analyzed using Design Expert v.13 software and SPSS IBM Statistics 26 with t test at 95% level.

This study produced an optimum formula for guava pie with a proportion of mocaf flour of 26% and red guava of 21%. The sensory test results showed that mocaf flour has an effect on increasing the response of mocaf flavor and weakness and decreasing the softness. The sensory characterization of guava pie with the optimum formula had a score of pie filling color (4,26), pie crust color (3,66), softness (3,60), crispness (3,74), and overall liking (4,11). The proportion of guava has an effect on increasing response of softness, guava flavor, and overall liking and decreasing the weak response. The chemical characterization of guava pie with the optimum formula have a moisture content of 18,%, ash content of 0,68%, protein content of 10,08%, fat content of 8,86%, and carbohydrate content of 61,5%. Guava pie with optimum formula has higher carbohydrate content than the control formula. Meanwhile, water content, ash content, protein content, and fat content were lower than the control formula. The attribute that has a significant difference is water content and ash content.