

ABSTRAK

ANALISIS PENGARUH KECEPATAN DAN WAKTU TERHADAP KUALITAS SELAI NANAS PADA MESIN PENGADUK SELAI VERTIKAL

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(2025: xii + 66 Halaman, 21 Gambar, 30 Tabel, 7 Lampiran)

Penelitian ini bertujuan untuk menganalisis pengaruh variasi kecepatan dan waktu pengadukan terhadap kualitas selai nanas menggunakan mesin pengaduk vertikal. Permasalahan utama dalam produksi selai skala UMKM seperti AW Bakery adalah ketidakkonsistenan mutu akibat proses pengadukan manual yang tidak terstandar. Penelitian ini menggunakan metode eksperimen kuantitatif dengan desain faktorial yang melibatkan tiga tingkat kecepatan (27,7 rpm, 39,9 rpm, dan 45,3 rpm), tiga durasi pengadukan (10, 20, dan 30 menit), serta dua jenis bilah pengaduk (2 bilah dan 4 bilah). Penilaian mutu selai dilakukan secara visual berdasarkan lima parameter: homogenitas, elastisitas, viskositas, tekstur, dan warna, dengan skala skor 1–3. Hasil uji ANOVA dua arah menunjukkan bahwa baik kecepatan maupun waktu pengadukan, serta interaksi keduanya, berpengaruh signifikan terhadap mutu selai. Kombinasi terbaik diperoleh pada kecepatan 45,3 rpm selama 30 menit dengan pengaduk tipe 4 bilah, menghasilkan selai yang lebih homogen, kental, elastis, berwarna stabil, dan bertekstur halus. Temuan ini memberikan rekomendasi teknis bagi pelaku UMKM dalam meningkatkan mutu produk dan efisiensi proses produksi selai.

Kata Kunci: Selai nanas, pengadukan, kecepatan, waktu, mutu produk, ANOVA

ABSTRACT

ANALYSIS OF THE EFFECT OF SPEED AND TIME ON THE QUALITY OF PINEAPPLE JAM ON VERTICAL JAM MIXING MACHINE

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This study aims to analyze the effect of mixing speed and duration on the quality of pineapple jam using a vertical mixing machine. The main problem in small-scale jam production, such as at AW Bakery, lies in inconsistent product quality due to manual mixing processes without standardized control. A quantitative experimental method with a factorial design was applied, involving three speed levels (27.7 rpm, 39.9 rpm, and 45.3 rpm), three mixing durations (10, 20, and 30 minutes), and two types of mixing blades (2-blade and 4-blade). The quality of the jam was assessed visually based on five parameters: homogeneity, elasticity, viscosity, texture, and color, using a 1–3 scoring scale. Two-way ANOVA results showed that mixing speed, duration, and their interaction had a significant effect on all quality parameters. The optimal result was achieved at 45.3 rpm for 30 minutes using the 4-blade mixer, producing jam with higher homogeneity, better consistency, improved elasticity, stable color, and a smoother texture. These findings provide practical recommendations for small and medium food businesses (SMEs) to improve product quality and production efficiency in jam processing.

Keywords : Pineapple jam, mixing speed, mixing time, vertical mixer, product quality, ANOVA