# PENGEMBANGAN ROTI TAWAR BERBASIS TEPUNG MOCAF DAN TEPUNG GEMBILI MENGGUNAKAN TEKNIK *PARTICLE-STABILIZED FOAM*

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## ABSTRAK

Ketergantungan impor gandum di Indonesia untuk kebutuhan roti tawar menjadi tantangan serius bagi ketahanan pangan nasional. Salah satunya dengan melakukan pengembangan roti berbahan baku tepung lokal. Penelitian ini bertujuan mengembangkan roti tawar bebas gluten menggunakan campuran tepung mocaf dan tepung gembili dengan teknik *particle stabilized foam*, serta membandingkannya dengan teknik konvensional. Penelitian diawali dengan penentuan formulasi terbaik tepung mocaf dan tepung gembili, yaitu 80% tepung mocaf dan 20% tepung gembili. Pengujian meliputi warna, aroma, rasa, pori-pori, volume pengembangan, tekstur, kadar air, aktivitas air, kadar abu, kadar abu tidak larut asam dan uji hedonik (warna,aroma, rasa, tekstur, dan keseluruhan). Hasil penelitian menunjukkan bahwa teknik *particle stabilized foam* menghasilkan roti dengan pori-pori selbih seragam, volume pengembangan lebih tinggi (79%), dan tekstur lebih lembut (2,74 N) dibandingkan dengan teknik konvensional memiliki volume pengembangan lebih rendah (53 %) dan tekstur 4,95 N. Seluruh parameter mutu memenuhi SNI roti tawar. Berdasarkan uji hedonik, roti dengan teknik *particle stabilized foam* lebih disukai panelis. Teknik *particle stabilized foam* terbukti efektif menghasilkan roti tawar bebas gluten dengan tekstur lebih baik dan lebih disukai konsumen

*Kata kunci*: roti tawar, teknik *particle stabilized foam*, tepung mocaf, tepung gembili,

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# *DEVELOPMENT OF WHITE BREAD BASED ON MOCAF AND GEMBILI FLOUR USING THE PARTICLE-STABILIZED FOAM*

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## ABSTRACT

*Indonesia's dependence on wheat imports for bread production poses a serious challenge to national food security. One solution is to develop bread using local flour. This study aimed to develop gluten free white bread using a combination of mocaf flour and gembili flour with the particle stabilized foam (PSF) technique, and compare it with conventional techniques. The research began by determining the best formulation of mocaf and gembili flour, which was 80% mocaf flour and 20% gembili flour. The tests included color, aroma, taste, crumb structure, volume expansion, texture, moisture content, water activity, ash content, acid-insoluble ash, and hedonic tests (color, aroma, taste, texture, and overall acceptability). The results showed that the particle stabilized foam (PSF) technique produced bread with a more uniform crumb structure, higher volume expansion (79%), and softer texture (2.74 N) compared to conventional bread 53% volume expansion, 4.95 N texture. All quality parameters met the Indonesian National Standard (SNI) for bread. Based on hedonic testing, bread produced with the particle stabilized foam PSF technique was more preferred by the panelists. The particle stabilized foam (PSF) technique proved effective in producing gluten-free white bread with better texture and higher consumer acceptance.*
*Keywords: gembili flour, mocaf flour, particle stabilized foam technique,white bread*

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