

ABSTRAK

Roti sobek gemoy merupakan salah satu produk yang diproduksi oleh UMKM Ariny Bakery. Dalam proses produksinya masih ditemukan kecacatan produk berupa isi keluar atau bocor, gelembung, dan warna tidak merata yang menyebabkan penurunan kualitas produk. Penelitian ini bertujuan untuk mengetahui pengaruh berat isian, waktu *proofing*, lama pemanggangan, interaksi antar faktor terhadap kecacatan produk, serta menentukan kombinasi faktor dan level yang optimal untuk meminimalkan kecacatan. Metode yang digunakan adalah *Design of Experiment* (DOE) dengan pendekatan faktorial melalui Rancangan Acak Lengkap (RAL) 3^3 yang terdiri dari 27 kombinasi perlakuan dengan 2 kali replikasi. Berdasarkan karakteristik kualitas *Smaller is Better*, diperoleh kombinasi faktor dan level optimal yaitu A1B2C1 (berat isian 10 gram, waktu *proofing* 60 menit, dan lama pemanggangan 20 menit). Kombinasi tersebut menghasilkan prediksi persentase kecacatan sebesar 14,996% untuk respon isi keluar atau bocor, 27,189% untuk respon gelembung, dan 35,556% untuk respon warna tidak merata. Hal ini sejalan dengan *Sustainable Development Goals* (SDGs) poin ke-9 (*Industry, Innovation and Infrastructure*) sehingga diharapkan dapat menjadi dasar penyusunan *Standard Operating Procedure* (SOP) guna meningkatkan kualitas produk dan mengurangi tingkat kecacatan pada roti sobek gemoy di UMKM Ariny Bakery.

Kata kunci: roti sobek gemoy, kecacatan produk, kualitas produk, *Design of Experiment* (DOE), Rancangan Acak Lengkap (RAL) faktorial.

ABSTRACT

Gemoy torn bread is one of the products manufactured by Ariny Bakery MSME. In its production process, product defects are still found, such as leaking or seeping filling, bubbles, and uneven color, which cause a decline in product quality. This study aims to determine the effect of filling weight, proofing time, baking duration, and the interaction between these factors on product defects, as well as to determine the optimal combination of factors and levels to minimize defects. The method used is Design of Experiment (DOE) with a factorial approach through a 3³ Completely Randomized Design (CRD), consisting of 27 treatment combinations with 2 replications. Based on the Smaller is Better quality characteristic, the optimal combination of factors and levels obtained is A1B2C1 (filling weight of 10 grams, proofing time of 60 minutes, and baking duration of 20 minutes). This combination produces a predicted defect percentage of 14.996% for the leaking defect response, 27.189% for the bubble defect response, and 35.556% for the uneven color defect response. This is in line with the Sustainable Development Goals (SDGs) point 9 (Industry, Innovation and Infrastructure), so it is expected to serve as a basis for preparing a Standard Operating Procedure (SOP) to improve product quality and reduce the level of defects in gemoy torn bread at Ariny Bakery MSME.

Keywords: *gemoy torn bread, product defects, product quality, Design of Experiment (DOE), factorial Completely Randomized Design (CRD).*