

ABSTRAK

Formulasi dan Evaluasi Mie *Gluten-free* dengan Kombinasi Tepung Porang, Tepung *Mocaf* dan Tepung Garut menggunakan Metode Ekstrusi dan Penggunaan Kemasan *Biodegradable*

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Mie *gluten-free* merupakan mie yang berbahan baku tepung yang tidak mengandung gluten. Penggunaan tepung terigu di Indonesia merupakan tepung impor. Tepung porang, *mocaf*, dan Garut berasal umbi yang banyak dijumpai di Indonesia. Kelebihan ketiga tepung tersebut yaitu tidak mengandung gluten dan mempunyai Indeks Glikemik yang rendah. Penerapan teknologi sederhana ekstrusi dalam pembuatan mie *gluten-free*, serta melakukan evaluasi karakteristik, fisik, dan kimia serta uji hedonik mie, diharapkan menghasilkan mie yang memenuhi syarat SNI. Selain itu mie dikemas dengan kemasan *biodegradable* untuk mengurangi pencemaran lingkungan. Percobaan yang dilakukan dalam penelitian ini menggunakan kombinasi tepung porang (12-21%), tepung *mocaf* (16-35%), dan tepung Garut (14-33%) dengan 5 formulasi yang berbeda. Semua formula diamati karakteristik fisik (elongasi, *Cooking time*) dan kimia (susut pengeringan) dan dilakukan uji hedonik meliputi tampilan, warna, aroma, rasa dan keberterimaan. Hasil analisis statistik menunjukkan bahwa terdapat perbedaan bermakna pada seluruh formula ($p < 0,05$) meliputi sifat fisik (*Cooking time* dan elongasi) dan kimia (susut pengeringan) mie yang dihasilkan. Formula 4 dipilih sebagai Formula terbaik yang paling banyak disukai panelis dan memenuhi syarat SNI. Dengan hasil evaluasi sebagai berikut: susut pengeringan 2,5%, *Cooking time* 214 detik, elongasi 11%, tampilan 21%, warna 21%, aroma 20%, rasa 20%, keberterimaan 21%.

Kata Kunci : *biodegradable*, ekstrusi, gluten.

ABSTRACT

Formulation and Evaluation of Gluten-free Noodles with a Combination of Porang flour, Mocaf flour and Arrowroot flour using the Extrusion method and the use of Biodegradable packaging

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Gluten-free noodles are made from raw materials that are free from gluten-containing flour. The use of wheat flour in Indonesia is typically imported. Porang flour, mocaf (modified cassava flour), and Garut flour are derived from tubers commonly found in Indonesia. The advantages of these three flours are that they are gluten-free and have a low Glycemic Index. By employing a simple extrusion technology in the production of gluten-free noodles, along with evaluating their physical and chemical characteristics, as well as conducting a hedonic test, the aim is to create noodles that meet the Indonesian National Standard (SNI) requirements. Additionally, these noodles are packaged using biodegradable materials to reduce environmental pollution. The experiments conducted in this research involve different combinations of porang flour (12-21%), mocaf (16-35%), and Garut flour (14-33%) in five distinct formulations. All formulations were observed for their physical characteristics (elongation, cooking time) and chemical properties (drying shrinkage), followed by a hedonic test assessing appearance, color, aroma, taste, and overall acceptability. The results of the statistical analysis indicate significant differences among all formulations ($p < 0.05$), including in the physical properties (cooking time and elongation) and chemical property (drying shrinkage) of the resulting noodles. Formula 4 was selected as the best formulation, favored by the panelists and meeting the SNI requirements. The evaluation results for Formula 4 are as follows: drying shrinkage 2.5%, cooking time 214 seconds, elongation 11%, appearance 21%, color 21%, aroma 20%, taste 20%, overall acceptability 21%.

Keywords: biodegradable, extrusion, gluten.