

## FORMULASI ROTI BEBAS GLUTEN BERBASIS TEPUNG SORGUM DENGAN PENAMBAHAN PATI GARUT DAN GUM ARAB

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<b>Author Order</b>	3 of 4
<b>Accreditation</b>	2
<b>Abstract</b>	<p>Tepung sorgum tidak memiliki gluten sehingga tidak bisa dibuat menjadi roti yang memiliki tekstur baik. Untuk dapat menghasilkan roti sorgum dengan tekstur yang baik perlu bahan pembentuk sebagai pengganti gluten. Penambahan pati garut akan mengakibatkan gelatinisasi mampu memerangkap gelembung udara serta memfasilitasi retensi gas selama fermentasi. Gum arab memiliki kemampuan meniru sifat viskoelastis gluten. Tujuan dari penelitian ini adalah 1) menentukan proporsi pati garut dan gum arab yang optimum dalam pembuatan roti sorgum; 2) memperelajari sifat fisik, kimia, dan sensori roti. Rancangan percobaan menggunakan Response Surface Methodology dengan dua faktor yakni pati garut (25-40%) dan gum arab (1-5%). Variabel yang diamati meliputi volume spesifik, hardness, cohesiveness, kadar air, abu, karbohidrat, protein, lemak, serta karakteristik sensori (warna, aroma, tekstur, rasa, dan kesukaan). Formula optimum roti berbasis sorgum yakni dengan proporsi pati garut 40% dan gum arab 5 %.</p> <p>Karakteristik formula optimum roti sorgum adalah volume spesifik 342,76 cm<sup>3</sup>; hardness 0,34 N; cohesiveness 1,31; kadar air 49,62%, kadar abu 0,74 %, kadar karbohidrat 40,45%, kadar protein 6,22%, dan kadar lemak 2,97%. Karakteristik sensori (warna putih sedikit keabuan, aroma khas roti agak kuat, tekstur pori agak seragam, rasa khas roti agak kuat dan tingkat kesukaan netral). Karakter ini hampir sama dengan roti dari terigu sehingga dapat digunakan sebagai pangan alternatif bagi orang yang intoleran terhadap gluten.</p> <p>Gluten Free Bread Formulation Based on Sorghum Flour with Addition of Arabic Garut and Gum Starch</p> <p>The gluten-free bread formula from sorghum requires the formation of a gluten substitute so that bread has desire characteristics. During baking, starch granules of arrowroot gelatinize and have ability to trap air bubbles, facilitating gas retention during fermentation. Arabic gum has the ability to mimic the viscoelastic properties of gluten. The objectives of this study were 1) determining the optimum proportion of arrowroot starch and Arabic gum in sorghum-based gluten-free bread making; 2) knowing the physical, chemical, and sensory properties of bread. The experimental design in this study used Response Surface Methodology with two factors is arrowroot starch (25-40%) and arabic gum (1-5%). The variables observed were specific volume, hardness, cohesiveness, moisture, ash content, carbohydrate, protein, fat, and sensory characteristics (color, aroma, texture, taste, and preference). The optimum formula for sorghum bread is 40% proportion of arrowroot starch and 5% of Arabic gum addition. The characteristic of bread were specific volume 342.76 cm<sup>3</sup>, hardness 0,34 N, cohesiveness 1.31; 49,62% moisture content, 0.74% ash content, carbohydrate levels of 40.45% protein content of 6.22% and fat content of 2.97% and sensory characteristics (slightly grayish white, distinctive strong bread aroma, rather uniform pore texture, distinctive strong bread flavor and neutral level of preference). This character is almost the same as wheat bread so that it can be used as an alternative for people who are intolerant of gluten.</p>
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