

## ANALISIS NILAI GIZI KUE PUTU MAYANG MODIFIKASI BERBASIS MOLECULAR GASTRONOMY SEBAGAI ALTERNATIF SNACK PADAT GIZI BAGI LANSIA

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### INTISARI

**Latar Belakang :** Jajanan tradisional seperti kue putu mayang cenderung memiliki kandungan gizi yang tidak seimbang sehingga diperlukan penambahan sumber zat gizi lain, seperti protein. Dengan kandungan gizi yang lebih baik, kue putu mayang berpotensi dikembangkan sebagai *snack* padat gizi bagi lansia. Untuk mencegah kerusakan kandungan gizi selama proses pengolahan, dilakukan modifikasi pengolahan kue putu mayang menggunakan teknik *molecular gastronomy*, khususnya teknik *spherification* dan *gelification*.

**Tujuan :** Mengetahui nilai gizi kue putu mayang dengan bahan dasar ubi ungu, isolat protein kedelai, dan alpukat yang diolah menggunakan teknik *molecular gastronomy* sebagai *snack* padat gizi bagi lansia.

**Metode :** Penelitian eksperimental ini terdiri dari 4 kelompok perlakuan kue putu mayang yang terdiri atas 2 kelompok perlakuan tanpa teknik *molecular gastronomy* dan 2 kelompok perlakuan dengan teknik *molecular gastronomy*. Seluruh kelompok perlakuan dilakukan analisis kandungan energi, protein, lemak, karbohidrat, air, dan abu.

**Hasil :** Kandungan energi, protein, lemak, karbohidrat, air, dan abu kue putu mayang antar kelompok perlakuan berbeda signifikan ( $p < 0,05$ ). Kandungan gizi pada kue putu mayang A1 dan A2 berbeda signifikan dibandingkan dengan kue putu mayang B1 dan B2. Proses *reversed spherification* mengakibatkan banyak protein *loss* sehingga kadar protein kue putu mayang yang diolah dengan perlakuan *molecular gastronomy* rendah. Di sisi lain, gel yang terbuat dari alginat memiliki kemampuan untuk mengenkapsulasi lemak dan menghambat oksidasi lipid sehingga kadar lemak tinggi. Proses pemanasan menyebabkan pati tergelatinisasi. Gelatinisasi menyebabkan peningkatan berat molekul pati sehingga kandungan karbohidrat meningkat.

**Kesimpulan :** Kue putu mayang yang diolah dengan teknik *molecular gastronomy* memiliki kandungan energi, lemak, air, dan abu yang lebih tinggi, sedangkan kandungan protein dan karbohidrat lebih rendah dibandingkan dengan kue putu mayang yang diolah tanpa teknik *molecular gastronomy*.

Kata kunci: Analisis kandungan gizi; *Gelification*; Kue putu mayang; *Reversed spherification*

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## **ANALYSIS OF NUTRITIONAL VALUE OF MODIFIED PUTU MAYANG CAKE BASED ON MOLECULAR GASTRONOMY AS A DENSE NUTRITIOUS SNACK ALTERNATIVE FOR THE ELDERLY**

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### **ABSTRACT**

**Background :** Traditional snacks like putu mayang cake tend to have an unbalanced nutritional content, requiring the addition of other nutrient sources, such as protein. With better nutritional content, putu mayang cake has the potential to be developed as a dense nutritious snack for the elderly. To prevent nutritional damage during processing, the processing of putu mayang cake was modified using molecular gastronomy techniques, specifically spherification and gelification.

**Objective :** To determine the nutritional value of putu mayang cake made with purple sweet potato, soy protein isolate, and avocado, processed using molecular gastronomy as a dense nutritious snack for the elderly.

**Method :** This experimental study consisted of 4 treatment groups of putu mayang cake, comprising 2 groups without molecular gastronomy and 2 groups with molecular gastronomy. All treatment groups were analyzed for energy, protein, fat, carbohydrates, water, and ash content.

**Result :** The energy, protein, fat, carbohydrate, water, and ash content of putu mayang cake among treatment groups showed significant differences ( $p < 0,05$ ). The nutritional content of putu mayang cake A1 and A2 differed significantly from that of putu mayang cake B1 and B2. The reversed spherification process resulted in significant protein loss, leading to lower protein content in putu mayang cake processed with molecular gastronomy. On the other hand, the gel made from alginate had the ability to encapsulate fat and inhibit lipid oxidation, resulting in higher fat content. The heating process caused starch gelatinization. Gelatinization led to an increase in molecular weight of starch, resulting in higher carbohydrate content.

**Conclusion :** Putu mayang cake processed with molecular gastronomy had higher energy, fat, water, and ash content, while protein and carbohydrate content were lower compared to putu mayang cake processed without molecular gastronomy.

**Keywords:** Nutritional analysis; Gelification; Putu mayang Cake; Reversed spherification

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