

**PENGEMBANGAN FORMULA ENTERAL POLIMERIK TINGGI  
ENERGI TINGGI PROTEIN BERBASIS TEPUNG KACANG HIJAU DAN  
TEPUNG SORGUM UNTUK PASIEN KANKER DI RSUD DR.  
MOEWARDI**

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**ABSTRAK**

**Latar Belakang :** Pasien kanker sering mengalami gangguan asupan gizi seperti kesulitan menelan, penurunan kesadaran, dan hilangnya nafsu makan yang menyebabkan berkurangnya kemampuan untuk memenuhi kebutuhan gizi secara oral. Kondisi tersebut memerlukan perhatian khusus terhadap asupan gizi yang diberikan. Oleh karena itu, dikembangkan formula enteral polimerik tinggi energi tinggi protein berbasis tepung kacang hijau dan tepung sorgum yang dimodifikasi dari formula sonde rumah sakit sebagai alternatif berbahan pangan lokal untuk pasien kanker.

**Tujuan :** Mengetahui sifat fisik (viskositas dan osmolaritas), tingkat kesukaan, kandungan gizi dan biaya dari hasil pengembangan formula enteral tinggi energi tinggi protein.

**Metode :** Jenis penelitian ini adalah penelitian Research and Development (R&D) dengan desain penelitian yaitu deksriptif komparatif yaitu perbandingan sifat fisik, tingkat kesukaan, kandungan gizi dan biaya antara modifikasi formula enteral dengan formula enteral komersial dan sonde biasa RS. Tingkat kesukaan dengan uji hedonic menggunakan 20 panelis agak terlatih, serta uji sifat fisik terhadap formula modifikasi yang dilakukan di Instalasi Gizi RSUD Dr.Moewardi.

**Hasil :** Pengembangan formula enteral TETP yang dimodifikasi dari sonde biasa RS memiliki nilai osmolaritas yaitu 300 mOsm/L dengan viskositas yaitu 1.1 cp yang sudah memenuhi standar untuk formula enteral. Sebagian besar panelis menyukai formula enteral berbasis tepung kacang hijau dan tepung sorgum tersebut. formula enteral TETP per 250 ml memiliki kandungan gizi sebesar 273.3 kkal, dan kandungan protein pada formula enteral tersebut yaitu 15 gram. Formula enteral TETP yang dimodifikasi per 1000 ml memiliki harga sebesar Rp 45.067, yang lebih rendah dibandingkan formula enteral komersial.

**Kesimpulan :** Formula enteral TETP berbasis tepung kacang hijau dan tepung sorgum sebagai alternative formula enteral, memiliki sifat fisik (viskositas dan osmolaritas) serta kandungan gizi yang telah memenuhi standar formula enteral. Secara keseluruhan, panelis menyukai aroma dan rasa formula tersebut, dan biaya pengembangannya lebih rendah dibandingkan formula enteral komersial.

**Kata Kunci :** *Formula Enteral, TETP, Tepung Kacang Hijau, Tepung Sorgum, Pasien Kanker.*

# DEVELOPMENT OF A HIGH-ENERGY, HIGH-PROTEIN POLYMERIC ENTERAL FORMULA BASED ON MUNG BEAN FLOUR AND SORGHUM FLOUR FOR CANCER PATIENTS AT DR. MOEAWARDI REGIONAL GENERAL HOSPITAL

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## ABSTRACT

**Background :** Cancer patients often experience nutritional intake disorders such as difficulty swallowing, decreased consciousness, and loss of appetite, which result in a reduced ability to meet nutritional needs orally. These conditions require special attention to nutritional intake. Therefore, a high-energy, high-protein polymeric enteral formula based on mung bean flour and modified sorghum flour was developed from a hospital tube feeding formula as an alternative using local food ingredients for cancer patients.

**Objective :** To determine the physical properties, level of preference, nutritional content, and cost of the developed high-energy, high-protein enteral formula.

**Method :** To determine the physical properties, level of preference, nutritional content, and cost of the developed high-energy, high-protein enteral formula.

**Methods:** This study was a research and development (R&D) study with a descriptive comparative design, comparing the physical properties, level of preference, nutritional content, and cost of the modified enteral formula with commercial enteral formulas and standard hospital feeding tubes. The level of preference was assessed using a hedonic test with 20 semi-trained panelists, and the physical properties of the modified formula were tested at the Nutrition Unit of Dr. Moewardi General Hospital.

**Results :** The development of the modified TETP enteral formula from the standard hospital feeding tube has an osmolarity value of 300 mOsm/L and a viscosity of 1.1 cp, which meets the standards for enteral formulas. Most panelists preferred the enteral formula based on mung bean flour and sorghum flour. The TETP enteral formula per 250 ml has a nutritional content of 273,3 kcal, and the protein content in the enteral formula is 15 grams. The modified TETP enteral formula per 1000 ml has a price of Rp 45.067, which is lower than commercial enteral formulas.

**Conclusion :** The TETP enteral formula based on mung bean flour and sorghum flour has physical properties (viscosity and osmolarity) and nutritional content that meet enteral formula standards. Overall, the panelists liked the aroma and taste of the formula, and its development cost was lower than that of commercial enteral formulas.

**Keywords :** *Enteral Formula, TETP, Mung Bean Flour, Sorghum Flour, Cancer Patien.*