Analisis Kadar Pati, Pati Resisten, dan Daya Cerna Pati Formula Enteral Berbasis Tepung Sorgum dan Tepung Kedelai "Gumcine" sebagai Pangan Fungsional untuk Diabetes Mellitus

Almaas Nabillah[1], Ninik Rustanti[1], Choirun Nissa[1], Hartanti Sandi Wijayanti[1], Muti'ah Mustaqimatusy Syahadah[1]

ABSTRAK

Latar belakang: Lebih dari 30% pasien diabetes mengalami hiperglikemia selama menerima gizi enteral di rumah sakit. Oleh karena itu, beberapa hal yang perlu diperhatikan pada asupan penderita DM selain asupan makronutrien yaitu gizi kualitatif seperti amilosa, amilopektin, pati resisten, dan daya cerna pati yang berkontribusi dalam peningkatan kadar glukosa darah pasien.

Tujuan: Penelitian ini bertujuan untuk menganalisis dan membandingkan kadar pati total, amilosa, amilopektin, pati resisten, dan daya cerna pati formula enteral "GUMCINE" dan formula enteral komersial.

Metode: Penelitian ini merupakan penelitian eksperimental dengan Rancangan Acak Lengkap (RAL) satu faktor berdasarkan tiga variasi komposisi tepung sorgum dan tepung kedelai yaitu A (48,9% : 12,3%), B (49,6%:12,4%), dan C (50% : 14,3%) kemudian dibandingkan dengan formula D (formula enteral komersial). Analisis statistika menggunakan uji *One Way* ANOVA. Uji lanjut menggunakan uji *Tukey* dan uji *Duncan*.

Hasil: Kadar pati total, amilopektin, pati resisten, dan daya cerna pati formula A, B, dan C memiliki perbedaan signifikan dengan formula D. Formula C memiliki kadar amilosa (3,25%) dan pati resisten (8,96%) tertinggi serta amilopektin (20,66%) dan daya cerna pati (15,08%) terendah.

Simpulan: Kadar amilosa dan pati resisten meningkat serta amilopektin dan daya cerna pati menurun seiring meningkatnya tepung sorgum dan kedelai. Formula enteral "GUMCINE" memiliki kadar pati total, amilosa, pati resisten lebih tinggi dan daya cerna pati lebih rendah dibandingkan formula D.

Kata kunci: diabetes melitus, formula enteral, sorgum, kedelai, pati

---

[1] Program Studi Ilmu Gizi, Fakultas Kedokteran, Universitas Diponegoro, Semarang

Analysis of Starch Content, Resistant Starch, and Starch Digestibility of Enteral Formula Based on Sorghum Flour and Soybean Flour "GUMCINE" as Potential Food for Diabetes Mellitus

Almaas Nabillah[2], Ninik Rustanti[1], Choirun Nissa[1], Hartanti Sandi Wijayanti[1], Muti'ah Mustaqimatusy Syahadah[1]

ABSTRACT

Background: More than 30% of diabetes's patients experience hyperglycemia while receiving enteral nutrition in the hospital. Therefore, some of the most important things to consider in the intake of DM patients, besides macronutrient intake, are qualitative nutrients such as amylose, amylopectin, resistant starch, and starch digestibility which contribute to increasing the patient's blood glucose levels.

Objective: This study aims to analyze and compare the total starch content, amylose, amylopectin, resistant starch, and starch digestibility of the enteral formula "GUMCINE" and commercial enteral formula.

Method: This study was experimental research with one-factor randomized design based on three variations composition of sorghum flour and soy flour are A (48.9% : 12.3%), B (49.6%:12.4%), dan C (50% : 14.3%), then compared with formula D (commercial enteral formula). Statistical analysis used the One Way ANOVA test. Post-hoc tests used the Tukey and Duncan test.

Results: The contents of total starch, amylopectin, resistant starch, and starch digestibility formulas A, B, and C had significant differences with formula D. Formula C was the highest amylose (3.25%) and resistant starch (8.96%) along with lowest amylopectin (20.66%) and starch digestibility (15.08%).

Conclusion: Amylose and resistant starch content increased as well as amylopectin and starch digestibility content decereased along with increasing the composition of sorghum and soybean flour. Enteral formula "GUMCINE" had higher level of total starch, amylose, resistant starch and lower level of starch digestibility compared to formula D.

Keywords: diabetes mellitus, enteral formula, sorghum, soybean, starch

---

[2] Nutrition Department, Faculty of Medicine, Diponegoro University, Semarang