

## ABSTRAK

Rofi'atul Hanifah. **Formulasi Tepung Pegagan (*Centella siatica* (L.) Urban) dan Tepung Beras Merah (*Oryza nivara*) Sebagai Bahan Susu Sereal Untuk Diabetes Melitus Tipe 2.** Pembimbing : Theresia Puspita dan Astutik Pudjirahaju

*International Diabetes Federation* (2017) melaporkan bahwa pada tahun 2017 terdapat 425 juta orang di dunia terkena penyakit diabetes melitus. Jumlah ini meningkat sebanyak 2,4% jika dibandingkan dengan jumlah penderita di tahun 2015 yaitu sebanyak 415 juta orang. Salah satu langkah penatalaksanaan diet diabetes melitus adalah terapi gizi medis dengan pengaturan jenis, jumlah, dan jadwal pemberian makanan. Jenis makanan yang digunakan adalah makanan sumber karbohidrat kompleks, tinggi serat dan antioksidan. Tujuan dari penelitian ini untuk menganalisis pengaruh formulasi susu sereal dari tepung pegagan dan tepung beras merah terhadap mutu kimia (kadar air dan kadar abu), mutu gizi (protein, lemak, karbohidrat, dan nilai energi), mutu fungsional (kadar serat kasar dan aktivitas antioksidan), mutu organoleptik dan taraf perlakuan terbaik. Metode yang digunakan adalah penelitian eksperimen dengan desain Rancangan Acak Lengkap (RAL). Formulasi susu sereal dibuat berdasarkan standar produk menurut standar diet DM menurut Perkeni (2015). Perhitungan kepadatan energi dengan prinsip isokalori dengan menggunakan 3 taraf perlakuan yaitu proposi tepung pegagan : tepung beras merah sebanyak P1 (20:80), P2 (25:75), P3 (30:70). Setiap formulasi dilakukan replikasi sebanyak 3 kali sehingga terdapat 9 unit percobaan. Hasil penelitian menunjukkan bahwa proporsi tepung pegagan dan tepung beras merah memberikan pengaruh tidak signifikan terhadap kadar air ( $p=0.075$ ), warna ( $p=0.672$ ), rasa ( $p=0.109$ ), aroma ( $p=0.605$ ), *mouthfeel* ( $p=0.707$ ) dan signifikan terhadap kadar abu ( $p=0.007$ ), kadar protein ( $p=0.001$ ), kadar lemak ( $p=0.002$ ), kadar karbohidrat ( $p=0.001$ ), nilai energi ( $p=0.001$ ), kadar serat kasar ( $p=0.001$ ), dan aktivitas antioksidan ( $p=0.001$ ). Pada penelitian ini taraf perlakuan 3 (P2) dengan proporsi tepung pegagan dan tepung beras merah (25:75) merupakan taraf perlakuan terbaik pada formula susu sereal.

**Kata Kunci :** Susu sereal, diabetes melitus tipe 2, tepung pegagan, tepung beras merah, warna, aroma, rasa, *mouthfeel*, kadar protein, lemak, karbohidrat, nilai energi, aktivitas antioksidan, serat kasar

## ABSTRACT

Rofi'atul Hanifah. **Formulation of *Centella asiatica* (L.) Urban Flour and *Oryza nivara* Flour as The Ingredients of Cereal Milk for Type 2 Diabetes Melitus.**

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International Diabetes Federation (2017) reports that in 2017 there were 425 million people in the world affected by diabetes mellitus. This number increased by 2.4% compared to the number of sufferers in 2015, which amounted to 415 million people. One of the management steps for the diabetes mellitus diet is medical nutrition therapy with the arrangement of types, quantities, and schedules of eating food. The types of food used are food sources of complex carbohydrates, high in fiber and antioxidants. The purpose of this study were to analyze the effect of cereal milk formulations from *Cebtella asiatica* (L.) Urban flour and *Oryza nivara* flour on chemical quality (water content and ash content), nutritional quality (protein content, fat content, carbohydrate content, and energy value), functional quality (crude fiber content and antioxidant activity), organoleptic quality and the best level of treatment. The method used is experimental research with a completely randomized design (CRD). Formulations of cereal milk are made based on product standards according to DM diet standards according to Perkeni (2015). Calculation of energy density with the principle of isocalories using 3 levels of treatment, namely the proportion of *Centella asiatica* (L.) Urban flour: *Oryza nivara* flour as much as P1 (20:80), P2 (25:75), P3 (30:70). Each formulation was replicated 3 times so that there were 9 experimental units. The results showed that the proportion of *Centella asiatica* (L.) Urban flour and *Oryza nivara* flour had no significant effect on water content ( $p = 0.075$ ), color ( $p = 0.672$ ), taste ( $p = 0.109$ ), flavor ( $p = 0.605$ ), mouthfeel ( $p = 0.707$ ) and significant to ash content ( $p = 0.007$ ), protein content ( $p = 0.001$ ), fat content ( $p = 0.002$ ), carbohydrate content ( $p = 0.001$ ), energy value ( $p = 0.001$ ), crude fiber content ( $p = 0.001$ ), and antioxidant activity ( $p = 0.001$ ). In this study the level of treatment 3 (P2) with the proportion of *Centella asiatica* (L.) Urban

flour and *Oryza nivara* flour (25:75) was the best level of treatment in the formula for cereal milk.

**Keywords :** Cereal milk, type 2 diabetes melitus, *Centella asiatica* flour, *Oryza nivara* flour, color, taste, flavor, mouthfeel, protein content, fat content, carbohydrate content, energy value, antioxidant activity, crude fiber *content*.