

## ABSTRAK

ELLY PUJI SRI RAHAYU. 2019. Formulasi Tepung Tapioka, Tepung Ampas Tahu, dan Tepung Labu Kuning (*Cucurbita Moschata*) sebagai Bahan Pengembangan Susu Sereal untuk Penderita Diabetes Mellitus Tipe 2. Pembimbing: Astutik Pudjirahaju dan Sulistiastutik.

Diabetes Melitus (DM) salah satu jenis penyakit degeneratif yang mengalami peningkatan setiap tahun di negara-negara seluruh dunia. *International Diabetes Federation* (IDF) tahun 2017 melaporkan bahwa Indonesia menduduki peringkat ke-7 dunia dengan penderita DM sebanyak 10,3 juta jiwa. Tepung ampas tahu dan tepung labu kuning dipilih sebagai bahan pengembangan susu sereal karena mengandung tinggi serat dan antioksidan. Tujuan penelitian menganalisis pengaruh formulasi tepung tapioka, tepung ampas tahu dan tepung labu kuning terhadap nilai energi, mutu kimia (protein, lemak, karbohidrat, kadar air, dan kadar abu), mutu fungsional (kadar serat dan aktivitas antioksidan), dan mutu organoleptik susu sereal pengembangan bagi penderita diabetes mellitus tipe 2. Jenis penelitian yang digunakan adalah eksperimental dengan desain Rancangan Acak Lengkap (RAL). Taraf perlakuan adalah perbandingan tepung tapioka, tepung ampas tahu dan tepung labu kuning yaitu P<sub>1</sub> (60 : 15 : 25), P<sub>2</sub> (45 : 20 : 35), P<sub>3</sub> (35 : 25 : 40).

Hasil penelitian menunjukkan bahwa taraf perlakuan P<sub>1</sub> (60 : 15 : 25) merupakan taraf perlakuan terbaik karena kadar karbohidrat sesuai standar PERKENI 64% total asupan energi, nilai energi 431 Kkal, kadar serat kasar 2,02% menyumbangkan 50,5% dari kebutuhan serat untuk snack sehari, kadar protein 14,7% total asupan energi, kadar lemak 24% total asupan energi, kadar abu sesuai standar SNI 01-4270-1996 2,9%, tetapi kadar air melebihi standar yaitu 3,40% dan aktivitas antioksidan dalam kategori sangat lemah 176.490 µg/ml. Tingkat kesukaan panelis terhadap atribut warna, aroma, *mouthfeel* dan rasa susu sereal pengembangan pada taraf perlakuan 1 (P<sub>1</sub>) paling tinggi.

Penelitian lanjutan mengenai metode pengolahan yang paling baik, yang memberikan dampak pada penurunan aktivitas antioksidan.

**Kata Kunci:** *Diabetes mellitus tipe 2, Tepung ampas tahu, Tepung labu kuning, Susu sereal pengembangan, Mutu kimia, Nilai energi, Mutu fungsional.*

## ABSTRACT

ELLY PUJI SRI RAHAYU. 2019. Formulations of Tapioca Flour, Tofu Flour and Pumpkin Flour (*Cucurbita Moschata*) as Cereal Milk Development Materials for Type 2 Diabetes Mellitus Patients. Guidance: Astutik Pudjirahaju and Sulistiastutik.

Diabetes mellitus (DM) is a type of degenerative disease that increases every year in countries around the world. International Diabetes Federation (IDF) in 2017 reported that Indonesia was ranked 7th in the world with DM patients as many as 10.3 million. Tofu flour and pumpkin flour are chosen as ingredients for developing cereal milk because they contain high fiber and antioxidants. The aim of the study was to analyze the effect of tapioca flour formulation, tofu flour and pumpkin flour on the value of energy, chemical quality (protein, fat, carbohydrate, moisture content, and ash content), functional quality (fiber content and antioxidant activity), and organoleptic quality of milk development cereals for people with type 2 diabetes mellitus.

The type of research used was experimental with a completely randomized design (CRD). The treatment level is the ratio of tapioca flour, tofu flour and pumpkin flour, namely P1 (60: 15: 25), P2 (45: 20: 35), P3 (35: 25: 40).

The results showed that the level of treatment P1 (60: 15: 25) was the best level of treatment because carbohydrate levels were in accordance with the PERKENI standard 64% of total energy intake, 431 Kcal of energy value, 2.02% of crude fiber content contributed 50.5% of fiber requirements for daily snacks, protein content of 14.7% of total energy intake, fat content of 24% of total energy intake, ash content according to SNI 01-4270-1996 standard 2.9%, but water content exceeds standard 3,40% and antioxidant activity in the very weak category 176,490 µg/ml. The level of preference of panelists on the attributes of color, aroma, mouthfeel and taste of cereal milk developed at the level of treatment 1 (P1) was most preferred.

Further research on the best processing methods, which have an impact on decreasing antioxidant activity.

**Keywords:** Type 2 Diabetes Mellitus, tofu flour, pumpkin flour, development cereal milk, chemical quality, energy value, functional quality.