

Kadar Zat Besi, Asam Fitat, dan Serat Pangan pada Formulasi *Cookies* Tepung Mocaf dengan Substitusi Tepung Biji Wijen (*Sesamum Indicum*) untuk Ibu Hamil

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ABSTRAK

Latar Belakang: Riskesdas 2018 menyatakan bahwa 48,9% ibu hamil di Indonesia mengalami anemia sehingga direkomendasikan mengonsumsi tablet tambah darah (TTD) minimal 90 tablet, tetapi hanya 37,7% ibu hamil yang mengonsumsi sesuai anjuran dikarenakan aroma bau besi yang khas. Selain konsumsi TTD, anemia defisiensi besi dapat dicegah atau diobati dengan mengonsumsi makanan sumber zat besi, seperti tepung mocaf dan biji wijen. Namun, zat penghambat seperti serat tak larut dan asam fitat dapat mengurangi penyerapan zat besi.

Tujuan: Menganalisis kadar zat besi, asam fitat, dan serat pangan pada pemanfaatan tepung mocaf dan tepung biji wijen sebagai bahan pembuatan *cookies*.

Metode: Penelitian eksperimental rancangan acak lengkap satu faktor yaitu formulasi tepung mocaf dan tepung biji wijen (85:15, 70:30, 45:55). Analisis kadar zat besi dengan spektrofotometer serapan atom, kadar asam fitat dengan spektrofotometer UV-Vis, dan kadar serat pangan dengan Enzimatik- gravimetri. Analisis statistik dengan one way ANOVA dan post-hoc Duncan.

Hasil: Terdapat perbedaan signifikan ($p < 0,05$) pada kadar zat besi, asam fitat, total serat pangan, serat larut, serta serat tak larut masing-masing formulasi. *Cookies* formulasi F3 memiliki kadar tertinggi: zat besi 9,29 mg/100 g, asam fitat 0,03%, total serat pangan 8,84%, serat larut 0,45%, dan serat tak larut 8,39%.

Simpulan: Kadar zat besi, asam fitat, dan serat pangan pada *cookies* tepung mocaf dengan substitusi tepung biji wijen berbeda signifikan antar formulasi. Peningkatan tepung biji wijen meningkatkan kandungan zat gizi tersebut.

Kata Kunci: Anemia defisiensi besi, *cookies*, tepung mocaf, tepung biji wijen.

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Iron, Phytic Acid, and Dietary Fiber Levels in Mocaf Flour Cookies Formulation with Sesame Seed (*Sesamum Indicum*) Flour Substitution for Pregnant Women

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ABSTRACT

Background: According to the 2018 Basic Health Research (Riskesmas), 48.9% of pregnant women in Indonesia experience anemia. To address this issue, it is recommended that pregnant women consume a minimum of 90 iron supplement (TTD) tablets. However, only 37.7% adhere to this recommendation, primarily due to the distinctive odor of iron. In addition to iron supplementation, iron deficiency anemia can be prevented or managed through dietary intake of iron-rich foods, such as modified cassava flour (mocaf) and sesame seeds. However, the presence of inhibitors such as insoluble fiber and phytic acid may hinder iron absorption.

Objective: This study aims to analyze the iron, phytic acid, and dietary fiber content in cookies formulated with mocaf flour and sesame seed flour.

Methods: This research employs an experimental approach using a completely randomized design with one variable, namely the formulation of mocaf flour and sesame seed flour in different ratios (85:15, 70:30, and 45:55). Iron content was measured using an atomic absorption spectrophotometer, phytic acid levels were determined using a UV-Vis spectrophotometer, and dietary fiber content was analyzed using the enzymatic-gravimetric method. Statistical analysis was performed using one-way ANOVA followed by Duncan's post-hoc test.

Result: There is significant differences ($p < 0.05$) in iron, phytic acid, total dietary fiber, soluble fiber, and insoluble fiber content in each formulation. The F3 cookie formulation exhibited the highest nutrient levels, with iron content of 9.29 mg/100 g, phytic acid at 0.03%, total dietary fiber at 8.84%, soluble fiber at 0.45%, and insoluble fiber at 8.39%.

Conclusion: The levels of iron, phytic acid, and dietary fiber in cookies formulated with mocaf flour and sesame seed flour varied significantly across different formulations. An increase in sesame seed flour proportion resulted in higher concentrations of these nutrients.

Keywords: Iron deficiency anemia, cookies, mocaf flour, sesame seed flour.

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