

PROFIL ASAM LEMAK DAN ASAM AMINO BISKUIT IBU HAMIL DENGAN SUBSTITUSI TEPUNG KACANG HIJAU (*VIGNA RADIATA*, L.) DAN KACANG MERAH (*PHASEOLUS VULGARIS*, L.)

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ABSTRAK

Latar Belakang: Anemia (48,9%), KEK (17,3%), sepsis (15%), dan komplikasi selama persalinan (24%) menjadi masalah gizi pada ibu hamil di Indonesia. Hal itu dapat berakibat kepada gangguan pertumbuhan dan perkembangan kognitif pada bayi yang dilahirkan. Makanan tambahan seperti biskuit menjadi upaya pencegahan masalah gizi pada ibu hamil maupun balita. Kacang hijau dan kacang merah merupakan sereal yang memiliki kandungan asam lemak dan asam amino yang cukup tinggi.

Tujuan: Mendeskripsikan dan menganalisis pengaruh substitusi tepung kacang hijau dan kacang merah terhadap kadar asam lemak esensial dan asam amino esensial.

Metode: Penelitian eksperimental dengan Rancangan Acak Lengkap (RAL) satu faktor pada empat taraf perlakuan F0: kontrol tanpa substitusi tepung kacang hijau atau merah; F1: substitusi tepung kacang hijau (26,3%); F2: substitusi tepung kacang merah (26,3%); F3: substitusi tepung kacang hijau (19,7%) dan tepung kacang merah (13,1%). Uji kandungan asam lemak dengan metode *Gas Chromatography* dan uji kandungan asam amino dengan metode *High Performance Liquid Chromatography*. Uji statistika dengan *one way ANOVA* dan uji Kruskal-Wallis.

Hasil: Substitusi tepung kacang hijau dan kacang merah memberikan pengaruh terhadap kadar asam linolenat ($p=0,024$), asam linoleat ($p=0,048$), asam amino histidin ($p=0,042$), threonin ($p=0,041$), lisin ($p=0,011$), dan arginin ($p=0,049$) dengan rerata kadar tertinggi pada F3. Namun tidak berpengaruh terhadap kadar asam gamma-linolenat, asam amino glisin, tirosin, metionin, valin, fenilalanin, isoleusin, dan leusin.

Simpulan: Substitusi tepung kacang hijau dan kacang merah memengaruhi kadar asam lemak omega-3 (asam linolenat), asam lemak omega-6 (asam linoleat), asam amino histidin, threonin, lisin, dan arginin.

Kata Kunci: asam lemak, asam amino, kacang hijau, kacang merah, biskuit, kehamilan

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FATTY ACID AND AMINO ACID PROFILE OF BISCUIT FOR PREGNANCY WITH MUNG BEAN FLOUR (*VIGNA RADIATA*, L.) AND KIDNEY BEAN FLOUR (*PHASEOLUS VULGARIS*, L.) SUBSTITUTION

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ABSTRACT

Background: Anemia (48,9%), CED (17,3%), sepsis (15%) and complications during childbirth (24%) are nutritional issues among pregnant women in Indonesia. This can result in impaired growth and cognitive development in babies who are born. Additional foods such as biscuits are an effort to prevent nutritional problems in pregnant women and toddlers. Mung bean and kidney bean contain quite high levels of fatty acids and amino acids.

Objective: Describe and analyze the effect of substitution of mung bean and kidney bean flour on the levels of essential fatty acids and essential amino acids.

Methods: The experimental study with by using Completely Randomized single factor Design on four treatments F0: control without mung bean flour and kidney flour substitution; F1: mung bean flour substitution (26,3%); F2: kidney bean flour substitution (26,3%); F3: mung bean flour (19,7%) and kidney bean flour (13,1%) substitutions. The fatty acid content was measured by using Gas Chromatography and amino acid content using High Performance Liquid Chromatography. Statistical test with one way ANOVA and Kruskal-Wallis test.

Result: The substitution of mung bean flour and kidney bean flour effect on linolenic acid ($p=0,024$), linoleic acid ($p=0,048$), amino acid histidine ($p=0,042$), threonine ($p=0,041$), lysine ($p=0,011$), and arginine ($p= 0,049$) with the highest average level in F3. However, it did not affect the levels of gamma-linolenic acid, amino acid glycine, tyrosine, methionine, valine, phenylalanine, isoleucine, and leucine.

Conclusion: The substitution of mung bean flour and kidney bean flour only effect on omega-3 (linolenic acid), omega-6 (linoleic acid), amino acid histidine, threonine, lysine, and arginine.

Keywords: Fatty acid, amino acid, mung bean, kidney bean, biscuit, pregnancy

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