ANALISIS PENGARUH KOMPOSISI GRIT JAGUNG - MOCAF (*MODIFIED CASSAVA FLOUR*) DAN KADAR AIR TERHADAP SIFAT FISIK DAN KIMIA EKSTRUDAT

INTISARI

Oleh:

Linggar Setianingrum
18/429108/TP/12144

Makanan ringan ekstrudat merupakan salah satu produk ekstrusi yang digemari oleh semua kalangan karena rasa, kerenyahan dan bentuknya yang beragam. Konsumsi makanan ringan yang semakin meningkat mengharuskan adanya inovasi produk maupun pengembangan teknik pengolahan makanan ringan yang optimal sehingga menghasilkan produk yang diinginkan. Penelitian ini bertujuan menganalisis pengaruh komposisi grit jagung dan mocaf (*modified cassava flour*) (0, 10, 20% mocaf) serta kadar air bahan (14, 16 dan 18% wb) terhadap sifat fisik dan kimia ekstrudat. Beberapa sifat fisik yang diukur meliputi kadar air, rasio ekspansi, *apparent density*, *bulk density*, *lightness*, *redness*, *yellowness*, *chroma*, *hue angle*, kekerasan, *water absorption index* (WAI) dan *water solubility index* (WSI), sedangkan sifat kimia meliputi abu, total protein, lemak, serat kasar dan karbohidrat. Analisis data dilakukan menggunakan ANOVA untuk mengetahui hubungan antar variabel terhadap parameter. Hasil penelitian ini didapatkan bahwa komposisi secara signifikan ($p<0,05$) mempengaruhi semua sifat fisik ekstrudat, kecuali *bulk density* dipengaruhi signifikan hanya pada ekstrudat sebelum oven dan *water absorption index* (WAI) pada ekstrudat setelah oven. Komposisi juga berpengaruh signifikan ($p<0,05$) terhadap sifat kimia meliputi abu, protein total, lemak, serat kasar dan karbohidrat. Kadar air bahan mempengaruhi semua sifat fisik ekstrudat pada $p<0,05$. Interaksi keduanya juga berpengaruh signifikan ($p<0,05$) terhadap semua sifat fisik ekstrudat, kecuali *redness* dipengaruhi signifikan hanya pada ekstrudat sebelum oven, serta kekerasan dan *water absorption index* (WAI) pada ekstrudat setelah oven. Komposisi dan kadar air bahan yang paling optimal berdasarkan analisis TOPSIS adalah komposisi 20% mocaf dengan kadar air 14%.

Kata Kunci : Ekstrusi, grit jagung, mocaf, kadar air, makanan ringan
Pembimbing : Dr. Joko Nugroho Wahyu Karyadi, S.T.P., M.Eng.; Dr. Devi Yuni Susanti, S.T.P., M.Sc.

ANALYSIS OF THE EFFECT OF CORN GRITS - MOCAF (*MODIFIED CASSAVA FLOUR*) COMPOSITION AND MOISTURE CONTENT ON PHYSICAL AND CHEMICAL PROPERTIES OF EXTRUDATES

ABSTRACT

By:

Linggar Setianingrum
18/429108/TP/12144

Extruded snack is one of the extrusion products that is favored by people because of its taste, crunch, and variety of shapes. The increasing consumption of snacks requires product innovation and the development of optimal snack processing techniques to produce the desired product. This research aims to analyze the effect of the composition of corn grits with mocaf (modified cassava flour) (0, 10, 20% mocaf) and moisture content (14, 16, and 18% wb) on the physical and chemical properties of the extrudate. The physical properties that are measured include moisture content, expansion ratio, apparent density, bulk density, lightness, redness, yellowness, chroma, hue angle, hardness, water absorption index (WAI) and water solubility index (WSI), while the chemical properties are including ash, total protein, fat, crude fiber, and carbohydrates. The analysis was carried out using ANOVA to determine relationships between variables on parameters. The results showed that composition significantly ($p<0.05$) affects all the physical properties of the extrudates, except that the bulk density was significantly affected only in the extrudate before oven and the water absorption index (WAI) in the extrudate after oven. The composition also had a significant effect ($p<0.05$) on chemical properties including ash, total protein, fat, crude fiber, and carbohydrates. The moisture content of the material affects all the physical properties of the extrudates at $p<0.05$. The interaction between the two factors also had a significant effect ($p<0.05$) on all physical properties of extrudates, except that redness was significantly affected only on extrudates before oven, and hardness and water absorption index (WAI) on extrudates after oven. Based on TOPSIS analysis, the most optimal composition and moisture content of material is the composition of 20% mocaf with a moisture content of 14%.

Keywords : *Extrusion, corn grits, mocaf, moisture content, snacks*
Mentors : Dr. Joko Nugroho Wahyu Karyadi, S.T.P., M.Eng.; Dr. Devi Yuni Susanti, S.T.P., M.Sc.