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Lihat Sebelah

# DEVELOPMENT OF SERUNDING FROM AFRICAN CATFISH (*Clarias gariepinus*)

By

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**RESEARCH PROJECT submitted in partial fulfillment of the requirements for the Degree of Bachelor of Food Science (Food Service and Nutrition)**

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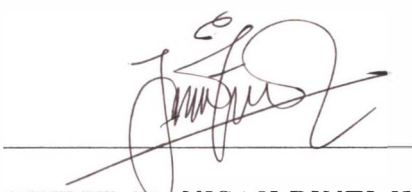
## DECLARATION

I hereby declare that this final year project is based on my original work except for the quotations and citations, which have been duly acknowledged.

21th June 2007



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## ABSTRACT

This research was conducted to develop serunding from African catfish (*Clarias gariepinus*). Proximate analysis, physical analysis, ascorbic acid analysis, mineral analysis and sensory evaluation were carried out to determine the nutrient compositions and consumer acceptance towards the products. 4 samples of serunding were prepared with 3 different sizes (30-40 cm, 40-50 cm, 50-60 cm) of African catfish and control was prepared using Round Scad fish ('ikan selayang') with same amount of fish flesh in each sample. The proximate analysis showed that there were significant ($p<0.05$) different between each sample in moisture, ash, protein and carbohydrate content but there were no significant ($p<0.05$) different in fat and crude fiber content. 'L', 'a' and 'b' value slightly decreased as the larger sizes of African catfish used in making serunding. It showed that the larger the size of catfish gave the darker colour of serunding being produced. Water activity ($a_w$) values in serunding were ranged from 0.76 to 0.91. However, $a_w$ values in serunding tend to increased when the larger size of African catfish used due to high moisture and fat content. Ascorbic acid content in serunding was ranged between 19.54 to 41.11 mg/100g and has been increased as the larger size of catfish was being used. In mineral analysis, 4 minerals (magnesium, copper, iron and calcium) have been detected in this African catfish serunding. Results showed that there were no significant ($p<0.05$) different in copper and iron content. It was observed that the smaller size (30-40 cm) of African catfish being used, the higher mineral content in serunding. Results from sensory evaluation which was done by 50 untrained panels showed that increased level of panel acceptance for colour, taste, mouthfeel and overall acceptance attributes as the size of African catfish was being used in serunding increased. However, the acceptance of panels for aroma attribute more to control and panels more prefer texture of serunding made from 40-50cm of African catfish. Overall, each sample were well accepted by panels but the larger size (50-60 cm) of African catfish was the most accepted although it contained less nutritional value as compared to small size of African catfish.

# PENGHASILAN SERUNDING DARIPADA IKAN KELI AFRIKA (*Clarias gariepinus*)

## ABSTRAK

Kajian ini telah dilakukan bagi menghasilkan serunding daripada ikan keli Afrika (*Clarias gariepinus*). Analisis proksimat, analisis fizikal, analisis asid askorbik, analisis mineral dan penilaian sensori telah dilakukan untuk menentukan komposisi nutrien dan penerimaan pengguna terhadap produk serunding yang dihasilkan. Sebanyak empat jenis sampel serunding telah dihasilkan. Tiga daripadanya dihasilkan menggunakan ikan keli Afrika yang berlainan saiz iaitu 30-40 cm, 40-50 cm dan 50-60 cm manakala kawalan dihasilkan menggunakan ikan Selayang dengan kuantiti isi ikan yang sama bagi setiap sampel. Analisis proksimat menunjukkan terdapat perbezaan yang signifikan ($p<0.05$) diantara setiap sampel bagi kandungan kelembapan, abu, protein dan juga karbohidrat tetapi tiada perbezaan yang signifikan ($p<0.05$) bagi kandungan lemak dan serabut kasar. Nilai 'L', 'a' dan 'b' semakin berkurang dengan penggunaan ikan keli Afrika yang bersaiz besar dalam menghasilkan serunding. Kajian menunjukkan ikan keli yang bersaiz besar memberikan warna yang gelap pada serunding yang dihasilkan. Nilai aktiviti air ($a_w$) bagi serunding pula adalah diantara 0.76-0.91. Walau bagaimanapun, nilai $a_w$ serunding semakin meningkat apabila menggunakan ikan keli Afrika yang bersaiz besar disebabkan kandungan kelembapan dan lemak yang tinggi. Kandungan asid askorbik dalam serunding pula adalah diantara 19.54-41.11 mg/100g dan jumlahnya semakin meningkat apabila menggunakan ikan keli bersaiz besar. Melalui analisis mineral, terdapat 4 jenis mineral (magnesium, kuprum, ferum dan kalsium) telah dikenalpasti dalam serunding ikan keli Afrika. Keputusan kajian menunjukan tiada perbezaan yang signifikan ($p<0.05$) bagi kandungan kuprum dan ferum. Kajian mendapati bahawa kandungan mineral di dalam serunding adalah tinggi apabila menggunakan ikan keli Afrika yang bersaiz kecil (30-40 cm). Hasil daripada penilaian sensori yang telah dilakukan ke atas 50 panel tidak terlatih mendapati pertambahan saiz ikan keli Afrika menyebabkan penerimaan panel semakin bertambah bagi atribut warna, rasa, 'mouthfeel' dan penerimaan keseluruhan. Walau bagaimanapun, penerimaan panel bagi atribut aroma lebih kepada kawalan dan panel lebih gemar tekstur serunding yang dihasilkan menggunakan ikan keli Afrika yang bersaiz 40-50 cm. Secara keseluruhannya, setiap jenis sampel serunding yang dihasilkan diterima baik oleh panel tetapi kebanyakan panel lebih menggemari serunding yang dihasilkan menggunakan ikan keli bersaiz besar (50-60 cm) walaupun ia mempunyai nilai pemakanan yang kurang berbanding ikan keli Afrika yang bersaiz kecil.