

EFFECT OF SWEET POTATTO (*Ipomoea batatas* L.) FLOUR TO
THE PROPERTIES OF MARINE WHITE FLESH FISH'S FISH
BALL AND CAT FISH'S FISH BALL

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EFFECT OF SWEET POTATO (*Ipomoea batatas L.*) FLOUR TO THE PROPERTIES
OF MARINE WHITE FLESH FISH'S FISH BALL
AND CAT FISH'S FISH BALL

By
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I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged.

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ABSTRACT

This study was conducted in order to determine the effect of sweet potato (*Ipomoea batatas L.*) to the properties of marine white flesh fish' fish ball and cat fish's fish ball. Sweet potato flour was actually one of food product that can be produced from sweet potato and had a potential to substitute wheat flour because it's high in diet fiber, vitamin C, and beta-carotene. In this study, sweet potato flour was produced, followed by production of surimi from marine white flesh fish and cat fish, and finally fish balls were produced. Four samples of fish balls were produced. In fish ball production, standard wheat flour was been substitute with sweet potato flour. Once the fish balls were finish, proximate analysis, quality assessments, and sensory evaluation were conducted. Range of proximate composition of four fish ball samples were moisture content (21.6 - 28.3 %), protein content (17.6 - 27.4 %), fat content (0.8 - 5.9 %), and ash content (0.8 - 0.9 %). Range for gel strength was between 104.68 gcm until 174.45 gcm. Folding test also been conducted, white flesh fish's fish balls had C grade while cat fish's fish ball had D grade. Fish ball using wheat flour had higher whiteness value compared to fish ball using sweet potato flour which had negative value of whiteness. This was because the color of fish balls using sweet potato flour was orange-red while fish balls using wheat flour was white. Cat fish's fish ball using sweet potato flour was most acceptable products in most categories (elasticity, hardness, juiciness, chewiness, and overall acceptance) in terms of panelist acceptance.

ABSTRAK

Kajian ini di jalankan bertujuan untuk mengenalpasti kesan penggunaan tepung ubi keledak (*Ipomoea batatas L.*) terhadap ciri-ciri bebola ikan dari ikan laut isi putih dan bebola ikan dari ikan keli. Tepung ubi keledak merupakan salah satu produk yang boleh dihasilkan daripada ubi keledak dan berpotensi digunakan untuk menggantikan tepung gandum kerana tepung ubi keledak mempunyai kandungan serabut diet, vitamin C dan beta-karotene yang lebih tinggi. Dalam kajian ini, tepung ubi keledak dihasilkan, diikuti penghasilan surimi dari dua jenis ikan iaitu, ikan laut isi putih dan ikan keli, dan akhir sekali bebola ikan dari kedua-dua jenis dihasilkan. Empat sampel bebola ikan dihasilkan. Ubi keledak yang segar di proses menjadi tepung dan di simpan pada suhu bilik. Kemudian, surimi iaitu isi ikan yang telah diproses dihasilkan bagi menghasilkan bebola ikan. Dalam pemprosesan bebola ikan, kandungan tepung gandum yang digunakan di dalam formulasi standard bebola digantikan dengan tepung ubi keledak yang digunakan. Setelah produk bebola ikan sedia di hasilkan, analisis komposisi proksimat, penilaian kualiti dan juga penilaian penerimaan pengguna dijalankan bagi mengetahui kesan penggunaan tepung ubi keledak tersebut ke atas bebola. Julat komposisi proksimat bagi keempat-empat sampel adalah kandungan kelembapan (21.6 - 28.3 %), kandungan protein (17.6 - 27.4 %), kandungan lemak (0.8 - 5.9 %), dan kandungan abu (0.8 - 0.9 %). Julat nilai kekuatan gel pula antara 104.68 hingga 174.45. Ujian lipatan juga dijalankan, bebola ikan dari ikan isi putih di dapati mempunyai gred C manakala ikan keli adalah gred D. Bebola ikan menggunakan tepung gandum mempunyai nilai keputihan yang tinggi berbanding bebola ikan yang menggunakan tepung ubi keledak. Ini kerana, warna bebola ikan menggunakan tepung ubi keledak adalah oren-merah manakala bebola ikan yang menggunakan tepung gandum adalah putih. Bebola ikan daripada ikan keli yang menggunakan tepung ubi keledak paling di terima bagi semua kategori (keanjalan, kekerasan, kandungan jus, kekenyalan, dan penerimaan keseluruhan) berdasarkan penerimaan panel.