ABSTRACT

MODIFICATION OF ARROWROOT (*MARANTA ARUNDINACEA*FLOUR) STICK BISCUITS WITH THE ADDITION OF CASHEW NUTS AND TILAPIA AS CRUCIAL PROVIDING SUPPLEMENTARY FOOD FOR UNDERWEIGHT TODDLERS

(Analysis of Energy Content, Protein Levels, Protein Digestibility, Fat, and Organoleptic Properties)

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Underweight in toddlers is a nutritional problem that has a negative impact on physical growth and development. This problem can be overcome through innovation in making local food-based supplementary foods. This study aims to analyze the differences in arrowroot flour stick biscuits, with the addition of cashew nuts and tilapia fish on energy content, protein, protein digestibility, fat and organoleptic. This study used a type of true experimental laboratory research. The research design was a completely randomized design (CRD) consisting of 3 treatments and 1 control with the ratio of arrowroot flour, cashew nuts, and tilapia with formulations F0 (100:0:0), F1 (80:15:5), F2 (70:20:10), F3 (60:25:15) with 3 repetitions of analysis. The test method of energy content (by atwater), protein (kjeldahl), protein digestibility (enzymatic), fat content (soxhlet) and organoleptic with research subjects amounted to 50 untrained panelists consisting of 25 mothers of toddlers and 25 toddlers. Data analysis of energy content, protein content, protein and fat digestibility with One Way Anova test followed by post hoc Duncan and organoleptic test data using Kruskal Wallis ($p < 0.05$). The results of the study on significant differences in energy content, protein, protein digestibility and fat in arrowroot flour stick biscuits, cashew nuts and tilapia fish ($p = 0.000$). The results of organoleptic tests on mothers of toddlers with color parameters show a value ($p = 0.864$), texture ($p = 0.791$), taste ($p = 0.806$) and aroma ($p = 0.924$), while in toddlers the value of favorability ($p = 0.861$). There are significant differences in energy content, protein, protein digestibility, fat and there are no significant differences in organoleptic tests on arrowroot, cashew nut and tilapia flour stick biscuits.

Keywords: Energy content, macronutrients, organoleptic, protein digestibility, stick biscuits.

ABSTRAK

MODIFIKASI BISKUIT STIK TEPUNG GARUT DENGAN PENAMBAHAN KACANG METE DAN IKAN NILA SEBAGAI MAKANAN TAMBAHAN BALITA *UNDERWEIGHT*

(Analisis kandungan energi, kadar protein, daya cerna protein, lemak dan organoleptik)

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Underweight pada balita merupakan masalah gizi yang memiliki dampak negatif pada pertumbuhan dan perkembangan fisik. Masalah ini dapat diatasi melalui inovasi pembuatan makanan tambahan berbasis pangan lokal. Penelitian ini bertujuan untuk menganalisis perbedaan biskuit stik tepung garut, dengan penambahan kacang mete dan ikan nila terhadap kandungan energi, protein, daya cerna protein, lemak dan organoleptik. Penelitian ini menggunakan jenis penelitian *true experimental laboratory*. Desain penelitian Rancangan Acak Lengkap (RAL) yang terdiri dari 3 perlakuan dan 1 kontrol dengan perbandingan tepung garut, kacang mete, dan ikan nila dengan formulasi F0 (100:0:0), F1(80:15:5), F2(70:20:10), F3(60:25:15) dengan 3 kali pengulangan analisis. Metode uji kandungan energi (*by atwater*), protein (*kjeldahl*), daya cerna protein (enzimatis), kadar lemak (*soxhlet*) dan organoleptik dengan subyek penelitian berjumlah 50 orang panelis tidak terlatih yang terdiri dari 25 ibu balita dan 25 balita. Analisis data kandungan energi, kadar protein, daya cerna protein dan lemak dengan uji One Way Anova dilanjutkan dengan post hoc Duncan dan data uji organoleptik menggunakan Kruskal Wallis (p < 0,05). Hasil penelitian terhadap perbedaan nyata kandungan energi, kadar protein, daya cerna protein dan lemak pada biskuit stik tepung garut, kacang mete dan ikan nila (p = 0,000) . Hasil uji organoleptik pada ibu balita dengan parameter warna menunjukan nilai (p = 0,864), tektur (p = 0,791), rasa (p = 0,806) dan aroma (p = 0,924), sedangkan pada balita nilai tingkat kesukaan (p = 0,861). Terdapat perbedaan nyata kandungan energi, kadar protein, daya cerna protein, lemak dan tidak terdapat perbedaan yang signifikan uji organoleptik pada biskuit stik tepung garut, kacang mete dan ikan nila.

Kata Kunci: Biskuit stik, daya cerna protein, kandungan energi, organoleptik, zat gizi makro.