

ABSTRAK

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FORMULASI BABY PUFF SEBAGAI CAMILAN SUMBER PROTEIN BERBAHAN TEPUNG IKAN LELE UNTUK ANAK USIA 2-3 TAHUN

Perkembangan dan pertumbuhan anak usia 2-3 tahun menyebabkan perubahan pola makan yang berpotensi menyebabkan asupan gizi khususnya protein tidak optimal. Pengembangan camilan berbahan tepung ikan lele dapat menjadi alternatif pemenuhan kebutuhan protein anak. Penelitian ini bertujuan untuk mengidentifikasi perbedaan daya terima, kandungan protein, kadar air dan activity water pada *baby puff* sebagai camilan sumber protein. Penelitian ini menggunakan desain Rancangan Acak Lengkap (RAL) dengan empat formulasi dan dua ulangan. Formulasi dengan perbandingan tepung beras: tepung maizena: tepung ikan lele pada F0 (75%:25%:0%), F1 (62,5%:25%:12,5%), F2 (62,5%:12,5%:25%), dan F3 (50%:25%:25%). Uji organoleptik yang dilakukan oleh 30 panelis semi terlatih menilai warna, aroma, rasa dan tekstur dianalisis menggunakan metode *Kruskal-wallis* dengan uji lanjut *Mann-Whitney*. Kandungan protein diuji menggunakan metode Kjeldahl, kadar air diuji menggunakan metode SNI 2886:2015 serta uji activity water menggunakan activity water meter. Data *activity water* dianalisis menggunakan *Kruskal-wallis*. Hasil menunjukkan terdapat perbedaan nyata pada parameter warna dengan $p=0,002$. Hasil analisis kandungan meningkat seiring penambahan tepung ikan lele dengan nilai tertinggi F2 (27,82%) yang memenuhi karakteristik camilan tinggi protein dan memenuhi 10% kebutuhan protein anak. Formula dengan kadar air terendah ialah F2 (3,87%). Formula F2 dan F3 memenuhi standar kandungan kadar air SNI 2886:2015 ($<4\%$). Nilai activity water tidak berbeda nyata ($p>0,05$), keempat formula memenuhi standar activity water pangan kering (0,3-0,6). Peneliti selanjutnya disarankan untuk melakukan uji *food acceptance test* pada anak usia 2-3 tahun agar hasil penerimaan sesuai dengan preferensi dan Tingkat kesukaan anak khususnya pada parameter rasa.

Kata kunci: *activity water*, *baby puff*, kadar air, protein, tepung ikan lele,

ABSTRACT

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FORMULATION OF BABY PUFF SNACK FOR CHILDREN AGED 2-3 YEARS AS A PROTEIN SOURCE BASED ON CATFISH FLOUR

Growth and development in children aged 2–3 years are associated with changes in dietary patterns that may lead to inadequate protein intake. The development of snacks enriched with catfish flour may provide an alternative strategy to help meet children's protein requirements. This study aimed to evaluate the effects of different levels of catfish flour substitution on the acceptability, protein content, moisture content, and water activity (aw) of baby puff snacks as a protein source. A Completely Randomized Design (CRD) with four formulations and two replications was employed. The formulations consisted of varying proportions of rice flour, cornstarch, and catfish flour: F0 (75%:25%:0%), F1 (62.5%:25%:12.5%), F2 (62.5%:12.5%:25%), and F3 (50%:25%:25%). Acceptability testing was conducted by 30 semi-trained panelists who evaluated color, aroma, taste, and texture. The data were analyzed using the Kruskal–Wallis test followed by the Mann–Whitney post-hoc test. Protein content was determined using the Kjeldahl method, moisture content was determined according to SNI 2886:2015, and water activity was measured using a water activity meter. Water activity data were analyzed using the Kruskal–Wallis test. The results showed a significant difference in color scores ($p = 0.002$). Protein content increased as the proportion of catfish flour increased, with the highest value observed in F2 (27.82%). This formulation met the criteria for a high-protein snack and contributed approximately 10% of the daily protein requirement of children. F2 had the lowest moisture content (3.87%), while both F2 and F3 complied with the SNI 2886:2015 standard for moisture content ($<4\%$). No significant differences were observed in water activity values ($p > 0.05$), and all formulations met the recommended water activity range for dried foods (0.3–0.6). Future studies should include food acceptance testing among children aged 2–3 years to better reflect their preferences and levels of liking, particularly with respect to taste.

Keywords: *baby puff, catfish flour, moisture content, protein, water activity,*