



**UNIVERSITAS ANDALAS**  
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**PENGEMBANGAN PRODUK *CRACKERS* DENGAN SUBSTITUSI TEPUNG**  
**IKAN LAYUR (*Trichiurus lepturus*) DAN TEPUNG LABU KUNING**  
**(*Curcubita moschata*) SEBAGAI ALTERNATIF CAMILAN**  
**BAGI ANAK USIA SEKOLAH**

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xii + 100 halaman, 40 tabel, 19 gambar, 11 lampiran

**ABSTRAK**

**Tujuan Penelitian**

Penelitian ini bertujuan untuk mengembangkan produk *crackers* dengan substitusi tepung ikan layur dan tepung labu kuning terhadap uji organoleptik dan kandungan zat gizi sebagai alternatif camilan bagi anak usia sekolah.

**Metode**

Penelitian menggunakan desain *true experiment* dengan Rancangan Acak Lengkap (RAL) yang menggunakan 4 taraf perlakuan (F0, F1, F2, dan F3) dan 2 kali pengulangan setiap proses sampelnya. Uji organoleptik meliputi uji hedonik dan mutu hedonik yang melibatkan 35 orang panelis semi terlatih. Uji kandungan zat gizi meliputi uji kadar air, abu, lemak, protein, karbohidrat, dan total karotenoid. Data dianalisis menggunakan metode *Kruskal-Wallis* dan *one way ANOVA* dilanjutkan dengan metode *Mann-Whitney* dan *Duncan* apabila terdapat perbedaan nyata.

**Hasil**

Hasil menunjukkan adanya perbedaan nyata antar taraf perlakuan tingkat kesukaan dan mutu hedonik terhadap warna, aroma, rasa, tekstur serta kandungan gizi berupa kadar air, abu, lemak, protein, karbohidrat, dan total karotenoid ( $p\text{-value} < 0,05$ ). Berdasarkan hasil *scoring* didapatkan formula terbaik adalah F1 dengan karakteristik warna serta aroma netral, rasa agak gurih, dan tekstur agak renyah. Produk tersebut memenuhi 10% kebutuhan gizi anak usia sekolah serta memenuhi klaim sumber protein dan vitamin A.

**Kesimpulan**

Formula terbaik dari penelitian ini adalah F1 dengan substitusi tepung ikan layur sebanyak 10% dan tepung labu kuning sebanyak 10%.

**Daftar Pustaka** : 125 (1984-2025)

**Kata Kunci** : *Crackers*, *Trichiurus lepturus*, Labu Kuning, Camilan

**FACULTY OF PUBLIC HEALTH  
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**DEVELOPMENT OF CRACKERS WITH THE SUBSTITUTION OF  
RIBBON FISH FLOUR (*Trichiurus lepturus*) AND PUMPKIN FLOUR  
(*Curcubita moschata*) AS AN ALTERNATIVE SNACK FOR  
SCHOOL-AGE CHILDREN**

xii + 100 pages, 40 tables, 19 images, 11 attachments

**ABSTRACT**

**Objective**

This study aimed to develop crackers using a combination of ribbon fish flour and pumpkin flour, evaluated through organoleptic tests and nutritional content, as an alternative snack for school-age children.

**Method**

This study used a true experiment on crackers by adding ribbon fish flour and pumpkin flour. The research design employed is a Completely Randomized Design (CRD), which utilizes four levels of treatment: F0, F1, F2, and F3, with two repetitions of each sample process. Organoleptic tests included hedonic and sensory quality tests involving 35 semi-trained panelists. Nutrient content test included moisture, ash, fat, protein, carbohydrate, and total carotenoid. Data analysis of the results of the study using the Kruskal-Wallis method and one-way ANOVA. Results with significant differences were further tested with the Mann-Whitney and Duncan methods.

**Result**

The results of statistical analysis showed that there were significant differences in the level of treatment of color, aroma, taste, and texture of crackers, as well as nutritional content in the form of water content, ash, fat, protein, carbohydrates, and total carotenoids ( $p$ -value  $< 0.05$ ). Based on the results of the hedonic test data scoring and nutritional content test, the best formula from this study is F1, with the characteristics of neutral color and aroma, slightly savory taste, and slightly crunchy texture. The product can meet 10% of the nutritional needs of school-age children and fulfill the claims of protein and vitamin A sources.

**Conclusions**

Based on each treatment level, the best formula of this research is F1 with 10% ribbon fish flour and 10% pumpkin flour.

**References** : 125 (1984-2025)

**Keywords** : Crackers, *Trichiurus lepturus*, Pumpkin, Snack