

# Nutritional, Physicochemical, and Sensory Evaluation of Biscuits Enriched with *Ulva* sp. from Gunungkidul Coast

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## ABSTRACT

*Ulva* sp, a seaweed commonly found on Gunungkidul Coast, had potential as a source of functional food that contained high antioxidants, protein, and dietary fiber. *Ulva* sp was developed into biscuits, one of the most popular foods in Indonesia. This study aimed to investigate the physicochemical and sensory evaluation of biscuits enriched with *Ulva* sp. Nutritional value, antioxidant activity, dietary fiber, texture, color, appearance, and sensory evaluation were studied. *Ulva* sp. was collected from Gunungkidul Coast and treated using 5% lime for fishy-smell removed, then dried to produce *Ulva* sp. powder. The *Ulva* sp powder was used for biscuit enrichment with substitution 0% powder (STD); 3% powder (BC3); 5% powder (BC5); 7% powder (BC7). Biscuits enriched with *Ulva* sp. increased the protein, fat, and ash content, while the carbohydrate content decreased ( $p < 0.05$ ). The more *Ulva* sp was substituted in biscuits, the higher antioxidant activities and dietary fibers were measured ( $p < 0.05$ ). The crunchiness of BC5 ( $139.95 \pm 28.84$  Nmm) was high, and no significant difference with STD ( $393.05 \pm 34.11$  Nmm), while the crispiness and the hardness of enriched biscuits were lower than STD. The lightness ( $L^*$ ), redness ( $a^*$ ), and yellowness ( $b^*$ ) of enriched biscuits were lower than STD because the *Ulva* sp. powder contributed to giving dark-greenish colors. Sensory evaluation showed that BC5 has accepted in appearance, aroma, taste, flavor, texture, aftertaste, and overall (there was no difference with STD). Thus, biscuits enriched with *Ulva* sp were confirmed to improve nutritional and physicochemical, and it has sensory evaluation acceptance.

Kata Kunci: *Biscuits, Ulva* sp, *physicochemical, antioxidant, dietary fiber, sensory evaluation*