

# DEVELOPMENT OF FISH AND SEAWEED-BASED FOOD PRODUCTS TO PREVENT ANEMIA AND CHRONIC ENERGY DEFICIENCY OF YOUNG WOMEN IN GUNUNGKIDUL DISTRICT

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## ABSTRACT

The most common nutritional problems found in young women are anemia and chronic energy deficiency (CED). Both of these nutritional problems need to be addressed comprehensively from various fields, one of which is through nutritional intervention through the development of fish and seaweed-based food products that are rich in protein and iron.

The aim of this study was to develop fish and seaweed-based food products to prevent anemia and chronic energy deficiency (CED) in young women, especially in Kapanewon Purwosari, Gunungkidul Regency. The specific objectives of this study include 1) determining the formulation, physicochemical, and sensory properties of tilapia and seaweed nuggets, 2) determining the formulation, physicochemical, and sensory properties of tilapia and seaweed crackers, and 3) determining the nutritional information of nuggets and crackers from tilapia and seaweed so that they have the potential to prevent anemia and KEK in young women.

The stages of the research consisted of 1) preparation of tilapia fish flour and seaweed flour, 2) formulation of tilapia fish nuggets and seaweed, 3) formulation of crackers from tilapia fish flour and seaweed, 4) determination of proximate, iron, color, texture, and the level of preference for nuggets and crackers made from tilapia and seaweed, and 5) determination of the nutritional information of tilapia and seaweed nuggets and crackers products.

The results showed that the formula for tilapia nuggets and *Ulva lactuca* seaweed which had the highest levels of protein and iron was obtained in F2 (addition of 8% *Ulva lactuca* seaweed) with an overall preference categorized as liked. The formula for tilapia crackers and *Ulva lactuca* seaweed which had the highest levels of protein and iron was obtained by substituting 25% tilapia flour and adding 1% *Ulva lactuca* seaweed flour with an overall preference level being preferred. Nutritional information of tilapia nuggets and *Ulva lactuca* seaweed per serving (75 g) can provide a total energy of 198 kcal, energy from fat 75 kcal, fat 8 g (13% RDA), protein 9 g (12% RDA), carbohydrates 22 g (7% RDA), and 7 mg iron (60% RDA) based on 2100 kcal caloric needs for young women aged 13-18 years. Meanwhile, the nutritional information of tilapia crackers and *Ulva lactuca* seaweed per serving (25 g) can provide a total energy of 120 kcal, energy from fat 50 kcal, fat 6 g (9% RDA), protein 6 g (8% RDA), 12 g carbohydrates (4% RDA), and 2 mg iron (19% RDA) based on calorie needs of 2100 kcal for young women aged 13-18 years.

Kata Kunci: *tilapia*, *Ulva lactuca*, *nugget*, *crackers*, *iron*