

ABSTRAK

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PENGEMBANGAN FORMULASI BAKSO SAPI DENGAN PENAMBAHAN
DAUN KELOR DAN IKAN TUNA SEBAGAI KUDAPAN ALTERNATIF BAGI
PENCEGAHAN ANEMIA PADA REMAJA

viii + 61 halaman + 13 tabel + 8 lampiran

Anemia defisiensi besi masih menjadi isu gizi mendesak di kalangan remaja putri. Hal ini biasanya dipicu oleh tingginya kebutuhan zat besi saat tumbuh kembang, pendarahan rutin saat haid, minimnya asupan pangan kaya zat besi, hingga potensi infeksi parasit yang menghambat penyerapan nutrisi tersebut. Sebagai bentuk intervensi, pangan fungsional berbasis bahan lokal seperti bakso sapi yang diperkaya daun kelor dan ikan tuna mulai dikembangkan. Kombinasi ini memanfaatkan kandungan zat besi, vitamin C, dan senyawa bioaktif pada daun kelor, serta protein hewani dan zat besi dari ikan tuna yang krusial dalam pembentukan hemoglobin. Penelitian eksperimental semu (*quasi-experiment*) dengan desain *post-test only control group* ini dilakukan untuk menilai daya terima konsumen sekaligus mengukur kadar zat besi produk. Terdapat tiga variasi yang diuji: F0 (kontrol), F1 (penambahan daun kelor dan tuna), serta F2 (penambahan dosis lebih tinggi). Sebanyak 25 panelis dilibatkan untuk menilai parameter warna, aroma, rasa, dan tekstur, yang kemudian datanya diolah menggunakan uji *Kruskal-Wallis* dan *Mann-Whitney*. Hasil analisis *Kruskal-Wallis* mengonfirmasi adanya perbedaan signifikan ($p < 0,05$) pada seluruh parameter organoleptik. Produk F2 cenderung kurang diminati karena konsentrasi kelor dan tuna yang tinggi mengubah profil rasa hingga tekstur bakso secara mencolok. Oleh karena itu, F1 terpilih sebagai formula terbaik untuk diuji laboratorium lebih lanjut. Hasilnya, kadar zat besi pada F1 melonjak menjadi 2,55 mg/100 g dibandingkan F0 yang hanya sebesar 1,43 mg/100 g. Dapat disimpulkan bahwa substitusi daun kelor dan ikan tuna terbukti memengaruhi daya terima sekaligus meningkatkan kandungan zat besi bakso sapi, di mana variasi F1 berpotensi kuat untuk dijadikan alternatif camilan pencegah anemia remaja.

Kata kunci: Bakso, Daun Kelor, Ikan Tuna, Zat Besi, Anemia, Remaja Putri

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ABSTRACT

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FORMULATION DEVELOPMENT OF BEEF MEATBALLS ENRICHED WITH MORINGA LEAVES AND TUNA FISH AS AN ALTERNATIVE SNACK FOR ANEMIA PREVENTION AMONG ADOLESCENTS

viii + 61 pages + 13 tables + 8 appendices

Iron-deficiency anemia remains a pressing nutritional issue among adolescent girls. This is typically caused by high iron requirements during growth and development, regular menstrual bleeding, insufficient intake of iron-rich foods, and potential parasitic infections that hinder the absorption of this nutrient. As an intervention, functional foods based on local ingredients—such as beef meatballs enriched with moringa leaves and tuna—are being developed. This combination leverages the iron, vitamin C, and bioactive compounds in moringa leaves, as well as the animal protein and iron from tuna—all of which are crucial for hemoglobin production. A quasi-experimental study with a post-test-only control group design was conducted to assess consumer acceptance and measure the product's iron content. Three variations were tested: F0 (control), F1 (with added moringa leaves and tuna), and F2 (with a higher dose of moringa leaves). A total of 25 panelists were involved in evaluating the parameters of color, aroma, taste, and texture; the data were then analyzed using the Kruskal-Wallis and Mann-Whitney tests. The results of the Kruskal-Wallis analysis confirmed the presence of significant differences ($p < 0.05$) in all organoleptic parameters. The F2 product tended to be less popular because the high concentrations of moringa and tuna significantly altered the meatball's flavor profile and texture. Therefore, F1 was selected as the best formula for further laboratory testing. As a result, the iron content in F1 surged to 2.55 mg/100 g compared to F0, which was only 1.43 mg/100 g. It can be concluded that the substitution of moringa leaves and tuna has been proven to influence acceptability while increasing the iron content of beef meatballs, with the F1 variant showing strong potential as an alternative snack for preventing anemia in adolescent girls.

Keywords: Meatballs, Moringa Leaves, Tuna, Iron, Anemia, Adolescent Girls

Reading List: 30 journals (2020–2025)