

ABSTRAK

Penelitian ini bertujuan untuk memformulasikan produk fortifikasi garam sehat menggunakan serbuk lada hitam (*Piper nigrum*) serta mengevaluasi kandungan proksimat, vitamin C, sifat organoleptik, dan Angka Kecukupan Gizi (AKG) dari produk tersebut. Fortifikasi dilakukan dengan variasi konsentrasi lada hitam sebesar 0%, 5%, 10%, 15%, 20%, dan 25% terhadap berat total garam. Produk hasil fortifikasi diuji meliputi kadar air, abu, lemak, protein, dan karbohidrat menggunakan metode analisis proksimat standar. Selain itu, kandungan vitamin C dianalisis menggunakan metode titrasi iodometri, sedangkan uji organoleptik dilakukan oleh panelis untuk menilai atribut warna, aroma, tekstur, dan rasa. Hasil penelitian menunjukkan bahwa penambahan lada hitam berpengaruh signifikan ($p < 0,05$) terhadap kandungan nutrisi dan sifat sensori produk garam fortifikasi. Formulasi terbaik diperoleh pada konsentrasi lada hitam tertentu yang mampu meningkatkan nilai gizi tanpa mengurangi penerimaan sensori oleh panelis. Kandungan vitamin C, lemak, dan protein cenderung meningkat seiring bertambahnya konsentrasi lada hitam, sedangkan kadar air dan abu relatif stabil. Perhitungan AKG menunjukkan kontribusi nutrisi yang potensial dari produk garam fortifikasi ini terhadap kebutuhan harian tubuh. Fortifikasi garam dengan lada hitam tidak hanya meningkatkan kualitas nutrisi produk tetapi juga memberikan nilai tambah fungsional sebagai antibakteri alami. Penelitian ini diharapkan dapat menjadi alternatif pengembangan produk garam fungsional berbasis bahan alami di Indonesia.

Kata kunci: fortifikasi, garam sehat, lada hitam, proksimat, organoleptik, AKG

ABSTRACT

This study aimed to formulate a fortified healthy salt product using black pepper powder (*Piper nigrum*) and to evaluate its proximate composition, vitamin C content, organoleptic properties, and Nutritional Adequacy Ratio (AKG). Fortification was carried out with various concentrations of black pepper at 0%, 5%, 10%, 15%, 20%, and 25% of the total salt weight. The fortified products were analyzed for moisture, ash, fat, protein, and carbohydrate content using standard proximate analysis methods. Vitamin C content was determined by iodometric titration, while sensory evaluation was conducted by a panel to assess color, aroma, texture, and taste attributes. The results showed that the addition of black pepper significantly ($p < 0.05$) affected the nutritional content and sensory properties of the fortified salt products. The best formulation was obtained at a certain concentration of black pepper, which enhanced the nutritional value without reducing the panelists' acceptance. The levels of vitamin C, fat, and protein tended to increase with higher black pepper concentrations, while moisture and ash content remained relatively stable. The AKG calculation indicated that the fortified salt product potentially contributes to meeting daily nutritional requirements. Fortifying salt with black pepper not only improves the nutritional quality of the product but also adds functional value as a natural antibacterial agent. This study is expected to serve as an alternative for the development of functional salt products based on natural ingredients in Indonesia.

Keywords: fortification, healthy salt, black pepper, proximate analysis, organoleptic, nutritional adequacy ratio