

Pengaruh Penambahan Tepung Tulang Ikan Tongkol (*Euthynnus affinis*) dan Tinta Cumi (*Loligo sp.*) Terhadap Kadar Air, Kalsium, dan Organoleptik Kaldu Bubuk Karapas Udang Vannamei (*Litopenaeus vannamei*)

Salsabila Halomoan Putri¹, Nuryanto¹, Ayu Rahadiyanti¹, Ninik Rustanti¹

ABSTRAK

Latar Belakang : MSG merupakan Bahan Tambahan Pangan yang memberikan rasa gurih pada masakan.. Dosis harian dalam mengonsumsi MSG yang telah ditetapkan oleh *World Health Organization* (WHO) sebanyak 120 mg/kgBB/hari. Pengonsumsi MSG yang melebihi anjuran dapat menyebabkan gangguan metabolisme pada tubuh seperti obesitas, hipertensi dan diabetes mellitus. Salah satu upaya yang dapat dilakukan untuk mencegah dampak yang dihasilkan MSG adalah dengan membuat produk alternatif yang dapat dibuat dengan hasil limbah perikanan seperti karapas udang, tulang ikan tongkol, dan tinta cumi.

Tujuan : Untuk mengetahui pengaruh penambahan tepung tulang ikan tongkol (TTI) dan bubuk tinta cumi (BTC) pada kadar air, kalsium, dan organoleptik terhadap kaldu bubuk karapas udang (BKU).

Metode : Penelitian ini merupakan penelitian eksperimental dengan desain Rancangan Acak Lengkap (RAL). Produk berupa kaldu bubuk dengan penambahan tepung tulang ikan tongkol dan bubuk tinta cumi dari berbagai formulasi, yaitu F0 (kontrol), F1 (50% BKU: 30% TT I: 20% BTC), F2 (50% BKU : 20% TT I: 30% BTC), F3 (50% BKU : 25% TTI : 25% BTC). Analisis kadar air menggunakan metode oven, kadar kalsium menggunakan metode titrasi permanganometri, dan uji organoleptik dengan menggunakan uji hedonik 9 skala.

Hasil : Terdapat perbedaan yang signifikan ($p < 0,01$) dari kadar air, kadar kalsium, dan organoleptik terhadap penambahan tepung tulang ikan tongkol dan bubuk tinta cumi pada kaldu bubuk karapas udang vannamei dari berbagai formulasi.

Kesimpulan : Penambahan tepung tulang ikan tongkol dan bubuk tinta cumi pada kaldu bubuk karapas udang vannamei memiliki pengaruh signifikan terhadap kadar air, kadar kalsium, dan organoleptik ($p < 0,05$). Namun, kadar air belum sesuai dengan SNI. Penambahan tepung tulang ikan tongkol meningkatkan kadar kalsium pada kaldu bubuk dari berbagai formulasi. Kaldu bubuk dengan formulasi terbaik adalah F1.

Kata Kunci : Kaldu bubuk, kadar air, kadar kalsium, organoleptik, limbah perikanan

¹Program Studi Gizi, Fakultas Kedokteran, Universitas Diponegoro, Semarang

The addition of little tuna bone flour (*Euthynnus affinis*) and squid ink (*Loligo* sp.) affects the water content, calcium, and organoleptic properties of vannamei shrimp carapace (*Litopenaeus vannamei*) powdered stocks

Salsabila Halomoan Putri¹, Nuryanto¹, Ayu Rahadiyanti¹, Ninik Rustanti¹

ABSTRACT

Background : Monosodium glutamate (MSG) is a food additive that adds a savory taste to dishes. The daily dose of MSG consumption set by the World Health Organization (WHO) is 120 mg/kgBW/day. Exceeding these recommendations can result in the development of metabolic disorders, such as obesity, hypertension, and diabetes mellitus. One strategy for minimizing the impact of MSG is to explore alternative products based on fishery waste materials, including shrimp carapace, little tuna bones, and squid ink.

Objective : The objective of this study was to established the effect of the addition of little tuna bone flour (TTI) and squid ink powder (BTC) on the water content, calcium content, and organoleptic properties of shrimp carapace powdered stock (BKU).

Methods : This research used a completely randomized design (CRD) for the experimental phase. The product was a powdered stock with the addition of little tuna bone flour and squid ink powder from various formulations, namely F0 (control), F1 (50% BKU: 30% TT I: 20% BTC), F2 (50% BKU: 20% TT I: 30% BTC), and F3 (50% BKU: 25% TTI: 25% BTC). The moisture content was analyzed using the oven method, the calcium content was analyzed using permanganometric titration, and an organoleptic test was conducted using a 9-point hedonic scale.

Result : The addition of little tuna bone flour and squid ink powder to vannamei shrimp carapace powdered stock resulted in significantly different ($p < 0.01$) water content, calcium content, and organoleptic properties.

Conclusion : The addition of little tuna bone flour and squid ink powder to vannamei shrimp carapace powdered stock has a significant effect on moisture content, calcium content, and organoleptic properties ($p < 0.05$). However, the water content did not align with the SNI standards. The incorporation of little tuna bone flour resulted in an elevated calcium content in the powdered stock across various formulations. The optimal formulation, F1, exhibited the most promising results.

Keywords : Powdered stock, moisture content, calcium content, organoleptic, fishery waste

¹Nutrition Department, Faculty of Medicine, Diponegoro University, Semarang