

## Intisari

### Deteksi Alergen *Anisakis* sp. pada Ikan Layur (*Trichiurus Lepturus*) di Pantai Selatan Yogyakarta dan Ketahanannya Selama Proses Pemanasan

*Anisakis* sp. merupakan parasit yang umum menginfeksi ikan dan tersebar di seluruh dunia. Parasit ini dapat menimbulkan potensi bahaya bagi manusia terutama jika mengonsumsi ikan terinfeksi yang dimasak secara tidak sempurna. Penelitian ini bertujuan untuk mengetahui prevalensi, intensitas rata-rata, identifikasi spesies larva *Anisakis*, dan potensi alergenis pada ikan layur (*Trichiurus lepturus*) yang ditangkap di Perairan Selatan Yogyakarta, Indonesia. Sebanyak 50 ekor ikan hasil tangkapan nelayan telah dikumpulkan. Setelah diukur panjang dan berat totalnya, sampel diperiksa untuk mengetahui adanya infeksi larva *Anisakis*. Hasil penelitian menunjukkan bahwa larva ditemukan di rongga perut (87,03%), organ (7,95%), gonad (2,93%), dan sistem pencernaan (2,09%). Prevalensi infeksi *Anisakis* cukup tinggi (64%) dengan intensitas rata-rata (7,47 larva/ikan). Analisis lebih lanjut secara molekuler menunjukkan bahwa nematoda tersebut adalah *Anisakis typica*. Identifikasi alergen dilakukan dengan metode deteksi profil protein antigen pada daging ikan yang terinfeksi dan non-infeksi menggunakan metode SDS-PAGE untuk mengetahui pita protein dan menganalisis berat molekulnya dan dilanjutkan dengan uji ketahanan alergen terhadap panas dengan memanaskan daging ikan yang terinfeksi pada suhu 60°C, 90°C, dan 120°C selama 15 menit. Hasil deteksi potensi alergen dari *Trichiurus lepturus* yang terinfeksi *Anisakis* menunjukkan adanya empat pita protein yang berkorelasi dengan alergen *Anisakis* yaitu Ani s 1 (24 kDa), Ani s 2 (97 kDa), Ani s 3 (41 kDa), dan Ani s 7 (139 kDa) pada semua ikan yang terinfeksi baik segar maupun perlakuan panas.

**Kata kunci:** alergen, *Anisakis*, infeksi, intensitas, prevalensi

## Abstract

### Allergen Detection of *Anisakis* Sp. in Largehead Hairtail (*Trichiurus lepturus*) in South Coast of Yogyakarta and Its Resistance During Heat Processing

*Anisakis* sp. is a parasite that are distributed worldwide. They involving marine fish species that can cause harmful potential to human if consuming raw or undecooked infected fish. This study aimed to investigate, prevalence, mean intensity, *Anisakis* larvae species and identified the allergenic potential on *Trichiurus lepturus* caught at South Waters of Yogyakarta, Indonesia. In total of 50 fish that was caught by fisherman have been collected. After measuring total length and weight, samples examined for *Anisakis* larvae infection. The results showed that larvae were found in abdominal cavity (87.03%), organs (7.95%), gonads (2.93%), and digestive system (2.09%). The prevalence of *Anisakis* infection was notably high (64%) with mean intensity (7.47 larvae/fish). Molecular analysis revealed that the nematode was *Anisakis typica*. Therefore, these parasites have potential harm for human health. Consuming infected fish by *Anisakis* can cause allergic reaction even after heating process. The identification was done through protein profile antigen detection of fish flesh both infected and non-infected. Protein profiles were analyzed using SDS-PAGE to reveal protein band and analyze their molecular weight. In this study, heating process was applied (60°C, 90°C, and 120°C) in 15 minutes. The result of allergenic potential detection from *T. lepturus* infected by *Anisakis* showed four protein bands correlated with *Anisakis* allergens Ani s 1 (24 kDa), Ani s 2 (97 kDa), Ani s 3 (41 kDa), and Ani s 7 (139 kDa) in all of the infection fish both fresh and processed.

**Keywords:** alergen, *Anisakis*, Infection, intensity, prevalence