

**MORPHOLOGICAL AND MOLECULAR IDENTIFICATION OF ASCARIDOID
NEMATODES (NEMATODA: ASCARIDOIDEA) IN MACKEREL SCAD,
Decapterus macarellus(Cuvier, 1833)**

By

ARIES PAUL D. PADRON

**An Undergraduate Thesis presented to the faculty of the College of Fisheries
in partial fulfilment of the requirements for the degree of**

BACHELOR OF SCIENCE IN FISHERIES

**Department of Aquatic Postharvest
COLLEGE OF FISHERIES
CENTRAL LUZON STATE UNIVERSITY
Science City of Muñoz, Nueva Ecija**

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ABSTRACT

The study aims to identify and determine the prevalence (P), mean intensity (mI) and abundance (Ab) of anisakid nematodes present in mackerel scad, *Decapterus macarellus*, a common fish food in Bolinao, Pangasinan.

Identification was based in morphological and molecular approaches. Morphological approach was used to identify in genus level while molecular approaches were employed to identify at species level based on cytochrome c oxidase subunit I (COI) region of mitochondrial DNA (mtDNA). Subsequent analysis such as, density of nematodes based on length and weight classes, Pearson correlation between length and weight of fish to number of nematodes, curvilinear regression analysis and phylogenetic analysis were also executed.

Significant findings in this study were; four genera of anisakid nematodes were identified namely, *Anisakis* sp. (P=18%, mI=2.28, Ab=0.41), *Terranova* sp. (P=31%, mI=2.71, Ab=0.84), *Raphidascaris* sp. (P=7%, mI=1.29, Ab=0.09), *Hysterothylacium* sp. (P=7%, mI=1.14, Ab=0.08) and an unidentified nematodes (P=14%, mI=1.86, Ab=0.26), correlation and regression analysis between weight of fish to number of nematodes revealed an inverse/negative relationship. Furthermore, a zoonotic parasite species, *A. simplex*, were identified base on molecular techniques, unidentified nematodes remained unidentified even at molecular level that is suspected to be a different species of ascaridoid nematodes. Phylogenetic analysis revealed that *A. simplex* (sample V4), sample V3 (unidentified), and sample V1 (morphologically identified as *Terranova* sp.) were monophyletic, that is, they were originated from one ancestor.

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