

Francesca Maria Veneziano^{1,2*}, Daniela Giordano², Enrico Armeli-Minicante², Marco Barra³, Antonia Granata^{2,4}, Adriana Profeta², Paola Rinelli², Paola Rumolo³, Davide Salvati², Anna Perdichizzi²

¹ Department of Biological, Geological and Environmental Sciences (BIGEA), University of Bologna - Piazza di Porta S. Donato 1, 40126 Bologna (BO), Italy

² Institute for Marine Biological Resources and Biotechnology of the National Research Council (CNR-IRBIM) - Spianata S. Raineri 86, 98122 Messina (ME), Italy

³ Institute of Marine Sciences of the National Research Council (CNR-ISMAR), Calata Porta di Massa, 80100, Napoli (NA), Italy

⁴ Department of Chemical, Biological, Farmaceutical and Environmental Sciences (CHIBIOFARAM) University of Messina, Viale Ferdinando Stagno D'Alcontres, 31 98166 Messina (ME), Italy

francesca.veneziano2@unibo.it

INTRODUCTION

The European hake, *Merluccius merluccius* (Linnaeus, 1758), is a key demersal fish species in the Mediterranean Sea, widely recognized as an important fisheries resource (FAO, 2021). This species inhabits a broad depth range, from 20 to 1000 m, throughout the Mediterranean Sea and the north-eastern Atlantic (Carpentieri *et al.*, 2005). It's known as an opportunistic predator, since it exhibits considerable variation in its diet influenced by regional differences in prey richness and availability (Carrozzi *et al.*, 2019). This dietary diversity is likely a result of its wide bathymetric distribution (Carpentieri *et al.*, 2005; Cartes *et al.*, 2004). Predator species, such as the European hake, play an important role in energy transfer between trophic levels in marine ecosystems. A comprehensive understanding of the structure of these ecosystems requires identifying the specific groups that these predators affect (Baum and Worm, 2009). For this reason, this study aims to define the feeding characteristics of the European hake in the central-southern Tyrrhenian Sea.

RESULTS AND DISCUSSION

Not considering the 90 everted ones, a total of 130 stomachs have been taken, weighed and analysed. Out of them, 54 were found to be empty (VI = 41.54%), the remaining 76 showed a degree of fullness of approximately 50%. Teleosts were the major group found in the stomach contents (%IRI = 77.11), followed by crustaceans (%IRI = 22.67) and, minimally, by cephalopods (%IRI = 0.01). Results confirm what has been stated in literature about the diet of European hake in the Mediterranean, which has been found to consist mainly of crustaceans, teleost fishes, and cephalopod molluscs (Carpentieri *et al.*, 2005; D'Iglio *et al.*, 2022).



MATERIALS AND METHODS

The samples were collected in december 2023 as part of the MEDITS project (MEDiterranean International bottom Trawl Survey), at depths ranging from 0 to 800 m, using trawl nets in the South and Central Tyrrhenian Sea (GSA10, according to the General Fisheries Commission for the Mediterranean). Hake was caught in 37 out of 56 hauls, for a total of 220 specimens sampled. For each of them biometric data were recorded, including total length, weight, sex and maturity stage. The stomachs have been taken, weighed, their fullness degree assessed, and preserved in 70% ethanol. For the stomach content analysis each prey item has been identified to the lowest taxonomic level possible, counted and weighed to the nearest 0.01 grams. Vacuity Index (%VI), frequency of occurrence (%F), percentage of abundance composition (%N), percentage of biomass composition (%W) and Index of Relative Importance (%IRI) were calculated and used to describe hake's trophic spectrum.



CONCLUSIONS

Riccioni *et al.* (2018) used a metabarcoding approach to analyze the stomach contents of fish in the Adriatic Sea, finding that diet varied with fish size, with smaller individuals feeding primarily on crustaceans (euphausiids and amphipods) and the bigger ones feeding on larger preys like teleosts. A potential approach could be to expand upon these preliminary studies by incorporating additional techniques, such as precisely metabarcoding and stable isotope analysis, as done in other case studies (Gül, 2024; van Zinning *et al.*, 2021). These methods could be applied to conduct a more detailed investigation, focusing on the age/size classes of the specimens.

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