

FEEDING HABITS OF INDO-PACIFIC SPECIES *NEMIPTERUS RANDALLI* RUSSEL, 1986 (NEMIPTERIDAE) IN ISKENDERUN BAY, EASTERN MEDITERRANEAN SEA

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Abstract

Diet of threadfin bream *Nemipterus randalli* was determined from the specimens collected in Iskenderun Bay, Eastern Mediterranean Sea. A total of stomach contents of 117 threadfin bream specimens with total lengths ranging from 7.0 cm to 26.6 cm were examined. Stomach content analysis revealed that this species is carnivorous, feeding on benthic crustaceans constituting the main food in the overall diet composition. Main food items found in the stomach were crustaceans (IRI%= 82.29). Other main prey items found were pisces (IRI%= 12.83) polychaeta (IRI%= 1.18) and mollusca (IRI%= 0.03). Therefore rapidly expanding population of *N. randalli* may damage crustacean biodiversity and fish stocks feeding on crustaceans.

Keywords: Diet, Teleostei, Eastern Mediterranean

Introduction

The threadfin bream *Nemipterus randalli* is the first representative of the family Nemipteridae in the Mediterranean Sea, and recorded for the first time for the Mediterranean Sea by Bilecenoglu & Russel [1] based on a few specimen collected from the eastern coast of Iskenderun Bay, Turkey. This species has rapidly extended and now successfully established in Eastern the Mediterranean Sea [2,3,4]. *N. randalli* is very abundant in coastal waters, found on mud or sand bottoms in 5 to 80 m, usually in schools [5]. *N. randalli* has a widespread distribution found in the Indian Ocean and West Pacific. It is considered commercially important throughout its distribution, and one of the major species in the southern Red Sea and in the Gulf of Suez [6,7]. In the near future *N. randalli* may be a valuable commercial species in the Mediterranean Sea. Despite its abundance and new establishment along Turkish coast, no studies concerning the feeding regimes to the Mediterranean habit of *N. randalli* exists. In this study, the first time was to examine the feeding habits of threadfin bream caught in Iskenderun Bay, Eastern Mediterranean Sea.

Material and Methods

A total of 117 threadfin breams were collected during between 2009 from Iskenderun Bay (Eastern Mediterranean Sea). Specimens were caught by a R/V Mustafa Kemal I and commercial trawlers at a water depths ranging from 13 to 60 m under the project (TAGEM-09/AR-GE/11). After catching the fishes, stomachs were removed onboard, preserved in formalin and taken to the laboratory for analysis of the contents. In the laboratory, a total of 117 stomachs were dissected and then contents were identified to the lowest practical taxon (Table1). Prey were counted under a stereomicroscope and weighed to the nearest 0.01 g. Stomach content was analyzed using the percentage frequency of occurrence (F%), percentage numerical abundance (N%), percentage gravimetric composition (W%) and index of relative importance; [IRI = (N%+W%) x F%] were determined [8]. IRI was expressed as a percentage; [IRI% = (IRI x 100) / ΣIRI].

Results and Discussion

Stomach contents of *N. randalli* specimens with total lengths ranging from 7.0 cm to 26.60 cm were examined (average total length= 13.12 cm). Of the stomach examined, 105 (90%) were full and 12 (10%) empty. A total of 305 prey items belonging to four taxa were determined. Crustacea were the most important group in the diet of *N. randalli* with IRI% 82.29, followed by pisces were second in importance, IRI% 12.83. Other main prey items found in the stomach were polychaeta (IRI%= 1.18) and mollusca (IRI%= 0.03) (Table 1). Diet composition of *N. randalli* from Iskenderun Bay revealed that this species carnivorous, especially consuming benthic decapod crustaceans as primary food. The results demonstrated that *N. randalli* feed primarily on crustaceans, particularly *Processa* sp. *N. randalli* stomachs contained crustaceans (W=70%) and small fishes (W=18%). Similar result were obtained for the other *Nemipterus* species (*Nemipterus marginatus*) in the South China Sea, where mainly consumed crustaceans (70%) in particular *Penaeus* sp. constituted the major proportion of the diet composition (59.1%) [9]. The results demonstrated that *N. randalli* prefers crustaceans (Copepoda, Decapoda, Natantia, Brachyura, and Stomatopoda) as the main food, followed by teleost prey and polychaeta. The results suggested that the rapid extension of this fish species could be high the availability and distribution of food crustaceans. Therefore rapidly expanding population of *N. randalli* may damage crustacean biodiversity and fish stocks feeding with crustaceans. This information is very important in the management of fishery resources as well

as for the efficient utilization of this species.

Tab. 1. Diet composition of *Nemipterus randalli* (N%: numerical composition, F%: frequency of occurrence, W% gravimetric composition, IRI%: percentage index of relative importance)

SPECIES	% N	% F	% W	% IRI
POLYCHAETA				
<i>Polychaeta</i> sp	2.30	3.81	6.46	1.18
CRUSTACEA				
Copepoda				
<i>Copepoda</i> sp	3.28	7.62	0.47	1.01
Decapoda				
Natantia				
<i>Alpheus</i> sp.	0.98	1.90	2.61	0.24
<i>Alpheus rapacida</i>	1.31	1.90	4.93	0.42
<i>Processa</i> sp	60.3	19.0	42.2	68.9
<i>Portunidae</i> sp	0.33	0.95	0.36	0.02
Brachyura				
<i>Macrophthalmus graeffei</i>	0.33	0.95	0.36	0.02
<i>Goneplax rhomboides</i>	0.98	1.90	4.06	0.34
<i>Ocypodidae</i> sp	1.31	2.86	2.42	0.38
Unidentified shrimp	2.95	5.71	4.28	1.46
Unidentified crab	9.51	15.2	8.10	9.47
Stomatopoda				
<i>Stomatopoda</i> sp	0.33	0.95	0.65	0.03
MOLLUSCA				
Bivalvia				
<i>Bivalvia</i> sp	0.33	0.95	0.51	0.03
PISCES				
Unidentified fish	4.92	12.4	12.8	7.76
Digested Fish	6.23	12.4	5.37	5.07
DIGESTED MATERIAL	4.59	11.4	4.43	3.64

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