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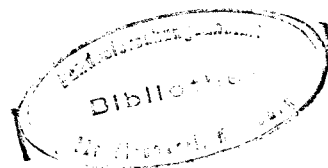
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FEEDING OF BIGEYED TUNA (THUNNUS
OBESUS LOWE) IN THE EASTERN
CENTRAL ATLANTIC



With development of tuna long-lined fisheries a special attention is given to the biology of the objects obtained.

At present, certain materials concerning the feeding of yellowfin tuna (*Thunnus albacares*, Bonnaterre) has been collected and summarized, which give a sufficiently full idea on qualitative and quantitative distribution of food organisms in different parts of the Atlantic ocean.

The papers of foreign authors contain some evidence on feeding of bigeyed tuna only in the Pacific and Indian oceans (Alverson and Peterson, 1963; Juhe, 1955; King and Ikehara, 1956; Watanaba, 1958).

Data on feeding of bigeyed tuna from the Indian and Atlantic oceans occur in papers by V.P. Maksimov (1969) and B.S. Solovjov (1971) and are of general character as to distribution of food objects. There is given no quantitative analysis for the food objects from the Atlantic.

MATERIAL AND METHODS

The present paper is based on the observation made by the author in the period of January-March 1972, in the area of 0-10°S, 2°30'-10°00'W. The biological analysis of 420 caught tunas revealed a quantitative composition of food clot. Throughout the whole period of studies the members of 2 families of crustaceans, 3 families of cephalopods and 21 families of fish were found in the stomachs of bigeyed tuna. Frequency of occurrence of food components is given in Table 1. To find out a differentiation in consumption of individual food organisms by tunas from various weight groups we used only 4 food components: squids and fishes from the families of

Chlorophthalmidae, Odontostomidae, Sternopthychidae, Besides, another family was taken, namely, Alepisauridae, since its representatives having to 1 m in length and thus being different from the numbers of other families made it possible for us to follow the correlation between the tuna weight and the size of food objects.

DISCUSSION

The whole bulk of tunas analysed was conventionally divided into 6 weight groups: a) up to 20 kg; b) 21-40 kg; 41-60 kg; d) 61-80 kg; e) 81-100 kg; f) over 100 kg.

From Table 2 it is evident that in tunas from smaller weight groups predominance of squids in feeding is maximum reaching 61 %; larger food components such as members from the family of Alepisauridae are absolutely absent. With an increase in tuna weight there appear in feeding Alepisauridae mainly as a result of limited consumption of fish from the family of Odontostomidae. Throughout the life span the consumption of fish from the family of Sternopthychidae and Chlorophthalmidae maintains approximately at the same level, 9-20% and 16-23% accordingly.

CONCLUSIONS

1. During the life span squids are predominant object in bigeyed tuna feeding, particularly in smaller weight groups.
2. With increase in age and therefore in weight of bigeyed tuna the percentage of larger food objects in feeding increases.

Table 1

Frequency of occurrence of food
components in bigeyed tuna
stomachs (in %%)

%%	Food component
15.4	Squids Loligo sp.
11.2	Chlorophthalmidae
9.8	Odontostomidae
8.4	Sternoptychidae
8.2	Paralepididae
6.9	Cuttlefish Sepia sp.
6.5	Shrimps Penaeus sp.
6.1	Myctophidae
4.5	Dirietmidae
3.0	Microstomatidae
2.5	Bericidae
1.8	Trichiuridae
1.7	Alepisauridae
1.6	Crustacea
1.0	Nemichthyidae
0.9	Bramidae
0.7	Trachipteridae
0.3	Balistidae
0.1	Argonaut Argonauta sp.
0.1	Caristiidae
0.1	Chaulidontidae
0.1	Fistulariidae
0.1	Macrouridae
0.1	Tetraodontidae
8.6	Digested residue
0.3	Unidentified species
100.0	

Table 2

Percentage of food components in stomachs
of bigeyed tuna weight groups (in %)

Weight group	Food component	Squids	Chlorophthalmidae	Odontostomidae	Sternophychidae	Alepisauridae	
to 20 kg		61	21	9	9	-	100
21-40		47	16	18	16	3	100
41-60		37	20	21	20	2	100
61-80		39	20	26	14	2	100
81-100		43	23	14	14	6	100
over 100		44	20	12	12	12	100

REFERENCE:

MAKSIMOV V.P. Feeding of bigeyed tuna (*Thunnus obesus* Lowe) and swordfish (*Xiphias gladius*) in the Eastern Tropical Atlantic. Trudy AtlantNIRO, vyp.25, 1969.

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