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Feeding of *Diplodus vulgaris* (E. Goeffr., 1817) (Pisces : Sparidae) in the Adriatic Sea

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Introduction:

Diplodus vulgaris is a very abundant fish species of Sparidae family in the Adriatic and Mediterranean Sea. They inhabit depth from 0-130 m, being more numerous down to 30 m, on markedly rocky bottoms, mixed rocky and sandy bottoms and rearly in laguns (Tortonese, 1975). Larger specimens occur in deeper waters while juveniles prefer closer shallow waters.

According to the available data on feeding of D. vulgaris it is preferentially carnivorous fish; feeding on smal crustaceans, worms and molluscs (Ara, 1937; Collignon & Aloncle, 1960; Onofri, 1986).

This paper deals with the quantitative and qualitative analysis of preadult and adult stages feeding habits, using the samples from the middle Adriatic, with special regard to selectivity, seasonal intensity and difference in diet between length groups.

Material and methods:

Guts of 103 specimens collected from April to November 1981-82 on 13 localities of the middle Adriatic were examined. Depth of the sampling localities ranged from 2-40 m. Total body length (Lt) of specimens varied from 13,9-33,4 cm. Guts of 84 specimens contained food, while 19 did not.

The relative importance of different components of the diet was assessed using three feeding indices: index of relative importance (IRI), main food item (MFI) and feeding coefficient (Q).

Results:

Prematurity stage and ripe D. vulgaris feed on a number of animal groups and species (Fig. 1). As to the global structure, importance and food coefficient, three species groups may be distinguished: Crustacea Decapoda (%IRI = 2430,9; %MFI = 31.9; %Q = 516.68), Echinoidea (%IRI = 1965.7; %MFI = 23.0; %Q = 467.75) and Bivalvia (%IRI = 1284.3; %MFI 23.9; %Q = 273.75), which, at the same time, are preferred food (%Q = > 200). Polychaeta, Gastropoda and Polyplacophora (%Q = 200-20) are food constituents of secondary importance, and all other animal group (Spongia, Anthozoa, Nematoda, Bryozoa, Enteropneusta, Ascidiacea, Pisces) are accidental food (%Q = < 20).

Food composition changes with fish growth (Fig. 1). Prematurity stage specimens (< 17 cm Lt) prefer Echinoidea (%Q = 585) and Polychaeta (%Q = 189) and Crustacea (%Q = 111) as secondari food. At first maturity and immediately following the first maturity (17-25 cm Lt) specimens prefer Echinoidea (%Q = 924) and Bivalvia (%Q = 571). Older specimens (> 25 cm Lt) show preference for Crustacea Decapoda (%Q = 1612),while their secondary prey are predominantly Bivalvia (%Q = 102) and Echinoidea (%Q = 40).

Seasonal aspect of feeding pattern show also changes in intensity: they feed most intensively at the end of spring and beginning of summer, and least intensively during spawning period (second half of autumn in the Adriatic Sea). However, in all analysed seasons (spring, summer, autumn) Crustacea Decapoda and Bivalvia dominated in the food.

As to the food composition D. vulgaris belong to carnivorous-omnivorous fish, the food of which is dominated by animal groups with firm body armour (Crustacea Decapoda, Bivalvia, Echinoidea).

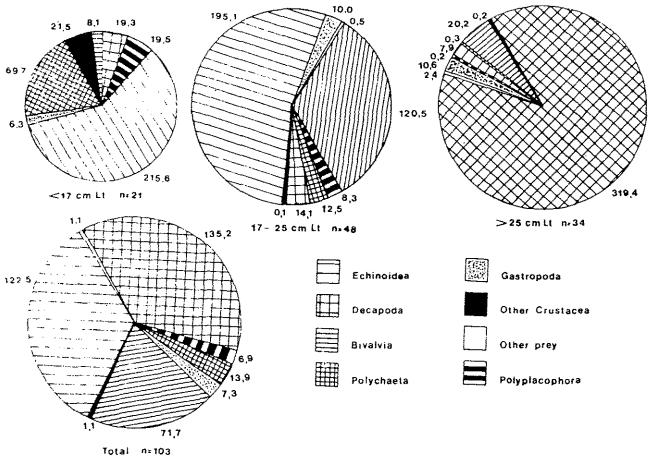

Fig. 1. Pray composition by size classes and total

References:

Ara, L., 1937. Contributio alla conoscenza dell álimentazione dei pesci. Sargus vulgaris Geoffr., Sargus annularis L., Sargus sargus L. Boll. Pesca Piscicul. Idrobiol., 13 (3): 371-381.

Collignon, J. & H. Aloncle, 1960. Le régime alimentaire de quelques poissons benthiques des côtes marocaines. Bull. Inst. Pêches Marit. Maroc, 5: 17-29.

Onofri, I., 1986. Morfološke prilagodbe zubala na način ishrane kod vrsta iz roda Diplodus, Puntazzo i Sarpa (Pisces, Sparidae) iz Jadranskog mora. Morsko ribarstvo, 4: 129-134.

Tortonese, E., 1975. Osteichthyes (Pesci ossei) Parte sec. Fauna d'Italia, XI, Ed. Calderini, Bologna.

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