

## SHORT COMMUNICATION

### **A preliminary study on some biological characters of East Atlantic peacock wrasse, *Symphodus tinca*, in the Black Sea, Turkey**

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#### **Abstract**

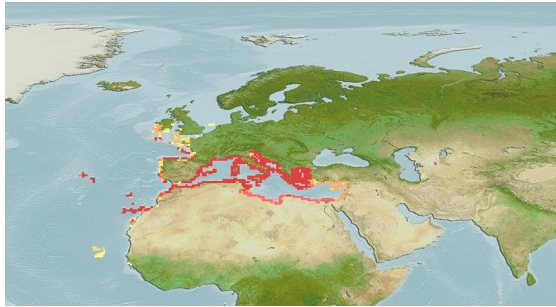
Two specimens of the East Atlantic peacock wrasse *Symphodus tinca* (Linnaeus, 1758) were captured by gillnet at 0-30 m depth on 19 May 2015 from Kastamonu (Cide) coastal waters in the Turkish coast of the central Black Sea. In this study, morphometric and meristic measurements, age and sex determination of the *Symphodus tinca* were examined. This is a preliminary study related to some biological properties of *S. tinca* for the Black Sea.

**Key words:** Black Sea, East Atlantic peacock wrasse, *Symphodus tinca*, morphometric, meristic,

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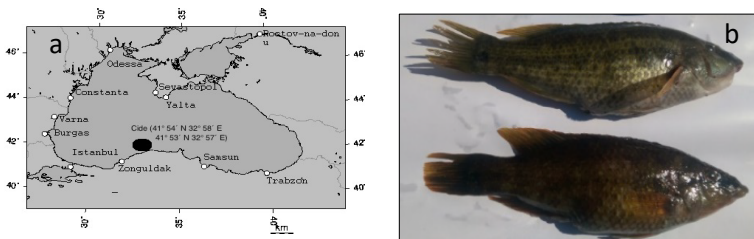
East Atlantic peacock wrasse, *Symphodus tinca* (Linnaeus, 1758), is a marine fish belonging to the Labridae (Perciformes) family and widely distributed in the Eastern Atlantic, from Spain to Morocco, including the Mediterranean and the Black Sea (Figure 1). This species is mainly found at between 1 and 50 m depths near rocks in eel-grass beds, and also in brackish lagoons. Reproduction of this species occurs from May to July. It reaches to sexual maturation in 2-3 years. They feed mainly on sea urchins, ophiuroids, bivalves, molluscs, and crabs (Quignard and Pras 1986). The body of *S. tinca* is elongated and laterally compressed. It has 32-34 vertebrae and 13-16 gillrakers. The body colour of this species can vary according to the habitat and it is marked with a dark spot at the base of caudal fin (Quignard and Pras 1986; Stojanov *et al.* 1963). Besides, the Red List status of *S. tinca* is “least concern” (IUCN 2014).



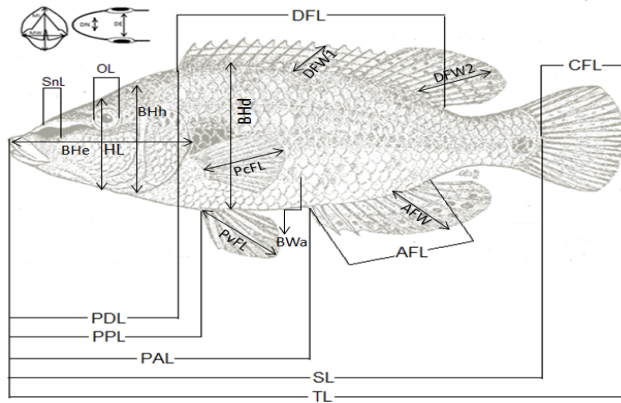
**Figure 1.** Distribution of *Symphodus tinca* (from fishbase.org)

There have been some studies on length-weight relationships, diets, behaviour, reproduction, habitat and growth of *S. tinca* in the Aegean and the Mediterranean Sea (Budaev and Zworykin 1998; Taborsky *et al.* 1987; Warner and Lejeune 1985; Ilhan *et al.* 2008; Petrakis and Stergiou 1995; Karakulak *et al.* 2006; Pallaoro and Jardas 2003; Gordoia *et al.* 2000; Cruz and Lombarte 2004; Ouannes-Ghorbel and Bouain 2006; Skeljo and Ferri 2011; Boughamou *et al.* 2014) but limited information is known about the biological properties of *S. tinca* in the Black Sea. This paper reports the first findings on age, sex, morphometric and meristic properties of *S. tinca* in the Turkish waters of the central Black Sea.

Two specimens of *Symphodus tinca* (Linnaeus, 1758) were caught by gillnet (mesh size 18 mm) at 0-30 m depth on 19 May 2015 in the coast of Kastamonu (Cide) (41°54' N 32° 58' E-41° 53' N 32° 57' E) in the central Black Sea (Figure 2a and 2b). The specimens were examined for morphological and other measurements (according to Figure 3), then preserved in the laboratory for the National Gene Bank at the Central Fisheries Research Institute, Ministry of Food, Agriculture and Livestock.

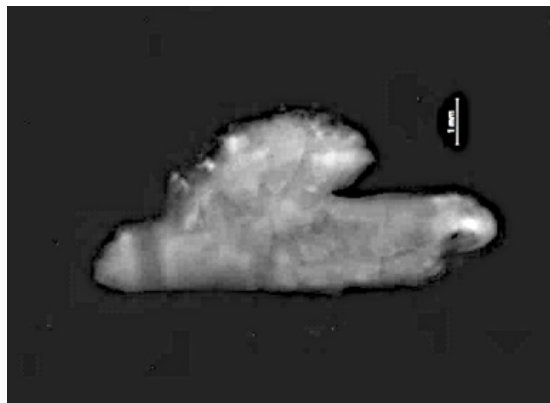


**Figure 2.** a: Sampling station, b: *Symphodus tinca* specimens



**Figure 3.** Morphometric measurements of *Symphodus tinca* (modified from Fischer *et al.*, 1987). All measurements are point to point. (TL, Total Length; SL, Standard Length; PPL, Pre-pelvic Length; PDL, Pre-dorsal Length; PAL, Pre-anal Length; BHD, Dorsal Fin Based Body Height; BWa, Anal Fin Based Body width; DFL, Dorsal Fin Length; DFW, Dorsal Fin Width; PcFL, Pectoral Fin Length; PvFL, Pelvic Fin Length; AFW, Anal Fin Width; AFL, Anal Fin Length; CFL, Caudal Fin Length; HL, Head Length; SL, Snout Length; OL, Orbital Length; BHH, Head Based Body Height; BHe, Eye Based Head Height; DN, Distance Between Nostrils; DE, Distance Between Eyes; ML, Mouth Length; MW, Mouth Width)

All morphometric measurements of these species are shown in Table 1. The meristic characters used for identification were as follows: Dorsal fin rays XV+11; pectoral fin rays 13; anal fin rays III+12; lateral line scale number 33-34. The ages of the samples were determined as 3 years old (Figure 3). The age of this species was determined according to Pallaoro and Jardas (2003), Skeljo and Ferri (2011) and Boughamou *et al.* (2014). The meristic characters shared similarity with Bauchot's (1987) findings.



**Figure 3.** Otolith of *Symphodus tinca*

**Table 1.** The morphometric measurements of the two specimens of *Symphodus tinca* (All measurements except weight and age are in mm.)

Measurements	♂	♀
Total Length	260.5	280.0
Weight	371.73g	414.24g
Age	3	3
Standard Length	230.20 (88.37%TL)	230.9 (82.46%TL)
Head Length	69.20 (25.53%TL)	71.90 (25.68%TL)
Pre-dorsal Length	75.31 (28.91%TL)	79.68 (28.46%TL)
Pre-pelvic Length	77.32 (29.68%TL)	89.19 (31.85%TL)
Pre-anal Length	134.70 (51.71%TL)	147.78 (52.78%TL)
Body Height (in Dorsal fin)	83.69 (32.13%TL)	85.93 (30.69%TL)
Body Height (in Anal fin)	75.97 (29.16%TL)	75.37 (26.92%TL)
Body Width (in Dorsal fin)	31.70 (12.17%TL)	29.13 (10.40%TL)
Body Width (in Anal fin)	40.93 (15.71%TL)	42.28 (15.10%TL)
Dorsal Fin Length	119.30 (45.80%TL)	119.19 (42.57%TL)
Dorsal Fin Width1	27.12 (10.41%TL)	31.25 (11.16%TL)
Dorsal Fin Width2	16.57 (6.36%TL)	14.42 (5.15%TL)
Pectoral Fin Length	39.07 (15.00%TL)	41.37 (14.78%TL)
Pelvic Fin Length	36.06 (13.84%TL)	37.63 (13.44%TL)
Anal Fin Length	46.34 (17.79%TL)	47.55 (16.98%TL)
Anal Fin Width	23.03 (8.84%TL)	27.11 (9.68%TL)
Caudal Fin Length	32.78 (12.58%TL)	34.32 (12.26%TL)
Nose Length	6.90 (10.38%HL)	8.49 (11.81%HL)
Length Between Nostrils	14.36 (21.59%HL)	14.23 (19.79%HL)
Eye Diameter	11.65 (17.52%HL)	11.00 (15.30%HL)
Length Between Eyes	24.22 (36.42%HL)	23.27 (32.36%HL)
Head Height (in head)	47.29 (71.11%HL)	39.17 (54.48%HL)
Head Height (in operculum)	65.45 (98.42%HL)	68.31 (95.01%HL)
Dorsal Fin Count	1	1
Dorsal Fin Ray Count	15+XI	15+XI
Pectoral Fin Ray Count	13	13
Pelvic Fin Ray Count	6	6
Anal Fin Ray Count	3+XII	3+XII
Scale Count in Linea Lateralis	31-34	31-34

## Conclusion

This study contains new findings of *Symphodus tinca*, East Atlantic peacock wrasse in the coast of Turkey and these data will contribute to future work as well as scientific community. Further investigations of this species should be carried out in order to expand our knowledge about their life cycle in the Black Sea basin conditions.

## Acknowledgement

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# Karadeniz’de ırır balıęının (*Symphodus tinca*) bazı biyolojik zellikleri zerine ilk alıřma

## z

Arařtırmada kullanılan iki adet *Symphodus tinca* (Linnaeus, 1758) rneęi 19 Mayıs 2015 tarihinde Orta Karadeniz’de Kastamonu (Cide) aıklarında 0-30 m derinlikte uzatma aęı ile elde edilmiřtir. Bu alıřmada, ırır (*Symphodus tinca*) balıęının morfolometrik ve meristik limleri, yař ile cinsiyeti belirlenmiřtir. Bu arařtırma Karadeniz’de *S. tinca* trnn bazı biyolojik zelliklerinin belirlenmesine ynelik ilk alıřmadır.

**Anahtar Kelimeler:** Karadeniz, ırır, morfolometrik, meristik, *Symphodus tinca*

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