

## FIRST REPORT OF THE SPINY BLAASOP *Tylerius spinosissimus* (Regan, 1908) (Actinopterygii: Tetraodontidae) FROM GULF OF ANTALYA, TURKEY

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**Abstract:** The Indo-Pacific origin tetraodontid *Tylerius spinosissimus* is reported firstly in the Gulf of Antalya by 3 specimens. This report increases to six the number of the tetraodontidae family members in the Gulf of Antalya, Turkey.

**Keywords:** *Tylerius spinosissimus*, Spiny Blaasop, Gulf of Antalya, Turkey

**Öz:** Spiny Blaasop *Tylerius spinosissimus* (Regan, 1908)'un (Tetraodontidae Actinopterygii) Antalya Körfezi (Türkiye)'nden ilk kaydı

İndo-Pasifik tetraodontid *Tylerius spinosissimus* yakalanan 3 örnekle Antalya Körfezi'nde ilk kez rapor edilmiştir. Bu raporla, Antalya Körfezi'ndeki tetraodontidae familyasına ait tür sayısı 6'ya yükselmiştir.

**Anahtar Kelimeler:** *Tylerius spinosissimus*, Dikenli Blaasop, Antalya Körfezi, Türkiye

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## Introduction

Spiny Blaasop belong to tetraodontidae of which are characterized by sharp, plate-like teeth and a spiny loose skin that allows them to swell up into a spiny ball after pumping water into their stomachs (Mohamed et al., 2013). Tetraodontids inhabit tropical and temperate seas, most frequently in shallow nearshore waters, sometimes entering more brackish or fresh water habitats. All species are carnivorous. The flesh of many species is reportedly of excellent flavour and is consumed locally in many areas, especially Japan. However, many species are toxic (tetraodon toxin) and their consumption has caused serious (sometimes lethal) poisoning. The occurrence of the toxin is more prevalent in certain species, but may vary by season or sexual condition, and its presence is uncertain for many species. It is concentrated in the internal organs, especially liver and gonads (Shipp, 2002).

There are six species of the tetraodontidae family members in Turkish seas. *Lagocephalus spadiceus* (Richardson, 1845), *Lagocephalus suzensis* (Gohar and Clark, 1953), *Lagocephalus sceleratus* (Gmelin, 1789), *Sphoeroides pachygaster* (Müller and Troschel, 1848), *Torquigener flavimaculosus* (Hardy and Randall, 1983) and *Tylerius spinosissimus* are indo-pasific origin. Only *S. pachygaster* is tropical Atlantic origin (Turan et al., 2007; Corsini-Foka et al., 2010). Actually, there are ten tetraodontidae species in the Mediterranean Sea, adding to the above: *Ephippion guttiferum* (Bennett, 1831), *Sphoeroides marmoratus* (Lowe, 1838), *Sphoeroides spengleri* (Bloch, 1785) and *Lagocephalus lagocephalus* (Linnaeus, 1758) (Vacchi et al., 2007).

First occurrence of alien *Tylerius spinosissimus* (Regan, 1908) from the Turkish waters in the

Mediterranean Sea is reported from the İskenderun Bay (Turan et al., 2010). This is second report from Turkish Mediterranean Sea and first report from Gulf of Antalya.

## Materials and Methods

A total of three specimens of *T. spinosissimus* (2.90 - 7.80 g) were collected by trawling activities in the Gulf of Antalya (36° 41' N, 31° 22' E / 36° 41' N, 30° 56' E) on 2 April 2013, at 40 m of depth (Figure 1). Samples were preserved in 4% formaldehyde solution and deposited at the Museum of the Fisheries Faculty of Akdeniz University (Fish Box: 71). *Tylerius spinosissimus* samples were identified by Smith and Heemstra (1986), Matsuura (2001), Turan and Yağlıoğlu (2011), (Table 1).

This family members of tetraodontidae inhabit tropical and temperate seas, most frequently in shallow near shore waters, sometimes entering more brackish or fresh water habitats (Shipp, 2002). The spiny blaasop, *T. spinosissimus*, is a tropical, bathydemersal species (250–435 m) in its natural range of distribution, the Indo-West Pacific (Froese and Pauly, 2010).

The species was recorded for the first time from the bay of Trianda, north-western coast of Rhodes Island, south-eastern Aegean Sea, after then Golani et al., (2011) reported from Israel shores and Turan and Yağlıoğlu, (2011) was reported from Iskenderun Bay of the Mediterranean shores of Turkey. This is second record from the Turkish Mediterranean Sea and first report from the Gulf of Antalya. These findings suggesting that *T. spinosissimus* expands a considerable westward extension of its distribution range in the eastern Mediterranean.



**Figure 1.** Report location of *Tylerius spinosissimus* in the Gulf of Antalya**Table 1.** Morphometric (in mm) and meristic counts (min – max) of the three specimens (7.80g, 3.78g, 2.90g) of *Tylerius spinosissimus*

	<b>Characters</b>	<b>Mean (n=3)</b>	<b>Ranges (min – max)</b>
<b>Morphometric measurements (mm)</b>	Total length	60.43	(53.8 – 71.1)
	Standard length	47.16	(56.3 – 41.7)
	Body depth	17.33	(11.9 – 26.0)
	Caudal Peduncle least depth	3.23	(2.9 – 3.5)
	Caudal Peduncle length	12.43	(15.3 – 10.2)
	Head length	17.36	(18.7 – 15.4)
	Eye diameter	3.63	(3.1 – 3.9)
	Preorbital distance	6.86	(6 – 8)
	Postorbital distance	10.70	(9.7 – 11.5)
	Interorbital distance	5.63	(4.8 – 6.3)
	Dorsal fin length	6.89	(5.1 – 8.58)
	Anal fin length	5.43	(3.9 – 7.5)
	Pectoral fin length	7.03	(6.1 – 8.2)
	Predorsal length	33.70	(30 – 38.8)
	Preanal length	32.50	(28.4 – 36.8)
	Total length / Standard length	1.28	(1.26 – 1.3)
	Standard length / Head length	2.60	(2.3 – 2.8)
	Standard length / Predorsal length	1.38	(1.30 – 1.45)
	Standard length / Preanal length	1.39	(1.30 – 1.45)
	Head length / Caudal Peduncle least depth	5.34	(5.14 – 5.60)
Head length / Caudal Peduncle length	1.73	(1.3 – 1.8)	
Head length / Eye diameter	5.16	(5.8 – 4.8)	
Head length / Preorbital distance	2.60	(2.4 – 2.8)	
Head length / Postorbital distance	1.96	(1.6 – 2.7)	
<b>Meristic</b>	Dorsal fin rays		8
	Anal fin rays		6
	Pectoral fin rays		15
	Caudal fin rays		8



**Figure 1.** *Tylerius spinosissimus* (Regan, 1908) from Gulf of Antalya, Turkey

## Conclusion

The success of lessepsian migrant *T. spinosissimus* in the colonization of the eastern Mediterranean could be the result of occupation of an unsaturated niche and of out-competing local species on resources such as food and adaptation to the new ecosystem.

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## References

Corsini-Foka, M., Margies, P., Kondilatos, G., Economidis, P.S., (2010). Tetraodontid colonizers in the Aegean Sea; Second record of the Spiny blaasop, *Tylerius spinosissimus* (Actinopterygii: Tetraodontiformes: Tetraodontidae), *Acta Ichthyologica & Piscatoria*, **40**(1): 71-74.

doi: [10.3750/AIP2010.40.1.10](https://doi.org/10.3750/AIP2010.40.1.10)

Froese, R., Pauly, D., (2010). Fish Base. World Wide Web electronic publication. version (12/2010) [www.fishbase.org](http://www.fishbase.org).

Golani, D., Sonin, O., Edelist, D., (2011). Second records of the Lessepsian fish migrants *Priacanthus sagittarius* and *Platax teira* in the Mediterranean and distribution extension of *Tylerius spinosissimus*, *Aquatic Invasions*, **6** (Suppl. 1): 7-11.

doi: [10.3391/ai.2011.6.S1.002](https://doi.org/10.3391/ai.2011.6.S1.002)

Matsuura, K., (2001). Tetraodontidae. Puffers. In: FAO Species Identification Guide for Fishery Purposes. The living marine Resources of the Western Central Pacific. Vol. 6. Bony Fishes, Part 4 (Labridae to Latimeriidae), estuarine Crocodiles (Carpenter K.E. & V. Niem, eds), pp. 3954-3957. Rome: FAO.

- Mohamed, K. S., Sathianandan, T., Kripa, V.V., Zacharia, P.U., (2013). Puffer fish menace in Kerala: a case of decline in predatory control in the southeastern Arabian Sea, *Current Science Journal of Indian Academy of Sciences*, **104**(4): 426-429 pp.
- Shipp, R.L., (2002). Bony Fishes part 2 (Opistognathidae to Molidae) sea turtles and marine mammals. In Carpenter K.E, Editor. FAO Species Identification Guide for Fishery Purposes and American Society of Ichthyologists and Herpetologists Special Publication No.5 The living marine resources of the Western Central Atlantic **3**: 1988 – 1991. Rome
- Smith, M.M., Heemstra, P.C., (1986). *Tetraodontidae*. p. 894-903. In Smith, M.M., Heemstra, P.C. (eds.) *Smiths' sea fishes*. Springer-Verlag, Berlin.
- doi: [10.1007/978-3-642-82858-4](https://doi.org/10.1007/978-3-642-82858-4)
- Vacchi, M., Bussotti, S., Miglietta, A.M., Guidetti, P., (2007). Presence of the Guinean puffer *Sphoeroides marmoratus* (Lowe, 1838) in the Mediterranean Sea, *Journal of Fish Biology*, **71** (4): 1215–1219.
- doi: [10.1111/j.1095-8649.2007.01578.x](https://doi.org/10.1111/j.1095-8649.2007.01578.x)