

# Gut contents and feeding habits of the Great Pipefish, *Syngnathus acus* Linnaeus, 1758, in İzmir Bay (Aegean Sea, Turkey)

(Osteichthyes: Syngnathidae)

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**Abstract.** A total of 112 stomachs of the Great Pipefish, *Syngnathus acus* Linnaeus, 1758 (56 females and 38 males), was collected in İzmir Bay (Aegean Sea) and analysed in order to determine the feeding habits. 95 specimens (85.6%) were found with prey items in their stomachs. Zooplanktonic organisms were the main food and in terms of numerical (NO%) and frequency (FO%) of occurrence, four main prey categories were determined in the gut content of this species. The most dominant group was found to be harpacticoid copepods (33.6% NO; 57.7% FO), followed by Amphipoda (22.3% NO; 38.2% FO), cypris larvae (12.8%NO; 21.9%FO) and decapod crustaceans (9.5% NO; 16.3% FO), respectively. The numbers of their occurrence indicated that there were significant differences between the seasons. Seasonal differences in the gut content were found in 9 prey groups in spring ( $p<0.05$ ) and 6 in winter ( $p<0.05$ ), showing that feeding is more diverse in spring than in winter. Similarly, the number of occurrences indicated that there was a significant difference in the first ( $p<0.05$ ) and fourth size groups ( $p<0.05$ ). However, no significant difference was found in the feeding pattern between sexes ( $p>0.05$ ). Consequently, small crustaceans were the most important prey to be consumed in all seasons by all size groups of *Syngnathus acus*, whereas decapod crustacean larvae/eggs, larger prey items, were preferred by larger specimens.

**Key words.** *Syngnathus acus*, gut content, size and season-biased feeding, Aegean Sea.

## Introduction

Pipefish and seahorses attract economic interest due to their value as aquarium fish, ingredients in traditional Chinese medicine, supplements in specialized cuisine, and as curiosities (GARCIA et al. 2005). They inhabit vegetated coastal and estuarine habitats (HOWARD & KOEHN 1985, TIPTON & BELL 1988) and may constitute an important part of the ichthyofauna of estuarine and shallow coastal waters (DEMİR 1996). POLLARD (1984) claimed that the Syngnathidae were among the most abundant groups in seagrass-associated fish communities. According to HOWARD & KOEHN (1985), in terms of a community dominance index, the Syngnathids were the highest ranked family for both the Atlanto-Mediterranean and Indo-Pacific regions. The distribution and abundance of sea grasses must influence the life history of pipefish, which use the seagrass as nursery and feeding grounds and as a shelter from predators (TEIXEIRA & MUSICK 1995). They mostly inhabit moderately deep waters, ranging from 10 to 15 m and with bottoms covered with *Zostera* sp. (LUTHER & FJEDLER 1976).

Pipefish migrate seasonally into the shallow, vegetated areas during spring and remain there until late autumn, when they move back to deeper waters (MERCER 1973, ORTH & HECK