**Anatomy of the digestive system of yellow grouper *Epinephelus awoara* and snubnose pompano *Trachinotus blochiias* as an adaptation to the type of food**

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Yellow grouper and snubnose pompano are important commercial and aquaculture species. Yellow grouper *Epinephelus awoara* belongs to family Serranidae. Its species are mainly distributed in the northwestern Pacific; they are carnivorous and feed mainly on crustaceans. Snubnose pompano *Trachinotus blochii* from family Carangidae inhabits the southern Japan Sea, western Pacific, and Indian Ocean. His main food source is hard-shelled invertebrates [1].

Efficient nutrition is necessary for the efficient cultivation of species, therefore knowledge of the structure of the digestive system is of practical importance. The aim of this work is to describe the anatomy of their digestive tube.

**Material and methods**

12 fish were purchased, dissected, and digestive tubes were fixed in 4% formalin solution. For histology analysis used HS566 Carousel Tissue Processor, Thermo Fisher Scientific Histostar pourers, Thermo Scientific HM355S and Leica RM2235 microtome, Thermo Scientific Gemini AS, and Carl Zeiss Primo Star microscope.

**Results**

Digestive tubes of both species have similar gross anatomy. It is beginning at the mouth, extends through the body as the esophagus, stomach, and intestine, and terminating at the anus. The tube is consisting from four main layers: mucosa, submucosa, muscularis and serosa. The mouth is covered with the squamous stratified epithelium containing taste buds. The esophagus is lined by a protective stratified epithelium containing goblet cells, and a stomach with single-layered columnar epithelium. Gastric glands were present in all parts of the pompano stomach but were absent in the pyloric part of the grouper. In the intestine there are villi, covered with a simple columnar epithelium; pompano has 3 times fewer goblet cells than grouper.

**Conclusion**

The structure of the digestive tube in the two species differs in the tube layer thickness, the number of goblet cells, and gastric glands. These differences are related to the feeding type. Both species are carnivorous but grouper prefers crustaceans and pompano choose rather mollusks. The anatomy of the mouth, esophagus, stomach, and intestine is found to be adapted to food and feeding strategies, as the understanding of these habits is essential to emphasize the related functional mechanisms of fish digestive physiology.

**Reference**

1. Bray, D.J. (eds.) *Trachinotus blochii* in Fishes of Australia.2022. https://fishesofaustralia.net.au/home/species/2993