

Title : Comparative study of the oral cavity, gill rakers and gastrointestinal tract in some fishes according to their feeding habits.

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Cooperative Education (กรณี นำเสนอผลงานสหกิจศึกษา)

ABSTRACT

The objective of this study is to investigate the correlation between the morphology of the buccal cavity, gill rakers, and digestive tracts of nine fish species, categorized into five different feeding groups. Three main parts of structures were collected from 27 fresh specimens and preserved in 10% formalin solution before examination under stereomicroscope. Bony structures (like teeth, gill arch, gill rakers) were stained with Alizarin red solution before investigation. In respect of structures in their oral cavities, it showed that planktivorous fishes possess not prominent, small teeth with spaced apart. Whereas, carnivorous fishes, *Lutjanus russellii* have more prominent teeth, with canine or fang-like teeth used to grasp prey. On the other hand, herbivorous fishes do not have teeth inside their oral cavity, but in *Barbonymus gonionotus*, pharyngeal teeth with soft lumps are present, which are used for grinding food, without any sharpness. In omnivorous fishes, multiple types of teeth are found depending on their diets, such as in *Pangasianodon hypophthalmus*, where villiform teeth are present. Lastly, in detritivorous fishes,

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only pharyngeal teeth are found, appearing as short spines. Regarding the morphology of gill rakers on the first gill arch, it revealed that the fish with the longest gill rakers is *Rastrelliger brachysoma*, a planktivorous species, (2.2 cm in length) with slender, and equipped with comb-like denticles used for filtering small plankton from the water. The second longest gill raker is found in the *Hypophthalmichthys nobilis*, a herbivorous species, (1.63 cm in length). While *Channa striata*, a carnivorous species, has the shortest gill rakers (0.2 cm in length), which are widely spaced, with sharp denticles. In contrast to herbivorous species, the gill rakers lack of spines. In terms of the relative intestinal length (RIL), it was discovered that *Oreochromis niloticus*, omnivorous species, had the highest value (7.41) among the studied species without the distinctive stomach, following with *Hypophthalmichthys nobilis*, herbivorous species, (5.37), in contrast to *Selaroides leptolepis*, planktivorous species, had the lowest value (0.47). According to results of this study, it could provide the fundamental data about anatomical structures of digestive systems correlated to feeding strategy of fishes.

Title name guide.

ADVISOR title name / แปลไทย	
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