INTISARI

STUDI ANATOMI DAN DISTRIBUSI KUNCUP PENGECAP PADA ORGAN PALATAL BERBAGAI JENIS IKAN KOI (*Cyprinus rubrofuscus*) LOKAL DI INDONESIA

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Ikan koi (*Cyprinus rubrofuscus*) merupakan salah satu jenis ikan teleost air tawar yang banyak dipelihara dan dibudidayakan oleh masyarakat Indonesia. Ikan koi memiliki nilai ekonomi yang tinggi dan ramah lingkungan karena sebagian besar merupakan ikan omnivora *filter feeder*. Lamina epitelialis organ palatal (OP) tersusun atas kuncup pengecap dan sel mukus. Kuncup pengecap pada organ palatal dihipotesiskan dapat memberikan informasi kemosensori tentang tingkat palatabilitas. Penelitian ini bertujuan untuk mempelajari distribusi kuncup pengecap pada organ palatal berbagai spesies ikan koi lokal Indonesia.

Enam varian ikan koi kohaku, showa, shiro, sanke, platinum, dan ogon, masing-masing tiga ekor, berumur 4-6 bulan digunakan sebagai sampel. Ikan koi dieuthanasi menggunakan dietil eter dengan dosis letal 0,5 ml/liter dalam air. Satu organ palatal/varian dikoleksi untuk preparat histologis dan diwarnai dengan hematoksilin eosin (HE), sisanya untuk pengamatan *scanning electron microscopy* (SEM). Struktur anatomi dan distribusi kuncup pengecap pada organ palatal ikan koi diamati pada area A1, A2, A3, B1, B2, B3, B4, dan B5 menggunakan mikroskop cahaya. Sampel dianalisis secara deskriptif dan kuantitatif dengan uji ANOVA dan uji lanjut Post Hoc (Tukey HSD).

Struktur kuncup pengecap pada organ palatal ikan koi berbentuk menyerupai buah pir dan tersusun dari sel gustatori, sel penyokong, dan sel basal. Rerata proporsi kuncup pengecap terbanyak pada varian ogon (23,95 ± 7,03) dan terendah pada varian shiro (17,03 ± 5,26). Variasi distribusi kuncup pengecap yang mencolok di area posterior dan lateral. Kesimpulan dari penelitian ini ikan koi varian ogon memiliki kuncup pengecap paling banyak dan variasi distribusinya terdapat di posterior dan lateral organ palatal.

Kata kunci: *Cyprinus rubrofuscus*, kuncup pengecap, organ palatal, SEM.

ABSTRACT

ANATOMICAL STUDY AND DISTRIBUTION OF TASTE BUDS IN THE PALATAL ORGANS OF VARIOUS TYPES OF LOCAL KOI FISH (*Cyprinus rubrofuscus*) IN INDONESIA

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Koi fish (*Cyprinus rubrofuscus*) is a type of freshwater teleost fish that is widely kept and cultivated by Indonesian people. Koi fish have high economic value and are environmentally friendly because most of them are omnivorous filter feeder fish. The epithelial lamina of the palatal organ (OP) is composed of taste buds and mucous cells. Taste buds in the palatal organs are hypothesized to provide chemosensory information about the degree of palatability. This study aims to study the distribution of taste buds on the palatal organs of various Indonesian local koi fish species.

Six varieties of koi fish kohaku, showa, shiro, sanke, platinum, and ogon, three for each, 4-6 months old were used as samples. Koi fish were euthanized using diethyl ether at a lethal dose of 0.5 ml/liter in water. One palatal organ/variant was collected for histological preparation and stained with hematoxylin eosin (HE), the rest for scanning electron microscopy (SEM) observation. Anatomical structure and distribution of taste buds in the palatal organs of koi fish were observed in areas A1, A2, A3, B1, B2, B3, B4, and B5 using a light microscope. Samples were analyzed descriptively and quantitatively by ANOVA test and Post Hoc test (Tukey HSD).

The structure of the taste buds in the palatal organs of koi fish is pear-shaped and composed of gustatory cells, supporting cells, and basal cells. The highest mean proportion of taste buds was in the ogon variant (23,95 ± 7,03) and the lowest was in the shiro variant (17,03 ± 5,26). A marked variation in the distribution of taste buds in the posterior and lateral areas. The conclusion of this study is that the Ogon variant of koi fish has the most taste buds and variations in its distribution are found in the posterior and lateral palatal organs.

Keywords: *Cyprinus rubrofuscus*, palatal organ, SEM, taste bud