

STRUKTUR HISTOLOGIS DAN MORFOKINETIK SIRIP PERUT IKAN
GELODOK *Periophthalmus variabilis* (Eggert, 1935) DAN *Boleophthalmus*
boddarti (Pallas, 1770)

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INTISARI

Ikan gelodok (*Periophthalmus variabilis* dan *Boleophthalmus boddarti*) disebut *Amphibious Fish* karena mampu hidup di lingkungan terestrial dan akuatik. *P. variabilis* dan *B. boddarti* merupakan *mudskippers* yang mampu berjalan, melompat dan memanjat ketika berada di darat. Kemampuan yang unik pada ikan ini memerlukan struktur khusus pada sirip pelvik sebagai tumpuan/penyokong tubuhnya di daratan. Penelitian ini mempelajari struktur anatomis, histologis dan morfokinetik sirip pelvik *P. variabilis* dan *B. boddarti* serta fungsi kinetisnya ketika beraktifitas di lingkungan terestrial.

Pengambilan sampel di daerah muara sungai Desa Tluwuk Kecamatan Wedarijaksa Kabupaten Pati, Jawa Tengah. Pembuatan preparat histologis sirip pelvik menggunakan metode parafin dengan pewarnaan *Hematoxcilin eosin*, *Mallory acid fuschin*, *Periodic acid schiff* dan pembuatan preparat tulang dengan pewarnaan *Alizarin red's-Alcian blue*. Preparat sirip pelvik diamati dibawah mikroskop cahaya dan SEM. Pengamatan perilaku atau aktifitas sirip pelvik dilakukan di habitat dan di akuarium dengan rekaman kamera, sedangkan morfometri sirip dan tubuhnya diukur dengan kaliper. Data yang diperoleh yaitu morfometri, foto struktur anatomis, histologis sirip pelvik ikan gelodok (*P. variabilis* dan *B. boddarti*) serta pergerakannya di lingkungan terestrial dianalisis secara deskriptif. Kemampuan kinetik dianalisis dengan *comsol multiphysic application*.

Hasil penelitian ini menunjukkan perilaku terestrial yang berbeda dari kedua jenis ikan ini; *P. variabilis* mampu bergerak secara fleksibel, menempel atau memanjat serta menyokong tubuhnya di daerah terestrial dengan kuat, sedangkan *B. boddarti* tidak menunjukkan gerakan memanjat dan kurang agresif. Secara morfologis, anatomis, dan histologis struktur sirip *P. variabilis* berbeda dengan *B. boddarti*. Sirip pelvik pada *P. variabilis* adalah *unfused*, sepasang jari-jari sirip tidak sepenuhnya dihubungkan kulit, ukuran tubuhnya kecil, rasio sirip pelvik besar, banyaknya sel mukus pada epitel, dan gaya tekan (*stressing force*) yang besar (analisis modeling sirip dengan program komputer). Sedangkan sirip pelvik pada *B. boddarti* adalah *fused*, sepasang jari-jari sirip dihubungkan oleh kulit, ukuran tubuh besar, rasio sirip pelvik kecil, sel mukus lebih sedikit dan gaya tekan kecil.

Kata kunci : *Periophthalmus variabilis*, *Boleophthalmus boddarti*, struktur histologis, morfokinetik, sirip pelvik.

PELVIC FIN HISTOLOGICAL STRUCTURE AND MORFOKINETIC OF
GELODOK FISH *Periophthalmus variabilis* (Eggert, 1935)
AND *Boleophthalmus boddarti* (Pallas, 1770)

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ABSTRACT

Periophthalmus variabilis and *Boleophthalmus boddarti* are Amphibious Fish that inhabit both aquatic and terrestrial environment. Those fish are well known for their ability to walk, climb and jump on mud and dry land. These unique ability needs special structure support their body during terrestrial activity. This research aims to study behavioural of the fish, histological structure, and morfokinetik pelvic fin of *P. variabilis* and *B. boddarti* and relation to its function.

The samples were collected from estuary in Tluwuk village, Wedarijaksa, Pati, Central Java. Histological preparation conducted following standard paraffin method and *Hematoxcilin eosin*, *Mallory acid fuschin*, *Periodic acid Schiff* staining, fish bones were stained by *Alizarin red's-Alcian blue*. Structure of pelvic fin was observed under lighting and Scanning Electron Microscope. The behaviour observation was conducted in the field and laboratory by camera recording. Structure and morphometric study conducted by caliper scaling measurement and data were analyzed descriptively. The kinetic properties of pelvic fin were analyzed by using *comsol multiphysic application* computer program.

Result shows that pelvic fin of mudskipper, were mainly utilized during terrestrial activities such as extending, constricting, bending, and acrossing related to the type of substrat and activities. The pelvic fin of *P. variabilis* is unfused with split rays which are not interconnected each other. While pelvic fin of *B. boddarti* is fused completely, the fin rays are connected to the skin. Overall, study showed that *P. variabilis* pelvic fin is different from *B. boddarti* in term of its morphology, anatomic and histological. It is also revealed that *P. variabilis* ability of moving flexibly, attaching or climbing as well as propping the body in terrestrial area strongly.

Keywords : *Periophthalmus variabilis*, *Boleophthalmus boddarti*, histological and morfokinetik structure, pelvic fin.