

Intisari

HUBUNGAN PANJANG DAN BERAT DENGAN UKURAN OTOLITH MUJAIR (*Oreochromis mossambicus*, Peters 1852) DI RAWA PENING

Pengelolaan populasi mujair di Danau Rawa Pening, Jawa Tengah sangat penting agar pemanfaatannya berkelanjutan. Penelitian ini bertujuan untuk mencari hubungan antara panjang dan berat ikan mujair dengan ukuran otolithnya. Sebanyak 227 sampel ikan mujair diambil dari Rawa Pening. Sampel tersebut terdiri dari 120 ekor jantan dan 107 ekor betina yang dikumpulkan dari Oktober hingga November 2023. Panjang dan berat ikan diukur, serta dicatat. Ikan mujair kemudian dibedah untuk diambil otolithnya. Sampel otolith yang didapatkan total sebanyak 215 pasang, terdiri dari 116 pasang otolith jantan dan 99 pasang otolith betina. Otolith yang sudah diambil tersebut kemudian ditimbang menggunakan timbangan analitik dan diukur menggunakan software *imagej* untuk mengetahui ukurannya yaitu panjang, berat, lebar, luas, dan keliling. Hasilnya menunjukkan bahwa otolith ikan mujair memiliki bentuk yang cenderung memanjang dan lonjong, serta memiliki permukaan yang tidak rata. Otolit kiri dan kanan, serta otolith jantan dan betina, diuji secara terpisah menggunakan uji t-test dan hasilnya menunjukkan bahwa pada otolith kiri dan kanan, serta antara otolith ikan jantan dan betina, menunjukkan bahwa tidak ada perbedaan signifikan, dengan bentuk otolith yang cenderung simetris. Hubungan antara panjang dan berat ikan mujair serta ukuran otolithnya digambarkan dengan persamaan regresi linear $y = \beta_0 + \beta_1 x$. Hubungan antara panjang dan berat ikan dengan ukuran otolith menunjukkan hubungan yang positif, serta panjang otolith dapat menjadi indikator yang baik untuk menggambarkan pertumbuhan ukuran ikan.

Kata kunci: danau, ikan, lestari, populasi, sumberdaya.

Abstract

RELATIONSHIP BETWEEN LENGTH AND WEIGHT WITH OTOLITH SIZE OF MOZAMBIQUE TILLAPIA FISH (*Oreochromis mossambicus*, Peters 1852) IN RAWA PENING LAKE

Management of the tilapia population in Rawa Pening Lake, Central Java is very important for sustainable fishing. This research examines the relative Mozambique tilapia (*Oreochromis mossambicus*), which is one of the primary commodities in Lake Rawa Pening, Central Java. Therefore, the management of Mozambique tilapia resources in Rawa Pening is necessary. The biological parameters of Mozambique tilapia are important for assessing growth and determining management policies. One method to predict the growth of Mozambique tilapia is through otolith studies. This research aims to examine the relationship between the length and weight of Mozambique tilapia and the size of their otoliths. Two hundred twenty-seven tilapia samples were collected from Rawa Pening, consisting of 120 males and 107 females, gathered from October to November 2023. The length and weight of each fish were measured and recorded. The fish were then dissected to extract the otoliths. A total of 215 pairs of otolith samples were obtained, comprising 116 pairs from males and 99 pairs from females. The extracted otoliths were weighed using an analytical scale and measured using ImageJ software to determine their length, weight, width, area, and perimeter. The results indicate that the otoliths of Mozambique tilapia tend to be elongated and oval-shaped, with an uneven surface. The left and right otoliths and male and female otoliths were tested separately using a t-test, which showed no significant differences between left and right otoliths or between male and female otoliths, indicating a tendency towards symmetry. The linear regression equation $y = \beta_0 + \beta_1 x$ represents the relationship between the length and weight of the tilapia and the size of their otoliths. The relationship between fish length and weight and otolith size showed a positive correlation, and otolith length can serve as a good indicator of fish size growth.

Keywords: lake, fish, sustainable, population, resources.