



**THE ACCUMULATION OF MERCURY AT LEBO LAKE,  
WEST SUMBAWA REGENCY,  
WEST NUSA TENGGARA**

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**Abstract**

The lake of Lebo encounters an environmental pressure due to the mercury wastes which originate from the activity of traditional gold mining. There are 2.353 gold logs for gold processing which are near to the lake. Mercury within the lake sediment is able to cause methylation which is conducted by bacterial sulphate reducing. The present research focuses on the accumulation of mercury within the liver of Climbing Perch (*A. testudineus*), Cork (*C. striata*), Eel (*M. albus*), and Tilapia (*O. niloticus*) and the inlet sediment, the Intensification, as well as the outlet of the lake. The study was conducted on February. The concentration of mercury is determined through *mercury analyzer* tool at LPPT UGM. The result yielded that the highest accumulation is in the inlet sediment which is 14,44  $\mu\text{g/Kg}$ . The mercury concentration decreases as it departs from the source of pollutants. Such thing can be caused by the absence of the current which makes mercury distributes unequally. In the liver of the fishes, the highest concentration is within *A. testudineus* which is 204,6  $\mu\text{g/Kg}$ , *C. striata* 38,4  $\mu\text{g/Kg}$ , *O. niloticus* 9,3  $\mu\text{g/Kg}$  and *M. albus* 1,3  $\mu\text{g/Kg}$  respectively. These concentration is above the tolerant consumption which is set by FAO/WHO on 2011 that is 4  $\mu\text{g/Kg}$ . Due to which the consumption of the fishes should be reduced.

Keywords: accumulation, mercury, consumption treshold, Lebo Lake



## **AKUMULASI MERKURI DI DANAU LEBO, KABUPATEN SUMBAWA BARAT, NUSA TENGGARA BARAT**

### **Abstrak**

Danau Lebo mengalami tekanan lingkungan karena adanya limbah merkuri yang berasal dari aktivitas penambangan emas tradisional. Terdapat 2.353 gelondong yang berada di tiga desa yang berdekatan dengan Danau Lebo. Merkuri dalam sedimen danau dapat mengalami metilasi oleh bakteri pereduksi sulfat. Penelitian ini merupakan suatu studi mengenai akumulasi merkuri dalam organ hati ikan *Anabas testudineus* (Betok), *Channa striata* (Gabus), *Monopterus albus* (Belut) dan *Oreochromis niloticus* (Nila) dan sedimen dari area inlet, area intensifikasi dan outlet danau. Penelitian dilaksanakan pada bulan Februari 2016. Penentuan kadar merkuri menggunakan alat *mercury analyzer* di LPPT UGM. Hasil penelitian menunjukkan akumulasi tertinggi terdapat dalam sedimen area inlet danau sebesar 14,44 $\mu$ g/Kg. Konsentrasi merkuri menurun seiring menjauhi sumber polutan. Hal ini dapat disebabkan oleh ketiadaan arus yang menyebabkan merkuri terdistribusi secara tidak merata. Konsentrasi merkuri tertinggi terdapat dalam hati *A. testudineus* sebesar 204,6  $\mu$ g/Kg, *C. striatus* sebesar 38,4  $\mu$ g/Kg, *O. niloticus* 9,3  $\mu$ g/Kg, dan *M. albus* sebesar 1,3  $\mu$ g/Kg. Konsentrasi ini berada di atas ambang toleran konsumsi yang ditetapkan oleh FAO/WHO tahun 2011 yaitu sebesar 4 $\mu$ g/Kg sehingga konsumsi ikan tersebut perlu dikurangi.

Kata kunci : akumulasi, merkuri, ambang konsumsi, Danau Lebo