

**BIOMASSA MIKROBA DAN AKTIVITASNYA PADA SEDIMEN DAN AIR DANAU  
LIMBOTO DENGAN TEKNIK PENGAYAAN *EX-SITU* MIKROKOSMOS**

**The Microbial Biomass and Their Activity on Sediment and Water of Limboto Lake base on The  
Enrichment *ex-situ* Microcosmos Technique.**

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**Abstract :** The objectives of this study were to count the microbial biomass on sediment and water of Limboto lake and to determinate the microbial diversity on sediment and water based on their metabolic activity through the enrichment *ex-situ* microcosmos technique. The study done in 2 steps were sampling of sediment and water on Limboto lake and laboratorium observation. pH and temperature were physical indicator of sample and laboratory observation was microbial count (bacteria) based on plate count method. The microbial diversity determinated by the enrichment *ex-situ* microcosmos technique (winogradky colomn). The microbial diversity observed in 21 days base on the physical and chemistry changing. The study was succesfully counting microbial biomass on sediment and water Limboto lake. The count of microbial biomass was  $6.45 \times 10^7$  CFUgr<sup>-1</sup> (in sediment) and  $2.18 \times 10^6$  CFUml<sup>-1</sup> (the water). The enrichment *ex-situ* microcosmos technique with winogradsky colomn was succesfully determinate microbial diversity based on microbial metabolic activity. The microbial metaolic activity was show through physical, chemistry and biological change on sediment and water sample. That means was aquatic ecosystem on Limboto lake contain some microbial metabolic groups (guilds). The guilds were show microbial activity in the ecosystem, especially on sediment colomn, microaerophylic and water colomn.

***Keywords: Microbial Biomass, Enrichment ex-situ Microcosmos Technique, Microbial Activity***