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### Community Fluctuation and Biological Water Quality Evaluation of Benthic Macroinvertebrates in Mt. Deogyusan

Mi Jin Lee, Myung Joong Yoon, Eul Won Seo and Jong Eun Lee

*Department of Biological Science, Andong National University, Andong 760-749*

Community fluctuation and biological assessment of water quality were carried out in Deogyusan National Park from April 2006 to October 2007. The benthic macroinvertebrates collected from the surveyed sites were composed of 15,304 individuals, 147 species, 61 families, 15 orders, 6 classes and 5 phyla. Four of the biggest Orders were Order. Ephemeroptera 38.69%, Order. Trichoptera 22.32%, Order. Diptera 14.58% and Order. Plecoptera 11.90%. The individual percentages of E.P.T. group were Ephemeroptera 5.07%, Plecoptera 33.40% and Trichoptera 7.31%.

The species component ratios of FFG (Functional Feeding Groups) were GC 88.23%, FC 6.47%, SC 2.06% at site 1, GC 41.96%, FC 27.65%, SC 13.78% at site 2, GC 70.62%, SC 20.38%, FC 3.20% at site 3, GC 64.59%, SC 11.59%, FC 1.14% at site 4 and GC 50.70%, SC 24.49%, FC 3.69% at site 5. As a whole, the ratios of GC were particularly high. The FC ratios were relatively high in flat stream (site 1, 3: the low altitude sites), and a site have the higher altitude, the FC ratio have the lower value. The arrange of ESB (Ecological Score of Benthic macroinvertebrate community) was 123~147, because of that, water qualities were 'I' and saprobities were 'frist priority protection waters of oligosaprobic' in all surveyed sites.

**Key words:** Benthic macroinvertebrates; Community fluctuation; FFG; ESB

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### Inhibition of Biogenic Amines Producing Bacteria by Lactic Acid Bacteria

Min Woo Bang, Chang D. Chung and Sang S. Lee

*Dept. of Animal Science & Technology, Sunchon National University, Jeonnam 540-742, Korea*

The study was conducted to inhibit the growth of bacterial strains (*Lactococcus garvieae*, *Lactococcus lactis* subsp. *lactis*, *Klebsiella pneumoniae*, *Morganella morganii*, *Vibrio olivaceus*, *Lactococcus garvieae*, *Hafnia alveif*) from tuna wastes producing the biogenic amines. For this purpose, a total of 30 bacterial strains were used to determine prevention of bacterial growth by three different techniques; agar diffusion assay, CFU/ml, and Optical Density (OD) to select the suitable lactic acid bacteria. HPLC was used to examine an accurate depression amount of biogenic amine and measure a depression amount. As the result, *Lactobacillus plantarum* KCTC3014, *Str. Thermophilus*, *Lactobacillus plantarum* CU722, *Lactobacillus plantarum* CU722, *Lactobacillus acidophilus* ATCC 4356 were highly inhibited by the bacteria of *Lactococcus garvieae* 36, *Lactococcus lactis* subsp. *lactis* IL1403, *Klebsiella pneumoniae*, *Morganella morganii* CPD30, *Lactococcus garvieae* NRIC 0612 respectively.

**Key words:** Biogenic amines; Lactic acid bacteria; Agar diffusion