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Community Composition and Functional Feeding Groups of the Benthic Macroinvertebrates in Wicheon stream of Nakdong River

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A biological assessment of community composition and functional feeding groups were carried out in Wicheon stream of Nakdong river from April 2006 to October 2007. The benthic macroinvertebrates collected seasonally from 10 field sites were identified mostly up to species level. The benthic macroinvertebrates collected from the surveyed sites were composed of 194 species, 71 families, 18 orders, 7 classes and 4 phyla. Those the benthic macroinvertebrates were composing of Ephemeroptera (44 spp.: 27.50%), Trichoptera (32 spp.: 20.00%), Odonata (30 spp.: 18.75%), Diptera (17 spp.: 10.63%), Coleoptera (14 spp.: 8.75%), Plecoptera (7 spp.: 4.38%) and Megaloptera (2 spp.: 1.25%). Seasonal occurrence of species was more diversified in spring and autumn than in summer and winter. The number of collected the benthic macroinvertebrates and their biomass gradually decreased towards downstream. The most abundant FFG was the predator (P: 36.25%), next group was occupied by gathering collector (GC: 26.88%), scraper (SC: 14.38%), shredder (SG: 7.50%), filtering collector (FC: 6.88%), unknown (4.38%), plant piercer (PP: 3.75%). The occupancy ratio of SH and GC of the FFGs gradually decreased from St. 1 to St. 10, while FC and SC gradually increase from St. 1 to St. 6, decreased from St. 7 to St. 10.

Key words: Biological water quality evaluation, Benthic macroinvertebrates, Functional feeding group

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Influence of Muddy Water in Imha Reservoir on the Community Structure of Benthic Macroinvertebrates

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To figure out the effect of the muddy water on the benthic macroinvertebrates, Six surveyed sites were chosen in control and experimental areas. The control area is defined to the Giran stream which are not affected with the muddy water. The experimental area is the Imha reservoir, which is the muddy water, and the river which is discharge from Imha reservoir. Quantitative sampling and measurement of water quality were conducted from October 2007 to April 2008. As a result, it occurred at the experimental area : Oct., mean species 26, dominance index (DI) 0.566, species diversity index (H') 0.915, Species richness index (RI) 3.359, evenness index (EI) 0.598, korean saprobic index (KSI) 2.2, water quality "B", environmental condition "Satisfactory"; Apr., mean species 36, DI (0.695), H' (2.380), RI (3.765), J' (0.460), KSI (2.7), water quality "C", environmental condition "Some satisfactory", as compared with the control area : Oct., mean species 39, DI (0.415), H' (3.774), RI (4.414), J' (0.714), KSI (0.7), water quality "A", environmental condition "Very satisfactory"; Apr., mean species 39, DI (0.452), H' (3.568), RI (4.337), J' (0.674), KSI (1.1), water quality "B", environmental condition "Satisfactory". The individual ratios of E.P.T. group indicated that in experimental areas (Oct. : 37.72%, Apr. : 26.97%) were lower than in control areas (78.40%, 57.26%) respectively.

Key words: Muddy Water, Imha Reservoir, Community Structure