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Food Safety & Sustainability Aquaculture Class

Friday, November 23, 2012 (First session of Parallel Class)
Moderator: **Dr. Sapto P. Putro**; Room: **Muria Room**

13:20–13:40	Enzymatic Antioxidant Activity in Shrimp Tissues Through White Spot Syndrome Virus Infection (**Adnan Baiduri,** Pangkep State Polytechnic of Agriculture) – Page 89
13:40-14:00	The Richness of Bacteria Associated With Bacterial Diseases on the Giant Gouramy (*Osphronemos gouramy*) (**Sarjito,** Diponegoro University) – Page 87
14:00-14:20	The Occurence of White Spot Synmdrome Virus (WSSV) Disease on Tiger Shrimp (*Penaeus monodon*) in Nort Coast of West Java, Indonesia (**Rohita Sari**, Diponegoro University) – Page 76
14:20-14:40	Discovery of Traceability and Sustainability Aspects of Fish Meal and Fish Oil on Shrimp Aquafeed Industry in Indonesia (**Agung Sudaryono**, Diponegoro University) – Page 94
14:40:15:00	An Integrated Biotechnology-Based Disease Prevention Strategy Involving Immunostimulants, Antivirals and Multiplex PCR (**Ung Eng Huan,** BioValence Sdn.Bhd) – Page 24
15:00-15:20	The Probiotics Application on *Scylla olivacea* Larvae Reared in Laboratory (**Gunarto,** BPPBAP Maros) – Page 46
15:20-15:40	***Refreshment break***

Friday, November 23, 2012 (Second session of Parallel Class)
Moderator: **Dr. Sardjito**; Room: **Muria Room**

15:40–16:00	Food Habits Tilapia and Milkfish Cultivated on the Polyculture Pond Milkfish, Shrimp, and Seaweed (**Early Septiningsih**, BPPBAP Maros) – Page 43
16:00-16:20	Tiger Shrimp Culture in Indonesia Using Local Probiotic Bacteria (**Muharijadi Atmomarsono**, BPPBAP Maros) – Page 39
16:20-16:40	Immunomodulating Activity of Fucoidan, *Padina* sp. in Tilapia (**Alim Isnansetyo,** University of Gadjah Mada) – Page 68

Saturday, November 24, 2012 (Third session of Parallel Class)
Moderator: **Dr. Sardjito**; Room: **Eureka Room**

10:40-11:00	Development of an Environmental Friendly feeding Management for Giant Gouramy (*Osphronemus gouramy* Lac.) to Improve Aquaculture Sustainablity (**Edy Yuwono**, University of General Soedirman) – Page 57
11:00-11:20	Biomonitoring of Environmental Quality of Fish Farming Practice at Lake Rawapening, Central Java Based on Macrobenthic Assembalges (**Sapto Purnomo Putro**, Diponegoro University) – Page 76
11:20-11:40	Sustainable Seafood Production : Malaysian Status With the World Comparison (**Md. Arif Chowdhury**, Universiti Sains Malaysia) – Page 83
12.00-12:20	Antibacterial Activity of Herbal Extracts Against Streptococcus Agalactiae Biotype 2 Infection in Tilapia *(Oreochromis Niloticus)* (**Manoj Tukaram Kamble,** Asian Institute of Technology) – Page 93

BIOMONTORING OF ENVIRONMENTAL QUALITY OF FISH FARMING PRACTICE AT LAKE RAWAPENING, CENTRAL JAVA BASED ON MACROBENTHIC ASSEMBALGES

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ABSTRACT

Over the last decade, the rapid development of fish farming cage system activities at Lake Rawapening has led to the emergence of organic enrichment that may impact on changes in environmental quality. This study aims to determine the environmental quality and level of disturbance in the area of fish farming cages using macrobenthic community structure. Sampling was done in July, October, and December 2009 in three locations: Location I is at area of cages that are no longer in operation (fallowed site), Location II is at a new cage area actively operating and Location III as a reference/control is an area that is not used as a place of fish farming. Random sampling technique was employed in this study. Data were analyzed using ANOVA analysis, the index of species diversity (H'), the similarity type (J'), and multivariate analysis.

The results show the variation of physical-chemical conditions over time, but not significantly different between sites. The composition of sediment in both the farming area as well as the reference/control site was dominated by coarse sand (42-47%). Macrobenthic structure differed significantly between sampling locations, but not between sampling time. Macrobenthic community structure at Location I and Location II were generally dominated by opportunistic taxa, particularly the Family Lumbrineridae (23.9%), Capitellidae (22.9%), and Tubificidae (14.7%) for Location I, and Family Thiaridae (28.4%), Turritellidae (25.6%), and Tubificidae (15.4%) for Location II. While at the Location III was dominated by the Family Thiaridae (52.7%). Result from multivariate analysis using Non-Metric Multi Dimensional Scaling (NMDS) indicates that the structure of macrobenthos is more likely to be influenced by the different physical-chemical environment in the three sampling locations. This shows the tendency of differences in species composition between sites during the sampling period.

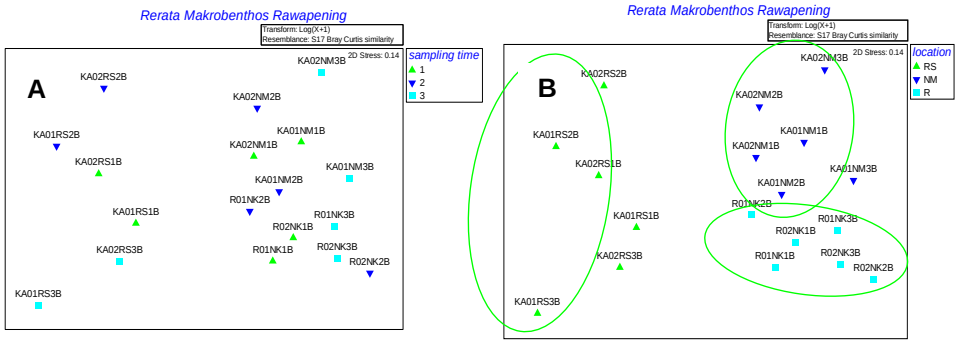

Fig.1. Ordination of Non-Metric Multi Dimensional Scaling (NMDS) projected based on data transformation of log (X +1) of abundance of macrobenthos for each sampling time (A) and sampling location (B).

The study provides important implications for the arrangement of fish farming activities at Lake Rawapening, both in density and ordinate position in order to maintain the ecological function of this lake.

Keywords: *Rawapening, cage fish culture, sedimentation, makrobenthos, opportunistic taxa*