D-12 Evaluation of water quality using rapid bioassessment protocol (II) in surface water bodies of Northern Thailand

W A H P Guruge*
Dept of Biology, Chiang Mai University, Thailand

Freshwater ecosystem is indispensable to human life and there is a high potential for water quality becoming degraded due to human activities. Therefore water quality monitoring has drawn universal attention. Biological monitoring is more popular due to low cost, effectiveness and it is environmentally friendly.

Rapid Bioassessment Protocol (RBP) is popular due to its efficiency, low cost and time-saving achieved by reduced sampling and data analysis. This work was carried out to investigate efficiency of application of RBP (II), developed by United States Environmental Protection Agency, using macro invertebrates in surface water bodies of Northern Thailand.

Macro invertebrates were collected using artificial substrate samples from 10 sites comprising 4 different water bodies i.e. stream, river, irrigation canal and sewage canal in wet and dry season. Collected macro invertebrates were identified upto family level. The metrics used in RBP (II) and the protocol used in GEMS/water system were used to calculate the quality points for each site. Quality points per site were totaled and compared to the totals from the reference site (stream site 3) and expressed as a percentage. Sites were classified into 4 broad categories of water quality based on final percentage classification.

% reference site	*water quality impairity*
>80	None
51-80	Slightly
20-50	Moderately
<20	Severely

Sewage canal SC2 was severely impaired in both seasons. Most of the stream sites showed non impaired condition in both seasons. Due to dilution of pollutants in wet season, moderately or slightly impaired sites in dry season changed to non-impaired condition in wet season. RBP (II) was successful in differentiating water quality in study sites.

Financial assistance by Chiang Mai University and GTZ is acknowledged.
* Present Address: Dept of Zoology, University of Ruhuna, Matara