Proceedings of the 25th Anniversary Scientific Conference of NARA on Tropical Aquatic Research Towards Sustainable Development

Assessment of Copepods and Rotiferan diversity in a Better Management Practices (BMP) farm and its vicinity

S.G. Rajapaksha*, S. Jayakody, and J.M.P.K. Jayasinghe

Department of Aquaculture and Fisheries, Faculty of Livestock, Fisheries and Nutrition, Wayamba University of Sri Lanka, Makandura, Sri Lanka

Key words: abundance, management practices, complete recirculation, diversity, zooplanktons

Abstract

As a solution for controlling disease outbreaks and increasing the profits, Better Management Practices (BMP) has proposed for shrimp farmers. One vital aspect of BMP is maintaining the water quality. Through quantifying the zooplankton (heterogeneous assemblages of minute passive floating animal forms found in water) diversity, quality of the water could be evaluated. In this study, spatiotemporal variations in copepod and rotiferan diversity was evaluated in a BMP farm (reservoir, ponds, effluent canal) and its vicinity (inlet and outlet of BMP farm, outlet of a Non-BMP farm and halfway between the BMP and non BMP farm outlet).Copepods and rotiferans were identified up to family level where possible and their numbers were determined by Sedgwick Rafter cell method. Shannon-Weiner Index of diversity and Index of Dominance were calculated and spatiotemporal variations were compared by Analysis of Variance and Multivariate analysis. Diversity within the farm was significantly low in reservoir compared to ponds and effluent canal. There was no difference in general diversity within the BMP farm and in vicinity, also general diversity in different sites of vicinity were also similar. Index of dominance was similar in all sites within the BMP farm and rotiferans were the most dominant species. Temporal fluctuations in general diversity indicated increase in diversity until harvest and a sharp decline. Hierarchical analysis of general diversity indicated similarities in general diversity of ponds, inlet and effluent canal. However, general diversity of reservoir was different. It is concluded that no significant difference in zooplankton diversity is evident in BMP farm and its vicinity.

* *Correspondance :* Sukith2002@yahoo.co.in