Arpita Dalal et al., J Aquac Res Development 2016, 7:8 (Suppl)
http://dx.doi.org/10.4172/2155-9546.C1.008

Do aquatic insect assemblages change overtime and space? A study from different lentic ecosystems of Cachar district, Assam, India

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Aquatic insects are commonly known as good fish diet, bioindicators of freshwater pollution and can be utilized as biocontrol agents. Understanding the drivers of insect distribution, abundance and species richness is thus vital for healthy fish stocks and aquaculture practices. The present study examined spatial and temporal variation in aquatic insect assemblages in several different lentic (standing freshwater) ecosystems- oxbow lake, floodplain lake, rural and urban ponds, and two agricultural fields of Cachar district, Assam. With kick sampling, aquatic insects were collected along with water samples in four seasons (post monsoon, winter, pre-monsoon and monsoon) during 2013-14. We collected 2260 individuals belonging to 119 taxa, 36 families and 8 orders. The highest number of taxa was recorded from the floodplain lake, with the lowest from the oxbow lake. Post-monsoon and winter recorded highest taxa, whereas monsoon had the lowest. Engelmann's scale of dominance showed *Anisops breddini* (water boatman), *Cloeon* spp. (Mayfly), *Micronecta scutellaris* (Lesser water boatman), *M. haliploides* (Lesser water boatman), and *Ochthebius* spp. (Minute moss beetle) as the eudominant taxa from the different lentic systems. There was a significant positive correlation of both taxa richness and taxa density with dissolved oxygen and potassium, whereas there were negative correlations with water temperature, rainfall, water depth and size of water bodies. In addition, we will discuss the factors regulating the distribution of aquatic insects in different seasons.

Biography

Arpita Dalal is pursuing her PhD under the supervision of Susmita Gupta (Associate Professor) at the Department of Ecology and Environmental Science, Assam University, Silchar, India and is a Senior Research Fellow (SRF) of the Department of Science and Technology (DST), New Delhi, India. She has cleared National Eligibility Test (NET), December 2016 for Environmental Sciences and recently she has been awarded and designated as JSPS HOPE Fellow at the 8th HOPE Meeting with Nobel Laureate, JSPS, Japan. Currently, she has been selected in a PhD exchange program jointly sponsored by the Department of Biotechnology (DBT), New Delhi, India and British Council, UK under the program 'Newton Bhabha PhD placement program', and is now working as a visiting Research Associate at Queen's University, Belfast, UK under the guidance of Professor Jaimie Dick for a period of six months. At present she has three papers in peer reviewed journals.

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