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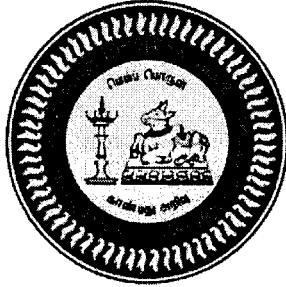
Vavuniya Campus Annual Research Session 2011

(VCARS -2011)

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Theme for 2011 Session


“Emerging Opportunities for Development of the Regions”

16th November 2011

BOOK OF ABSTRACTS



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Published by:
Vavuniya Campus of the University of Jaffna,
Park Road,
Vavuniya, 43000
Sri Lanka

Web: www.vau.jfn.ac.lk/VCARS/vcarshome.php
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ISSN: 1800-4911

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AQU/82

Preliminary Study of Major Zooplankton's Abundance in Polluted and Non Polluted Locations of Vavuniya Tank and Ariyakulam Pond

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The influence of pollution effects on the abundance of major zooplanktons like Rotifera, Cladocera and Copepoda were investigated at polluted and non polluted locations of two different fresh water bodies; Vavuniya tank (in between 8°45'13.75-59.23" latitude and 80°30'7.50-53.21" longitude) in the Vavuniya District and Ariyakulam pond (in between 9°40'3.09-7.98" latitude and 80°1'6.77-10.47" longitude) in the Jaffna District was chosen; the polluted and non polluted locations were identified by measuring the BOD₅; during the period from December 2010 to February 2011. The Vavuniya tank (0.6 km²) is perennial and more productive by means of its inland capture fisheries and irrigation, while Ariyakulam (0.015 km²) is ephemeral and not used for fisheries or irrigation. Water samples were collected in the littoral zones. As these locations are densely packed with vegetations, sieve-set (50µm) were used to filter the water samples, preserved with 10% Ethanol and taken to the laboratory for qualitative and quantitative analysis, under the low-power of light microscope. Sedgewick-Rafter cell was used to estimate the zooplankton abundance as individuals/m³. The zooplankton community structure in the non polluted locations of both water bodies were Rotifera > Cladocerans > Copepods. Vavuniya tank leads the Ariyakulam in the entire zooplankton community structure. Especially the abundance of Rotifer was significantly higher (p<0.05) in Vavuniya tank than Ariyakulam. Comparison of the Rotifera abundance within the Vavuniya tank, indicates that it was significantly higher (p<0.05) abundance in non polluted location than polluted location. The second largest abundance goes to Cladocera in the non polluted locations of both water bodies where Vavuniya tank (11786±7116) leads the Ariyakulam (4683±1933). On the contrary, Ariyakulam (4418±517) leads the Vavuniya tank (1904±1833) in both polluted locations. The abundance of Copepods was significantly (p<0.05) higher in the polluted location of the Vavuniya tank, when compared to the polluted location of the Ariyakulam. As it was a preliminary study, the future studies needed to investigate the influence of other biotic and abiotic factors on the zooplankton community structure and abundance in water bodies.

Key words: Zooplankton, pollution indicators, inland waters

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