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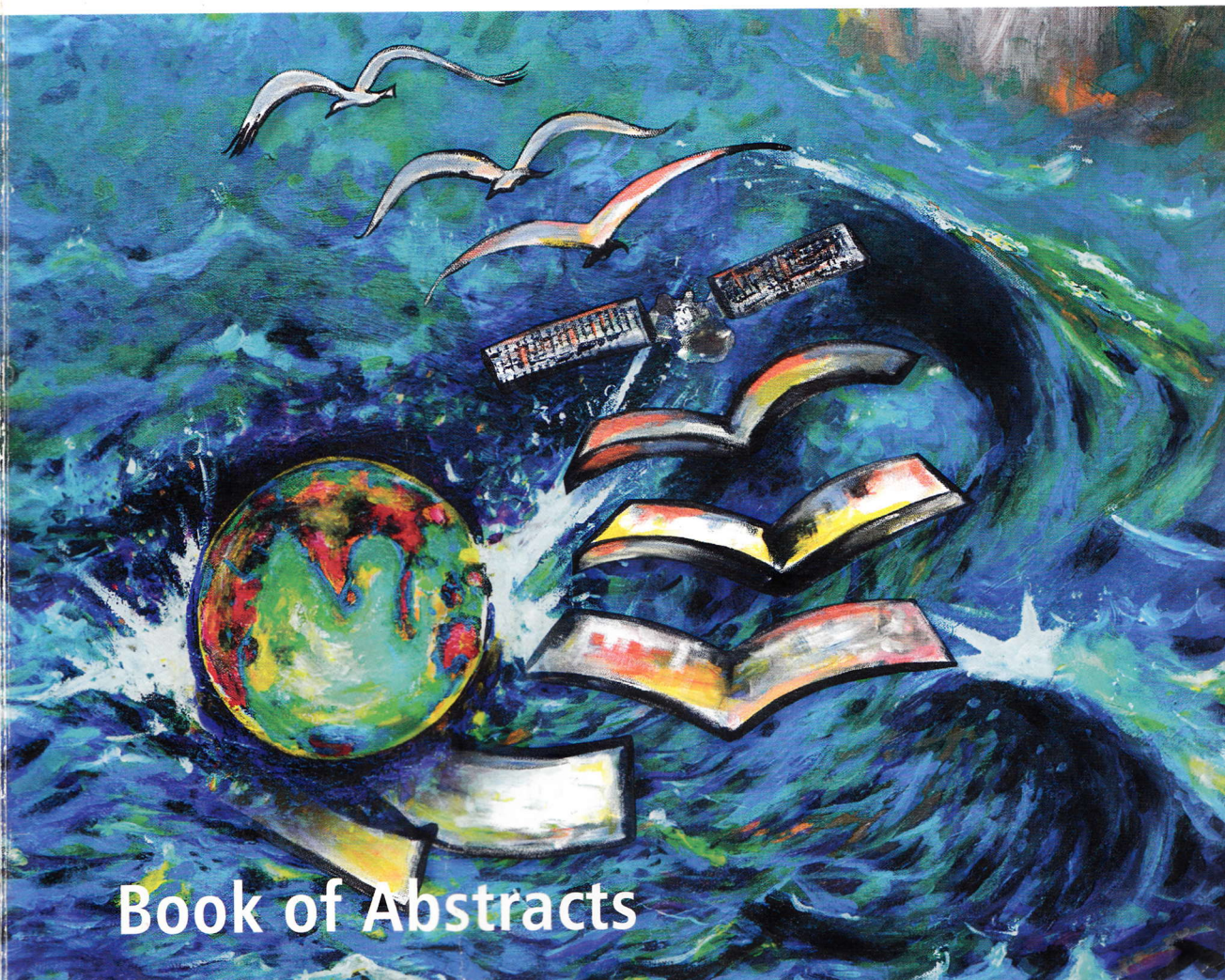
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Book of Abstracts

Impact of body size on bio-accumulation and depuration of microbial loads in the short-neck clam *Paphia malabarica*

Chinnadurai, S.*, J. Sharma, P. S. Alloydious, K. K. Sajikumar, V. Venkatesan, V. Kripa and K. S. Mohamed

Central Marine Fisheries Research Institute, Kochi 682 018, Kerala, India. Email: chinnaduraitvl@gmail.com

Ashtamudi Lake is the second largest brackishwater lake in Kerala, which supports a short-neck clam fishery of around 12000 tonnes/year and the produce is mostly exported. The short neck clam *Paphia malabarica* is one of the most sought after species among clams. Because of its attractive yellow foot and delicious taste, it is exported to niche markets like Japan and other southeast Asian countries since 1990s. Very recently, this clam fishery has been certified by Marine Stewardship Council (MSC) and therefore is now open to Western markets. Food quality and safety is the most important issue in bivalve shellfish trade. The nature of the end product and the associated risks are highly significant, especially where they cross national borders and it should be warranted free from any hazards. Based on this background information, we selected clam *Paphia malabarica* as candidate species, for studying the natural accumulation of bacterial loads and depuration dynamics of coliform bacteria and evaluated under experimental conditions.

Two independent trials were assayed in a static experimental depuration system with a total volume of approximately 200 litres, with two different body sizes (Small 20-30 mm APM, Big->30 mm APM) and loading densities 1 kg/4 litres (low), 2 kg/4 litres (high). The objective was to compare the bio-accumulation of bacterial loads in two different body sizes and kinetics of the coliforms under the experimental conditions over 24h of depuration at two different densities. The pattern of bio-accumulation and depuration was similar in both the size group, the values being higher for the bigger size group. The clam kept for depuration with low density (1kg/4 litres) took only 6h of depuration to reduce the *E. coli* levels to below the threshold level as per EU standards. But high density (2kg/4 litres) depuration took 24h. ANOVA showed the bio-accumulation and depuration of bacterial loads was not significantly varied ($p > 0.01$) between smaller and bigger size groups. On the other hand, the depuration of total coliforms, faecal coliforms, *E. coli* and total plate count were highly significant ($p < 0.01$) with different time interval and varying densities.

The effects of traditional depuration, heat shucking and pressure steaming on the bacterial loads were also evaluated. The traditional depuration is a common practice in Ashtamudi Lake done by all clam fishers. After harvesting the clams, they are kept for depuration with limited water for 10-12 h duration of (evening to early morning). In the morning the clams are heated for 15-20 minutes in large container covered with cotton cloth or gunny bags to maintain the heat and steam. Because the clams are over cooked, it was easy to shuck the meat