

**D-51: Physicochemical parameters affecting the abundance and seasonal dynamics of Copepods in a coastal lagoon of Southern Sri Lanka**

P R T Cumaranatunga , L P Titus

*(Dept of Fisheries Biology, University of Ruhuna, Matara)*

Physicochemical and biological characters of lagoons are the major factors which attract certain edible fin-fish and shell-fish into lagoons which serve as their feeding and breeding grounds. Zooplankton could be considered as the most important food item for them. Present study was carried out in Malala Lagoon of Southern Sri Lanka to identify factors, which affect the dynamics of copepods which are an abundant group of zooplankton and also identified among the gut contents of several economically important lagoon dwelling fish species.

Zooplankton were collected fortnightly using a Schindler sampler with a plankton net having a mesh size of 80 $\mu$  and were preserved in 4% formaldehyde. They were qualitatively and quantitatively analysed after sub-sampling using a Kott plankton splitter. Copepods were identified according to Fernando (1985). During all sampling occasions physicochemical parameters were determined.

Composition of calanoids, cyclopoids and harpacticoids were 64.75%, 33.88% and 1.37% respectively. *Pseudodiaptomus annandelei* was the most dominant (43.34%) followed by *Thermocyclops decipiens* (25.57%) and *Paraergasilus brevidigitus* (11.99%). Calanoids showed a positive correlation ( $r \geq 0.5$ ) to conductivity and salinity. This was clearly displayed by *P. annandelei* which also show a negative correlation ( $r \geq -0.5$ ) with water depth and Harpacticoids also behaved similarly. *Heliodyptomus viduus* showed a positive correlation ( $r = 0.5$ ) to phosphate in water. Cyclopoids showed a negative correlation ( $r \geq -0.5$ ) to salinity and hardness and a positive one ( $r = 0.5$ ) to nitrate with the exception of *Paraergasilus* sp. which is a parasitic cyclopoid which behaves similar to other non-parasitic cyclopoids.

Calanoids are the dominant group of copepods in Malala Lagoon. Harpacticoids and calanoids as a whole show a preference to shallow and saline water with high conductivity whereas, cyclopoids display a preference to soft freshwater containing nitrate. *Paraergasilus brevidigitus*, which is a parasite cyclopoid is an exception to the latter group which displays a preference similar to that of calanoids.