

Chaetognaths are dominant marine macro zooplankton predators and they are second only to copepods in abundance and biomass (Oresland, 1990). Chaetognaths also have a considerable influence on copepod prey populations, which make up an important food item of economically important planktivorous fish. This study investigated the diet of a chaetognaths and related it to copepod populations at a coastal site located 3 Km off Dondra.

Zooplankton samples were collected fortnightly from March 1998 to January 1999 using a WP-2 plankton net (mesh size 90 μm , mouth area of 0.25 m^2). Volume of water passed through the net was measured using a calibrated flow meter. Samples were preserved in 4% formaldehyde and sub sampled by a Kott's plankton splitter. Wet weight of the whole zooplankton sample was measured, and copepods and chaetognaths were counted microscopically. Chaetognath, *Flaccisagitta enflata* was sorted, counted and their total body length and weight were measured. They were dissected under a stereo- microscope, to identify and count food items in their gut. Daily feeding rate on copepods was calculated.

In this study $23.8 \pm 27.08\%$ of the zooplankton biomass consisted of chaetognaths over the month of March 1998 to January 1999. Copepods were the most common food item marking up $97.3 \pm 5.01\%$ of chaetognath food found in gut contents of *Flaccisagitta enflata*. *Paracalanus* sp, *Oithona* sp., parasitic cyclopoid sp. and *Microsetella* sp. were the copepod species found among gut contents over the study period. Feeding rate of *Flaccisagitta enflata* on copepods range from 0.25 (in September) to 6.11 (in October) prey items day⁻¹. In the anterior, middle and posterior parts of the gut copepods consisted of 63.518 %, 13.681% and 22.801% of gut contents respectively. *Flaccisagitta enflata* could reduce the copepod population by 80.2% within 30 days, if other factors

such as reproduction and recruitment are not considered. There was no significant relationship between feeding rate of the chaetognaths and the density of copepod population in the zooplankton.

Diet and predation impact of chaetognath, *Flaccisagitta enflata* , in coastal waters off Dondra in southern Sri Lanka.