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VARIATION OF MEIOFAUNA DURING DAY TIME FOLLOWING FULL MOON AND NEW MOON

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ABSTRACT

Aim of this research was to investigate meiofaunal movement patterns in day time at two stations in the polluted and unpolluted area in every three hours during full moon and new moon time during 2006 & 2007. Meiofauna was abundant in all samples, the animals are Harpacticoida, Nematoda, Oligochaeta, Tardigrada, Ostracoda etc.

INTRODUCTION

Meiofauna variation during sunlight period was studied at two stations namely station 1 (Adayar) stressed by sewage pollution and station 2 (Besant Nagar) a relatively unpolluted area (Tables 4 a,b). Meiofauna population in the two stations was composed of nematodes, harpacticoid copepods, foraminiferans, polychaetes, oligochates and ostracods.

The nematodes comprised 25-40% of the population at station 1 and 53-65% at station 2 (Fig. 1 a, b). Nematodes, copepods and foraminiferans formed more than 60% at station 1 and 80% at station 2, and small percentage was made up by communities of polychaetes and ostracods (Fig. 1 a, b).

Table 1a. Variation of meiofauna density at Adayar following New Moon (Station 1) during 2006 and 2007.

Fauna	Time intervals									
	6am		9am		12pm		3pm		6pm	
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
Nematodes	160	112	148	120	210	160	132	120	120	80
Copepods	40	34	35	48	42	25	30	35	25	12
Foraminiferans	15	40	87	59	75	30	60	44	35	18
Polychaetes	65	38	98	25	75	45	53	43	25	30
Oligochaetes	120	90	180	129	194	140	100	110	80	102
Ostracodes	5	10	38	12	93	14	42	18	15	10
Total	405	324	586	393	689	414	417	370	300	252

Table 1b. Variation of meiofauna density at Besant Nagar following Full Moon (Station 2) during 2006 and 2007.

Fauna	Time intervals									
	6am		9am		12pm		3pm		6pm	
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
Nematodes	220	350	210	378	350	410	310	390	250	250
Copepods	120	180	110	202	190	240	190	210	120	125
Foraminiferans	87	109	70	147	98	190	90	120	80	80
Polychaetes	25	50	20	50	25	98	30	44	20	40
Oligochaetes	15	20	10	12	10	15	12	22	10	15
Ostracodes	15	10	20	45	15	60	10	40	10	25
Total	**482**	**719**	**440**	**834**	**688**	**1013**	**642**	**826**	**490**	**535**

The mean density of meiofauna at station 1 was in the range of 300-689 n/10cm^2 and 252-414 n/10cm^2 during 2006 and 2007 respectively. At station 2, it was observed in the range of 440-688 n/10cm^2 and 535-1013 n/10cm^2 during 2006 and 2007 respectively. The nematode/Copepod-ratio (N/C-ratio) varied between 6:1 (station 1) and 2:1 (station 2). The wide range of N/C ratio was observed at station 1 (Adayar), probably due to pollution.

Fig. 1a. Mean percentage composition of meiofauna communities at Adayar and Besant Nagar 2006.

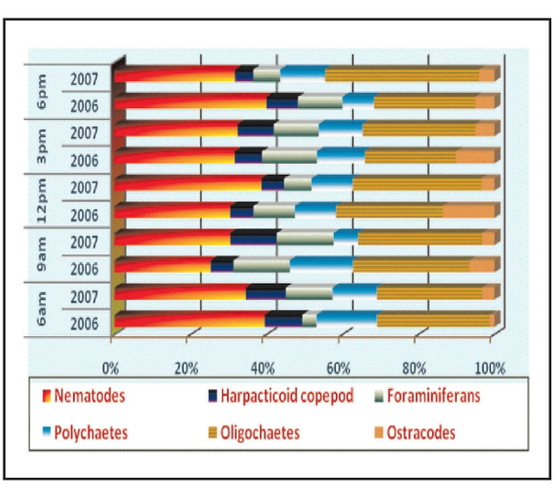
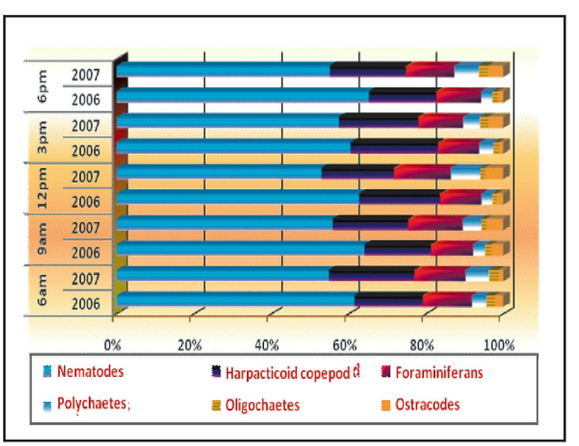


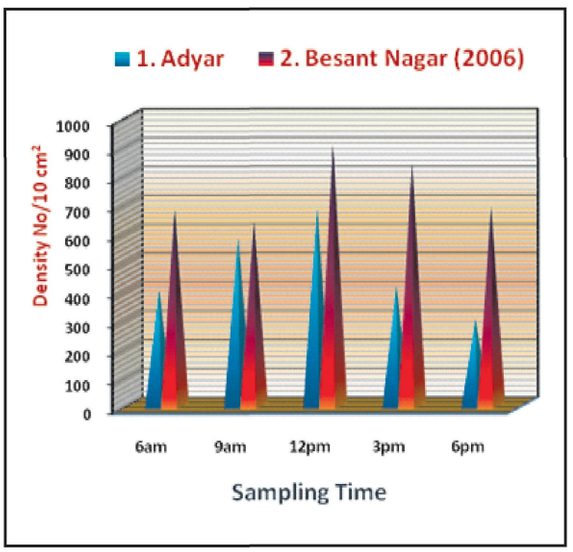
Fig. 1b. Mean percentage composition of meiofauna communities at Adayar and Besant Nagar 2007.

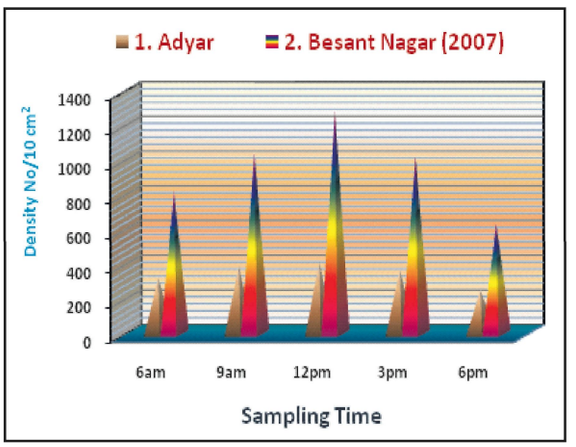


With respect to variation during sunlight period, meiofauna was at its peak during midday (12 noon), probably due to availability of food (Fig. 2). Midday peaks in meiofauna generally indicate consumption of microalgae, but the diel response varies among taxa and demographic groups. Co-variation of environmental factors may complicate interpretation of feeding patterns during sunlight periods.

The abundance of meiofaunal groups is known to be controlled by physical factors like temperature, grain size, salinity, wave action, beach slope, tidal action and capillary water and its action as well.

Fig. 2. Mean total density of meiofauna at Adayar and Besant Nagar during 2006 and 2007.





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