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Spatial distribution of meiobenthic community in Tha Len seagrass bed, Krabi Province, Thailand

Yaowaluk MONTHUM* and Chittima ARYUTHAKA

Department of Marine Science, Faculty of Fisheries, Kasetsart University, Bangkhen, Bangkok, 10900, Thailand
**E-mail: ymonthum@yahoo.com*

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Abstract—In the mixed species of seagrass bed, the meiobenthic community was studied in the Tha Len Bay, Krabi Province, Thailand. The bed in the shallow water mainly consisted of three species of seagrasses, namely *Halophila ovalis*, *Thalassia hemprichii* and *Halodule uninervis*. From four monospecific patches of each seagrass species and adjacent barren area, sediment samples were sampled randomly for collecting meiofauna and measuring environmental factors. Free-living nematodes were the most dominant group in terms of abundance and that accounted for 75–85% of the total meiobenthos. From nematodes samples, 329 putative species, belonging to 125 genera and 25 families, were found. The average density was highest (714 ind./10 cm^2) in *H. ovalis* and lowest (332 ind./10 cm^2) in the barren area. Regarding the result of multidimensional scaling analysis, there were differences in nematode communities among area covered by different seagrass species. The nematode communities in the smallest seagrass species (*H. ovalis*) and barren area were similar that *Metalinhomoeus* sp. 1 and *Gomphionema* sp. were dominant. On the other hand, *Paralongicyatholaimus* sp. 2, *Perspiria* sp. 1, and *Desmodora* sp. 3 were dominant species in *H. uninervis* area, and *Paralongicyatholaimus* sp. 2 and *Praeacanthonchus* sp. 1 in *T. hemprichii* area. The study implies that the difference in complexity of seagrass root and leaf morphology among seagrasses species causes the differences in nematode communities.

Key words: free-living marine nematode, seagrass, meiobenthos

Introduction

In coastal habitats, seagrass can be usually found in the temperate and tropical zones (den Hartog 1970). It is considered as an important component of the coastal ecosystem due to its high productivity (Duarte and Chiscano 1999). It is not only the habitat of marine animals including macrobenthos and meiobenthos, but also plays an important role of protecting those animals from their predators (Coull and Wells 1983, Lewis 1984, Orth et al. 1984, Bird and Jenkins 1999). The key factors that characterize the coastal seagrass habitat are morphology of seagrass (Connolly and Butler 1996), species composition (Young 1981, Stoner 1983), habitat complexity (Lewis 1984), biomass (Stoner 1980, Lewis 1984) and food abundance (Edgar 1999).

Many studies focused on the role of seagrass as a shelter from the predators of macrobenthos (Lewis 1984, Orth et al. 1984). On the other hand, investigations about seagrass bed as the habitat of meiobenthos are few, though some works have been done regarding the seasonal change (Novak 1982), the role of seagrass as a shelter for meiobenthos from fish (Sogard 1982), food source (Danovaro 1996) and structural factors of seagrass bed (De Troch 2001), especially the qualification of different sediment types (Decho et al. 1985, Ansari and Parulekar 1994).

Free-living marine nematodes are one the most dominant taxonomic group in meiobenthic communities. They are found in seagrass bed (Aryuthaka 1985, Decho et al. 1985, Ansari and Parulekar 1994, Monthum 2003) and other kinds of habitats (Ansari and Parulekar 1993, 1998, Olafsson 1995). They are also closely linked to sediment structure, chemistry, disturbance and food supply such as bacteria and diatom (Giere 1993)

Seagrass morphology, species composition, habitat complexity, biomass and food abundance play important roles to the structure of seagrass bed. Consequently, free-living marine nematode community, which lives within the seagrass bed is seemingly reflection of these factors. The aim of this study is to examine the community structure of free-living marine nematodes living in different habitat types of seagrass bed.

Materials and Methods

Study area

The sampling of this study was carried out in Tha Len Bay, Krabi Province (8°15′N, 98°44′E) in the Andaman Sea coast of Thailand (Fig. 1) in June 2002. The shore consists of

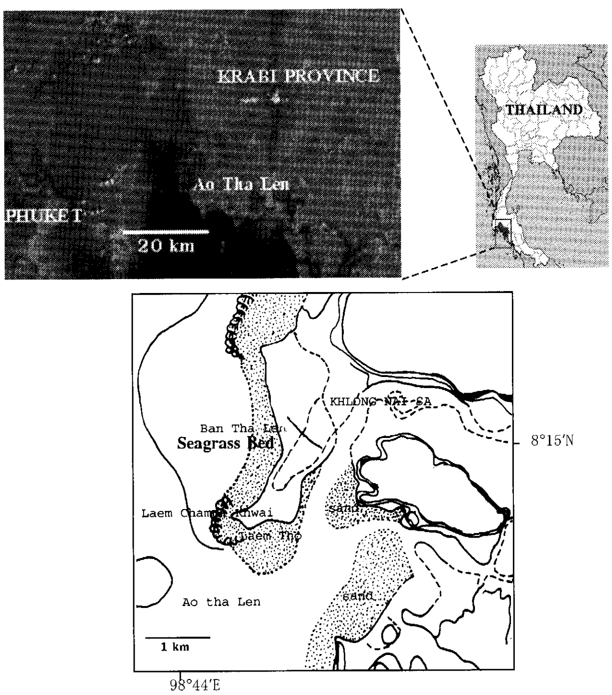

Fig. 1. Map showing the location of the study area.

large expanses of tidal flats extending approximately 1 km seawards, and stretching some 9 km along the coast. The sediment consisted of fine sand and contained many active and large bioturbators, particularly crustaceans and echinoderms. All over the tidal flat, patches of seagrasses ranging from 1 to 5 m in diameter occurred. At the shallow water, three seagrass species namely *Halophila ovalis*, *Thalassia hemprichii* and *Halodule uninervis* were predominated.

Field studies

Sediment samples were collected from four different habitats i.e. monospecific patches of *Halophila ovalis*, *Thalassia hemprichii* and *Halodule uninervis* and adjacent barren area to collect meiobenthos and to measure benthic environmental factors. Four patches were selected for the above four habitats, and within each patch, four cores of 3 cm in diameter and 10 cm in depth were collected. An additional core was collected at each patch for sediment analysis. At each sampling point, water temperature, salinity, and dissolved oxygen concentration were measured using a YSI-85 multiparameter device at high tide time. The sediment core samples to study meiobenthos were fixed immediately using 10% formalin solution.

Laboratory procedures

Meiobenthos were extracted from the sediment using the protocol of Somerfield and Warwick (1996). The preserved sediment sample was washed through sieves of 500 μm and 63 μm opening. To remove the remaining fine sand from the residue on the 63 μm sieve, flotation technique in silica colloidal (Ludox^{TM}) that was adjusted to have a specific gravity of 1.15 was used. The residue on a 63 μm sieve was moved into the mixture of 4% ethanol and 35% glycerine. Ethanol was allowed to evaporate to be a anhydrous glycerol. Samples were spread on a microscope slide (76×52 mm) inside the ring made of paraffin wax and covered using a coverslip, and examined and counted under a compound microscope referring Higgins and Thiel (1988). Nematodes were identified following the pictorial keys of Platt and Warwick (1983, 1988) and Warwick et al. (1998).

For the analyses of sediment, 30 g of oven-dried sediment from each sampling point was sieved using a series of 2 mm, 1 mm, 500 μm, 250 μm, 125 μm and 63 μm mesh opening to give a Wenworth grade classification of particle size (Buchanan 1984). Sediment on each sampling point was dried at 105°C for 24 hours and then weighed. To measure the organic content in sediment, the method of Walkley and Black (1934) was used. One gram of dried sediment was digested with a chromic acid-sulphuric acid mixture and the excess of chromic acid not reduced by the organic matter was titrated with a standard ferrous salt ($FeSO_4$). The organic carbon content in the sediment was expressed as the relative percentage.

Statistics

Biological data were analyzed using univariate and multivariate methods. Abundance and species density were estimated as number of individuals (N) and number of species per unit area (10 cm^2). Species richness was determined as the total number of species (S). Diversity was estimated by the Shannon-Wiener index (H') and evenness (J) according to Pielou's evenness index. The benthic assemblages were analyzed using the PRIMER (Plymouth Routines in Multivariate Ecological Research) software package developed at the Plymouth Marine Laboratory, UK. Multivariate analyses were carried out on square root-transformed data using the Bray-Curtis index and group average linkage for cluster analysis and non-metric multidimensional scaling (MDS). The discrimination of meiobenthic communities in each seagrass species was tested with one-way ANOSIM, and species typifying assemblages were identified using the SIMPER program (Clarke and Warwick 2001)

Results

Meiobenthic communities

Twelve meiobenthic taxa were found in the present study, and most inidividuals belonged to two dominant groups: free-living marine nematodes and copepods. Free-living marine nematodes were the most dominant group and it accounted for from 75 to 85% of the total. Copepods, the second dominant group constituted 11 to 17%. Remaining groups, ranging from 4 to 5% of the total, were polychaetes,

Table 1. Mean percentage of the ten most dominant species for each stand of seagrass species. %=% of the species, Acc.%=accumulated%.

H. ovalis	%	Acc.%	*T. hemprichii*	%	Acc.%
Metalinhomoeus sp.1	18.70	18.70	*Paralongicyatholaimus* sp.2	13.00	13.00
Gomphionema	8.42	27.12	*Perspiria* sp.1	9.22	22.23
Perspiria sp.2	7.62	34.75	*Perspiria* sp.2	8.30	30.53
Praeacanthonchus	5.87	40.62	*Desmodora* sp.3	5.31	35.85
Paralongicyatholaimus sp.1	5.41	46.03	*Metalinhomoeus* sp.1	3.98	39.83
Daptonema sp.1	4.14	50.18	*Daptonema* sp.1	3.34	43.17
Daptonema sp.2	3.50	53.69	*Microlaimus* sp.2	3.29	46.46
Microlaimus sp.1	3.34	57.03	*Paralongicyatholaimus* sp.1	3.11	49.58
Paracanthonchus sp.3	2.62	59.66	*Paracanthonchus* sp.1	2.89	52.48
Metalinhomoeus sp.2	2.58	62.24	*Paracanthonchus* sp.2	2.38	54.86
Dorylaimopsis	2.06	64.31	*Spirinia*	2.11	56.98
Neotonchus	2.05	66.37			
H. uninervis	%	Acc.%	Barren	%	Acc.%
Perspiria sp.2	9.28	9.28	*Metalinhomoeus* sp.1	13.28	13.28
Paralongicyatholaimus sp.2	9.24	18.52	*Perspiria* sp.2	9.98	23.27
Metalinhomoeus sp.1	8.56	27.09	*Paralongicyatholaimus* sp.2	4.90	28.17
Praeacanthonchus	5.93	33.02	*Gomphionema*	4.76	32.94
Paralongicyatholaimus sp.1	5.66	38.68	*Paralongicyatholaimus* sp.1	4.68	37.62
Desmodora sp.6	4.59	43.28	*Praeacanthonchus*	4.60	42.23
Paracanthonchus sp.1	2.61	45.89	*Tricoma*	3.11	45.35
Daptonema sp.1	2.53	48.42	*Dorylaimopsis*	2.34	47.69
Metalinhomoeus sp.2	2.29	50.72	*Paracanthonchus* sp.1	2.13	49.82
Paracanthonchus sp.3	2.25	52.97	*Ptycholaimellus* sp.1	2.13	51.95
Dorylaimopsis	2.03	55.01			

oligochaetes, ostracods, cumaceans, kinorhynchs, halacarids, amphipods, nauplii, isopods and turbellarians. The densities of meiobenthos were 488±48 to 1256±323 ind. 10 cm^{-2}.

Free-living marine nematode communities

A total of 329 putative species, which belong to 125 genera and 25 families, were found. Approximately 45% of these species were found once only. At a species level, ten species contributed more than 50% of all sampled nematodes at each stand of seagrass species (Table 1). The *Metalinhomoeus* sp.1 was the most dominant followed by *Perspiria* sp.2, *Paralongicyatholaimus* sp.2, *Paralongicyatholaimus* sp.1, *Praecanthonchus* sp.1 and *Gomphionema* sp.1. In the stand of *Halophila ovalis* and barren area, *Metalinhomoeus* sp.1 (18.70% and 13.28%, respectively) predominated, whereas in the stand of *Thalassia hemprichii*, *Paralongicyatholaimus* sp.2 accounted for 13% and in the stand of *Halodule uninervis*, *Perspiria* sp.2 and *Paralongicyatholaimus* sp.2 occupied 9.28% and 9.24%, respectively. The stand of *H. ovalis* had 212 species, and the highest in species diversity. In the stands of *T. hemprichii* and *H. uninervis*, 187 and 168 species were found, respectively. The diversity of the species was the lowest in the barren area, and only 113 species inhabited (Table 2), suggesting the decreasing tendency in the mean number of species from vegetated to barren areas (Fig. 3).

Spatial variability

Free-living marine nematode densities within each sampling point ranged from 68 to 1352 individuals 10 cm^{-2}. When analyzed using ANOVA, there were significant differences among the different stands of seagrass species (F=3.69, p<0.05) (Table 3). The densities were the highest in the stand of *H. ovalis* followed by *T. hemprichii*, *H. uninervis* and the lowest in the barren area (Fig. 2). Average densities were 714±224, 497±63, 447±184, and 332±148 individuals 10 cm^{-2} respectively (Table 2). The one-way ANOVA did not reveal significant differences among the species of seagrass for the diversity but evenness (F=3.65, p<0.05) (Table 3, Figs. 4 and 5).

Analysis of community patterns

The free-living marine nematodes were constantly distributed over the patches. The cluster analysis clearly distinguished one replicate of *H. uninervis* from three other replicates. Four replicates of barren patches were separated by the cluster analysis as well. From the remaining groups, four replicates of *T. hemprichii* formed one cluster from three replicates of *H. uninervis* and four replicates of *H. ovalis* (Fig. 6). Ordination of biotic data by MDS showed that the

Table 2. Means of the ecological and environmental parameters in different seagrass species (HO=*H. ovalis*, TH=*T. hemprichii*, HU=*H. uninervis* and BA=Barren area).

	HO (n=4)	TH (n=4)	HU (n=4)	BA (n=4)
Ecological Variables				
Total number of species	212	187	168	113
Mean number of species	110±11	103±9	101±13	91±6
Abundance (ind.10 cm^{-2})	714±224	497±63	447±184	332±148
Diversity	3.39±0.11	3.52±0.31	3.65±0.16	3.71±0.15
Evenness	0.72±0.03	0.76±0.06	0.79±0.03	0.82±0.05
Environmental Variables				
Temperature (°C)	33.0–33.1	32.2–34.1	33.8–34.6	33.5–34.6
Salinity (ppt)	31.6–31.8	31.5–32.3	31.6–32.7	31.5–32.0
Dissolved oxygen (ml/L)	7.76–8.53	7.65–10.62	8.22–10.62	7.72–9.45
Sand (%)	93.68±1.95	92.98±3.01	94.34±2.12	93.63±2.85
Silt and Clay (%)	6.32±1.95	7.02±3.01	5.66±2.12	6.37±2.85
Sediment organic matter (%)	0.46±0.08	0.40±0.08	0.34±0.08	0.34±0.08
Characteristic species/within group Bray-Curtis similarity*				
Metalinhomoeus sp.1	377.50 (23.87)	108.25 (4.92)		124.75 (13.23)
Praeacanthonchus sp.1	118.50 (7.04)	75 (5.28)		43.25 (4.39)
Paralongicyatholaimus sp.1	109.25 (5.66)			44 (4.65)
Gomphionema	170 (5.42)			44.72 (5.51)
Paracanthonchus sp.3	53 (3.66)			
Paralongicyatholaimus sp.2		116.75 (11.04)	182.75 (15.93)	
Paracanthonchus sp.3		28.50 (3.63)		
Perspiria sp.1			129.75 (13.72)	
Desmodora sp.3			74.75 (6.41)	
Daptonema sp.1			47 (3.91)	
Between group Bray-Curtis dissimilarity				
Metalinhomoeus sp.1		(16.12)	(6.85)	(7.52)
Gomphionema		(8.24)		
Paralongicyatholaimus sp.2		(5.23)	(7.25)	(11.04)
Praeacanthonchus sp.1		(4.66)	(4.02)	
Perspiria sp.1			(8.83)	(9.65)
Desmodora sp.3			(4.68)	(5.60)

*Characteristic species as indicated by SIMPER, calculated using square-root transformed abundances and value are average abundances of nematode species within seagrass species and percentage contributions (in parentheses).

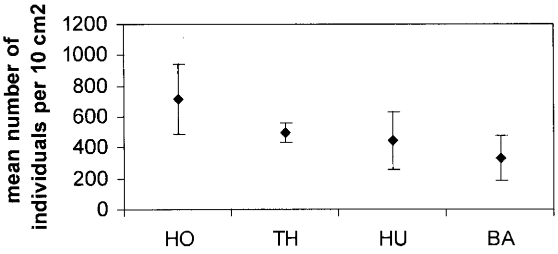

Fig. 2. Mean number of individuals of free-living marine nematodes in different of seagrasses.

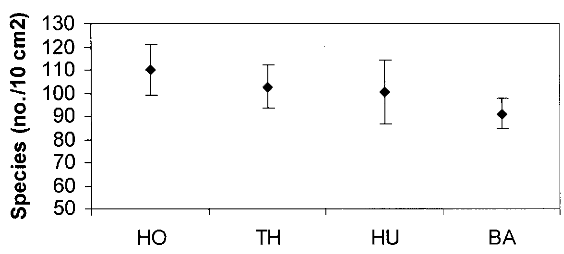

Fig. 3. Total number of species of free-living marine nematodes in different seagrass species.

difference in morphology of seagrasses reflected the difference in the nematode community structure (Fig. 7A) and superimposed by the percentage of silt and clay on biotic data as relating physical factors (Fig. 7B). There were the highest percentage of silt and clay (11.07%) on the top of the graph found from one of the replicate of *H. uninervis*. Therefore, results of the MDS ordination and cluster analyses suggested that there were four group of marine nematodes assemblages, and the ANOSIM test confirmed the similarity within the four clusters (ANOSIM results: r=0.835, p=

Table 3. Result from one-way ANOVA of differences in univariate measures between seagrass species. A=total abundance and S=number of species.

Univariate measure	*F*	*P*
Log A	3.698	0.042
Log S	2.288	0.130
Shannon-Wiener *H'* (Species diversity)	1.943	0.176
Pielou's *J* (Evenness)	3.561	0.047

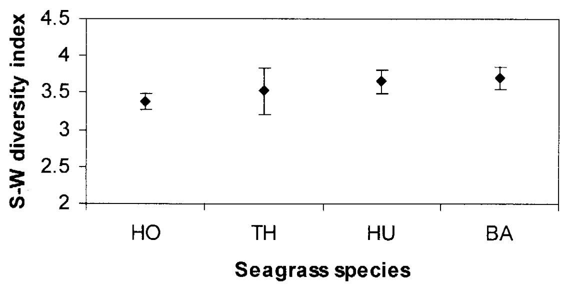

Fig. 4. Species diversity of free-living marine nematodes in different seagrass species.

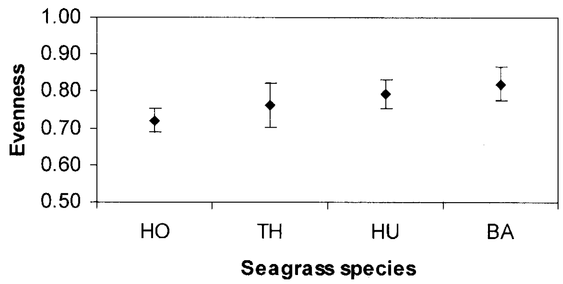

Fig. 5. Evenness of free-living marine nematodes in different seagrass species.

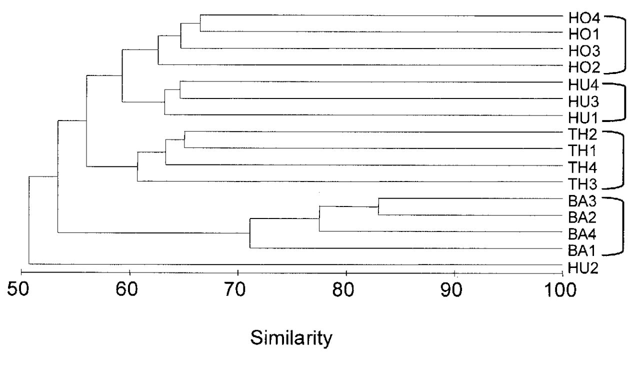

Fig. 6. Cluster analysis dendrogram of Bray-Curtis similarity for the free-living marine nematodes in different patch of seagrasses and barren area (HO=*H. ovalis*, TH=*T. hemprichii*, HU=*H. uninervis* and BA=Barren area).

0.001).

Comparisons of characteristics among seagrass species

Different species of free-living marine nematodes were contributed to average similarity within group and dissimilarity between group in the SIMPER analyses. Marine nematodes in the stand of *H. ovalis* and barren area were similar within their characteristics. The percentage contributions of the same species in the stand of *H. ovalis* and barren area were as follows respectively: *Metalinhomoeus* sp.1, 23.87% and 13.23%; *Praeacanthonchus* sp.1, 7.04% and 4.39%; *Paralongicyatholaimus* sp.1 5.66% and 4.65% and *Gomphionema* 5.42% and 5.51%.

On the other hand, nematodes in the stand of *T. hemprichii* and *H. uninervis* were similar from the point of view that the same species namely *Paralongicyatholaimus*

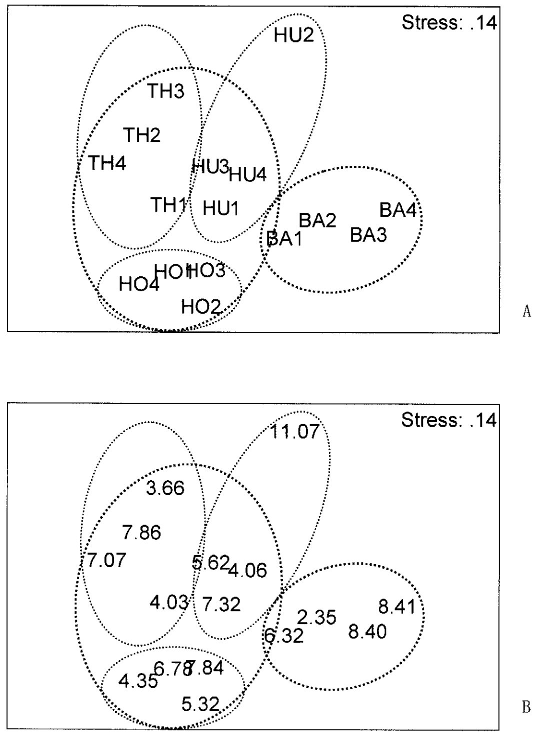

Fig. 7. Ordination by MDS of Bray-Curtis similarities between samples, calculated using square-root transformed abundances of nematodes(A) and superimpose percentage of silt and clay on biotic data (B) (HO=*H. ovalis*, TH=*T. hemprichii*, HU=*H. uninervis* BA=Barren area).

Table 4. Results of 1-way ANOSIM test for differences between groups, based on Bray-Curtis intersamples similarities calculated using square-root transformed abundances of nematodes.

	r	*P*
Global test: Seagrass species	0.835	0.001
Pairwise tests		
H. ovalis and barren area	1	0.029
T. hemprichii and barren area	0.99	0.029
H. ovalis and *T. hemprichii*	0.938	0.029
H. uninervis and barren area	0.719	0.029
H. ovalis and *H. uninervis*	0.677	0.029
T. hemprichii and *H. uninervis*	0.635	0.029

sp.2 was the most dominant and it accounted for similar percentages (11.04% and 15.93%). In the area of the former seagrass species, *Praeacanthonchus* sp.1 (5.25%), *Metalinhomoeus* sp.1 (4.92%) and *Paracanthonchus* sp.3 (3.63%) were subdominant, whereas in the stand of the latter seagrass species *Perspiria* sp.1 (13.72%), *Desmodora* sp.3 (6.41%) and *Daptonema* sp.1 (3.91%) were conspicuous. *Metalinhomoeus* sp.1 contributed more than 10% of dissimilarity among the two areas, suggesting that the species was likely to be a good discriminator between the stands of two seagrass species. The presence of *Perspiria* sp.1 in the community of *T. hemprichii* contributed 8.83% for discriminating *T. hemprichii* from *H. uninervis*, and *Paralongicyatholaimus* sp.2 played an important role to distinguish *H. uninervis* stand from barren area (Table 2).

Environmental characteristics

Overall, variation in water temperature, salinity, and dissolved oxygen was small among sampling points during the sampling period. The water temperature ranged from 32.2°C to 34.6°C and salinity varied from 31.5 to 32.7. The dissolved oxygen content was between 7.65 and 10.62 ml/l (Table 2).

Percentage of organic matter was highest in the stand of *H. ovalis* (0.38 to 0.54), followed by *T. hemprichii* (0.32 to 0.48). The figures were similarly low at *H. uninervis* and barren area ranging from 0.26 to 0.42 (Fig. 8). Silty sand predominated in the sediments of both vegetated and barren areas, and it accounted for 93.0% to 94.3% (Fig. 9).

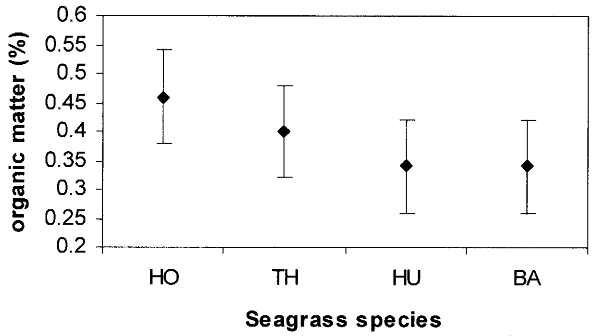

Fig. 8. Percentage of organic matter in different seagrass species.

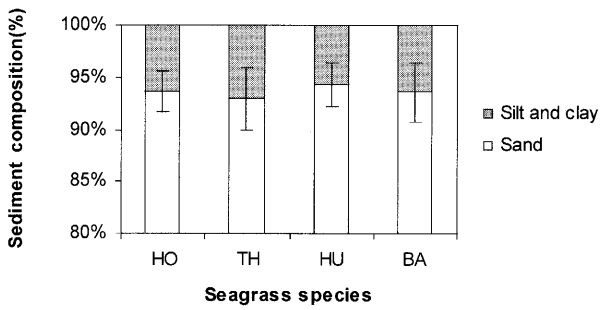

Fig. 9. Sediment composition in different seagrass species.

Discussion

Meiobenthic communities

In the Tha Len Bay seagrass bed, Krabi Province, free-living marine nematodes were found to occupied as high as 78% of the total individuals, followed by harpacticoid copepods. The finding is relevant to the previous studies (Aryuthaka 1985, Olafsson 1995, Schizas and Shirley 1996). The present result showed that while the highest average density in meiobenthic communities belongs to *H. ovalis*, followed by *T. hemprichii*, *H. uninervis* and barren area, the highest average species diversity was found in the barren area, followed by *H. ovalis*, *T. hemprichii* and *H. uninervis* stands. The average density and the average diversity found in the present research seemed contradictory. The average diversity tends to increase from the vegetated area to the unvegetated area with the value ranging from 3.39 to 3.71. With this range, it was not significant difference among different types of habitat. However, when the average density and the average number of species, were compared, they seemed well corresponding, suggested that the density of meiobenthos in the vegetated area was higher than the value in the unvegetated area (Ansari and Parulekar 1994, Aryuthaka 1991, Ndaro and Olafsson 1999). Heck and Thomas (1984) stated that meiobenthic communities, especially in seagrass bed, always shows their high density and diversity levels as a result of structural complexity and heterogeneity of the habitats.

Free-living marine nematode assemblages

The present study clearly showed that free-living marine nematodes are the most dominant and diverse taxonomic group in this area, as shown by Somerfield et al. (2002). The density of free-living marine nematodes (68 to 1352 individuals. 10 cm^{-2}) also was similar to the previous studies in the area of *Thalassia testudinum* (Decho et al. 1985), and *Thalassia hemprichii*, *Cymodocea* sp. and *Halodule* sp. (Ansari and Parulekar 1994). However, when compared with the study in the stand of *Zostera marina* (Aryuthaka 1985) and in the tropical seagrass meadows (Fisher 2003, Fisher and Sheaves 2003), the density of the present study was lower.

A significant effect of seagrass species on free-living marine nematodes densities and community structure was found. The most dominant nematode are also given a choice of seagrasses with difference of habitat structure in the form, probably caused by the increased habitat complexity provided by high seagrass biomass (Paula et al. 2001) and it is supposed to be more important factor than the factor that increased surface area of habitat (Jenkins and Hamer 2002). The case study conducted by Poovachiranon and Chansang (1994) showed that *H. ovalis* has more biomass in the above ground than the below ground. However, *H. ovalis* in Tha Len Bay seagrass bed shows that the average shoot number of the above ground was tremendously high. The high shoot number of the above ground, consequently, brings the above ground biomass to the high level accordingly. The free-living marine nematode assemblages were affected by this result too. The structure of *H. uninervis* has less above ground biomass than the below ground, while *T. hemprichii* has similar biomass of the above ground and below ground. However, if we consider the overall biomass (leaf, root and rhizome), we will see that *T. hemprichii* is higher than *H. uninervis* in the above ground biomass and barren area is the lowest. There are several factors that may play roles on this result (Decho and Fleeger 1988). Canopy size of seagrass is one of the significant factors to affect its characteristics. As the canopy size increases, the protective ability against the predators increases (Balestri et al. 1998). With only a few rhizomes, seagrass species of the bigger size can occupy more ground space than the smaller seagrass species. However, the density of smaller seagrass rhizomes is higher than the ones with the bigger size (Hemminga and Duarte 2000).

The nematode communities in the smallest seagrass species and barren area were similarly preoccupied by *Metalinhomoeus* sp., which is the same genus as the one found in seagrass bed in other tropical area (Fisher and Sheaves 2003). The MDS method of biotic data and the ANOSIM testing result showed that there were similar community structures among the stands of *T. hemprichii* and *H. uninervis*. However, they were totally different from those of *H. ovalis* and barren area. Characteristics of seagrass beds signify the types of the animals, which look for food and habitat in those seagrass beds. Structure of seagrass bed also offers a three dimensional habitat, which allows the animals to hide theirselves away from their larger predators at its roots, rhizomes and leaves (Kenyon et al. 1995, Hemminga and Duarte 2000, Hindell et al. 2000). Physical and chemical characteristics unique to the stand of each seagrass species may attract different type of animals (Hemminga and Duarte 2000).

The amount of organic matter (Fig. 8) corresponds to the density of free-living marine nematodes. Hemminga and Duarte (2000) reported that organic matter is produced by the seagrass itself and other primary producers. Above ground plant tissues are partly decomposed in the water, and leaf litter are also decomposed on the top of the sediment. That is also similar to the below ground including dead roots, rhizomes and microalgae may be utilized by organisms living in the meadows. Nematodes are capable to completely mineralize organic molecules in the sediment. Communities of nematodes and their diversity seem largely determined by sediment structure and often corresponds to food supply (organic content) (Giere 1993). However, the seagrass sediments of the current studies are characterized by low variability due to the fact that it is a homogenous characteristic across all intertidal areas in the seagrass bed, corresponds to the previous studies (Fisher 2003, Hong and Yoon 2004). Sediments in the vegetated and unvegetated area were similarly dominated by silty sand which is a basically the characteristic of general seagrass sediment (Decho et al. 1985, Ansari and Parulekar 1994).

In conclusion, since nematodes are the most dominant component in meiobenthic communities, it can be considered as a discriminator of habitat type. Free-living marine nematode communities, living in seagrass bed, is structured by its habitat complexity, which is created by leaf morphology and related biomass of the seagrass species.

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