

Table 2: Summary of phytoplankton Species Diversity Index and Species Evenness Index at every sampling station inside and outside the Lagoon of Pulau Layang Layang

Sampling station	Number of taxa	Species Diversity Index (H)	Species Evenness Index (J)
1. Inside lagoon			
ST1 Inside lagoon	49	3.41	0.61
ST2 Inside lagoon	37	2.97	0.57
ST3 Inside lagoon	33	4.11	0.82
ST4 Inside lagoon	37	2.83	0.54
ST5 Inside lagoon	37	2.24	0.43
MEAN		3.11	0.59
2. Open sea (upper zone-above the P.Layang2)			
ST13 Outside lagoon	51	1.97	0.35
ST14 Outside lagoon	54	3.15	0.55
ST15 Outside lagoon	46	1.72	0.31
ST16 Outside lagoon	34	1.80	0.35
ST17 Outside lagoon	27	1.48	0.31
ST18 Outside lagoon	37	2.17	0.41
ST19 Outside lagoon	34	1.98	0.39
MEAN		2.04	0.38
3. Open sea (lower zone-below the P. Layang2)			
ST1 Outside lagoon	37	1.63	0.31
ST2 Outside lagoon	30	1.93	0.39
ST3 Outside lagoon	34	2.01	0.39
ST4 Outside lagoon	38	2.11	0.40
ST5 Outside lagoon	34	1.92	0.39
ST6 Outside lagoon	36	2.41	0.46
ST7 Outside lagoon	41	2.07	0.39
ST8 Outside lagoon	38	1.81	0.35
ST9 Outside lagoon	43	1.83	0.34
ST10 Outside lagoon	61	1.97	0.33
ST11 Outside lagoon	43	3.01	0.55
MEAN		2.06	0.39

taxa in the open ocean were partly affected by the strong currents. The patchy distribution of the phytoplankton in the ocean is a common phenomenon at certain periods of time.

There is an indication from the regression results that phytoplankton abundance increased with increasing nutrients especially phosphate and silicate.

Chlorophyll a

Chlorophyll *a* is very low in content, homogeneous in distribution and ranged from 0.034 ± 0.008 - 0.0743 ± 0.016 $\mu\text{g/l}$. No significant difference was observed between stations and water depth of the chlorophyll *a* samples in the shallow oligotrophic lagoon and deep open sea. The results of chlorophyll *a* and the nutrient analyses are summarized in the following table.

The average value of chlorophyll *a* ranged from 0.0134 to 0.0743 mg/m^3 . There was no significant difference ($P > 0.05$) in concentration among all the stations sampled and also among the three layers of chlorophyll *a* density. There was no overall station number effect (all stations sampled), no pooled stations effect (three categories as in the table above) and no layer effect (surface, middle and bottom) on the concentration of chlorophyll *a*.