

Table S1. Abiotic descriptors of water quality in beakers during the experiment trial. During all the experiment and in all replicates of the three types of post larvae feeds, the NO₂ values remained under the threshold. Similarly, PO₄ concentrations were constantly ranging between low values. NO₃ concentrations varied considerably in all the replicates, reaching its maximum at the 30th day. NH₄ values varied all along the experiment within all the post larvae replicates corresponding to the different types of feeds given. However, the highest rate of NH₄ concentration was recorded in the replicate containing post larvae feeding on diet 6 (2.5 mg/L). pH values and temperature follow the normal fluctuations happening in the marine environment. According to these two descriptors (pH and temperature) a decrease in the dissolved oxygen concentration was observed along the experimental time in all the different tanks (Nd = Not detectable).

Control Diet	Time (Days)	NO ₂ (mg/L)	PO ₄ (mg/L)	NH ₄ (mg/L)	pH	Salinity (ppt)	O ₂ (mg/L)	T (C°)	NO ₃ (mg/L)
	0	Nd	-	-	-	38	5.18	18	-
	5	Nd	Nd	0.35	8.045	39	5.245	19.05	-
	7	Nd	0.11	Nd	7.86	40	5.17	17.75	-
	9	Nd	-	-	8.17	38	4.99	16.9	5.56
	12	-	-	-	7.975	40	4.71	17	-
	14	-	0.2	0.95	7.92	40	4.4	17.1	-
	20	Nd	Nd	0.6	8.06	37.5	4.47	20.8	-
	26	-	Nd	Nd	8.025	20	4.175	18.95	5.46
	30	Nd	Nd	0.205	8.005	37.5	4.07	21.55	5.75
	40	Nd	0.025	0.45	8.015	40.5	-	22.95	-
	57	Nd	-	-	7.94	-	4	21.95	5.76
	67	Nd	0.035	0.8	7.9	40	0	20.45	-
	76	Nd	0.07	1.55	-	40	3.83	21	0.5
	82	Nd	-	0.85	7.815	41	-	21.65	0.5
Diet A	Time (Days)	NO ₂ (mg/L)	PO ₄ (mg/L)	NH ₄ (mg/L)	pH	Salinity (ppt)	O ₂ (mg/L)	T (C°)	NO ₃ (mg/L)
	0	Nd	-	-	-	38	-	18	-
	5	Nd	0.07	0.35	8.02	37.5	5.25	19.25	-
	7	Nd	0.33	1.7	7.875	37.5	5.04	18.75	-
	9	-	-	-	8.115	38.5	5.02	16.45	5.91
	12	-	-	-	7.925	39.5	5.15	16.05	-
	14	Nd	0.185	0.06	7.94	38	4.99	17.6	-
	20	-	Nd	1.05	8.02	38	4.41	20.5	-
	26	Nd	Nd	Nd	7.93	20	4.42	18.69	5.21
	30	Nd	Nd	0.5	7.97	38	4.12	21.9	6.65
	40	Nd	Nd	0.6	7.99	40	4	23.1	-
	57	Nd	-	-	7.955	-	-	21.5	5.65
	67	Nd	0.08	0.35	7.945	39.5	3.925	20.45	5.75
	76	Nd	Nd	2.5	-	40	-	20.65	5.75
	82	Nd	-	0.5	7.82	40.5	3.715	22.35	5.2
Diet B	Time (Days)	NO ₂ (mg/L)	PO ₄ (mg/L)	NH ₄ (mg/L)	pH	Salinity (ppt)	O ₂	T (C°)	NO ₃ (mg/L)

							(mg/L)		
	0	Nd	-	-	-	38		18	-
	5	Nd	Nd	0.3	7.98	18.5	5.01	19.5	-
	7	Nd	0.16	0.8	7.875	38	5.54	17.95	-
	9	-	-	-	8.08	38	5.18	17.15	5.26
	12	-	-	-	7.95	39.5	5.35	16	-
	14	Nd	0.15	0.5	7.945	39.5	5.09	16.75	-
	20	-	Nd	0.51	8.045	37.5	0	20.42	-
	26	Nd	Nd	0.9	-	40	0	18.43	4.55
	30	Nd	Nd	0.065	8.02	38.5	0	21.5	7.5
	40	Nd	Nd	0.5	4	20	0	23	-
	57	Nd	-	-	7.99	-	-	21.5	6.05
	67	Nd	0.05	0.07	7.975	38.5	3.84	20.45	5.5
	76	-	0.03	0.25	-	22	0	21.25	3.5
	82	Nd	-	0.95	7.81	40	3.73	22.3	4

Correlation Matrices for diets during the third feeding experimental trial.

The correlation matrix between the different abiotic variables measured as well as the post larvae number in the replicates of post larvae feeding on control diet illustrate that:

- NO₃ has a positive correlation with both pH and O₂ Concentration as well as a strong correlation (p= 0.98) with the number of post larvae;
- PO₄ has a moderate positive correlation with the salinity, yet very low positive correlation with the post larvae number (P=0.029);
- NH₄ concentrations has a moderate positive correlation with pH, low positive correlation with the temperature and post larvae number and a negligible positive correlation with O₂ (p=0.01);
- pH has a strong positive correlation with NO₃ (p=0.711), and moderate positive correlation with post larvae number (0.53), less strong correlation with NH₄ concentration (p=0.46) and with O₂ (p=0.36);
- O₂ has a high positive correlation with post larvae number (p=0.84) as well as for NO₃ concentration (p=0.76) and a moderate positive correlation with pH (p=0.36);
- Salinity has a positive correlation with pH and temperature.
- Post larvae number has a very strong correlation with both NO₃ (p=0.98) and O₂ (p=0.84), moderate positive correlation with pH values, low positive correlation with NH₄ (p=0.18) and PO₄ (p=0.029).

Table S2. Correlation matrix for abiotic and biotic measures from replicates of Control diet.

	NO₃	PO₄	NH₄	pH	O₂	Salinity	Temperature
NO₃							
PO₄	-0.9990						
NH₄	-0.8999	-0.3046					
pH	0.7118	-0.3959	0.4686				
O₂	0.7647	0.0017	0.0108	0.3649			
Salinity	-0.5199	0.4194	-0.0028	-0.0762	-0.0333		
Temperature	-0.3646	-0.0856	0.1278	-0.1685	-0.8287	0.1070	
Post-larvae number	0.9810	0.0294	0.1826	0.5334	0.8496	-0.1616	-0.5871

Diet A:

The correlation matrix between the different abiotic variables measured as well as the post larvae number in the repost replicates of post larvae feeding on diet A illustrate that:

- NO₂ concentration has a strong positive correlation with NH₄ (p=0.91) and PO₄ (p=0.84), moderate positive correlation with O₂ (p=0.41) and post larvae number (p=0.25);
- NO₃ has a strong positive correlation with pH (p=0.82) and moderate positive correlation with post larvae number (p=0.39), Temperature (p=0.32), O₂ (p=0.31) and salinity (p=0.24);
- PO₄ has a remarkable positive correlation with O₂ (p=0.63) and post larvae number (p=0.44), yet lower positive correlation with both Salinity and NH₄ (p=0.16 and p=0.15 for the latter);
- NH₄ has a positive correlation with pH, salinity, NO₂ and NO₃;
- pH has a positive correlation with Temperature and almost negligible correlation with post larvae number;
- O₂ has a very high positive correlation with post larvae number (p=0.94) and moderate positive correlations with NO₂, NO₃ and PO₄ concentrations;
- Post larvae has a high positive correlation with O₂ concentration (p=0.94), moderate positive correlations with PO₄ (p=0.44), NO₃ (p=0.39) and NO₂ (p=0.25);

Table S3. Correlation matrix for abiotic and biotic measures from replicates of Diet A.

	NO₂	NO₃	PO₄	NH₄	pH	O₂	Salinity	Temperature
PO₄	0.8402	- 0.4337						
NH₄	0.9157	- 0.1807	0.1541					
pH	- 0.1249	0.8242	- 0.4309	0.2243				
O₂	0.4199	0.3163	0.6357	- 0.1525	- 0.2492			
Salinity	0.0562	0.2471	0.1666	0.3583	0.0865	- 0.0898		
Temperature	- 0.2182	0.3275	- 0.4936	- 0.3462	0.2571	- 0.3302	-0.4993	
Post larvae number	0.2596	0.3961	0.4415	- 0.2194	0.0144	0.9477	-0.1627	-0.1929

Diet B

The correlation matrix between the different abiotic variables measured as well as the post larvae number in the post larva replicates of post larvae feeding on diet B illustrate that:

- NO₂ has a high positive correlation with NO₃ concentration, pH (p=0.66) and moderate positive correlation with both temperature and salinity;
- NO₃ has a considerable positive correlation with pH (p=0.69), moderate positive correlation with post larvae number, and less important positive correlation with O₂ (p=0.32) and temperature (p=0.21);
- PO₄ has a high positive correlation with O₂ (p=0.6), yet low positive correlation with NH₄ (p=0.28), Salinity (p=0.27) and post larvae number (p=0.16);
- NH₄ has a positive correlation with O₂ and salinity (p=0.23 for both) and PO₄ (p=0.28);
- pH has a high positive correlation with NO₂ and NO₃ (p=0.66 and p=0.69 for the latter) yet a lower positive correlation with Temperature (p=0.23) and post larvae number (p=0.24);
- O₂ has a very high positive correlation with post larvae number (p=0.82) and a moderate positive correlation with salinity (p=0.44);
- Salinity has a moderate positive correlation with post larvae number (p=0.4);

- Post larvae number has a high positive correlation with O₂ concentration (p=0.82), moderate positive correlation with NO₃ (p=0.48) and salinity (p=0.4), and a low positive correlation with pH (p=0.24) and PO₄ (p=0.16).

Table S4. Correlation matrix for different abiotic and biotic measures from replicates of diet B.

	NO ₂	NO ₃	PO ₄	NH ₄	pH	O ₂	Salinity	Temperature
NO ₃	0.8187							
PO ₄	- 0.3144	- 0.7337						
NH ₄	- 0.5120	- 0.3173	0.2814					
pH	0.6614	0.6999	- 0.3743	-0.2396				
O ₂	- 0.1339	0.3223	0.6006	0.2353	-0.1538			
Salinity	0.1122	- 0.1075	0.2773	0.2311	0.07127	0.4488		
Temperature	0.3852	0.2122	- 0.7218	- 0.19764	0.2334	- 0.8607	-0.5387	
Post larvae number	- 0.0552	0.4858	0.1629	-0.0788	0.2424	0.8286	0.4009	-0.6934

Table S5. D'Agostino & Pearson normality test on number of *P. lividus* post-larvae feeding on Control diet (*U. rigida*), and diet A (*U. rigida*, SHG® microperte, Algamac enrich) and diet B (*U. rigida*, 2% Spirulina SHG®).

D'Agostino & Pearson normality test	Control Diet	Diet A	Diet B
K2	4,632	2,124	2,241
P value	0,0987	0,3458	0,3261
Passed normality test (alpha=0.05)?	Yes	Yes	Yes

Table S6. Average values of biotic data corresponding to the different replicates of post-larvae feeding on Control Diet, Diet A, and Diet B.

Diet Type	Control			Diet A			Diet B		
Time (Days)	Nbr. PL	Movement	Mortality	Nbr. PL	Movement	Mortality	Nbr. PL	Movement	Mortality
0	20	3	0%	20	3	0%	20	3	0%
5	19	2.5	5%	19	3	5%	19	3	5%
7	19	1.5	5%	16.5	1.5	18%	18.5	1.5	8%
9	17	1.5	15%	16.5	1.5	18%	18	1	10%
12	17	2.5	15%	16	2	20%	18	3	10%
14	17	2	15%	16	1.5	20%	18	3	10%
20	16	2	20%	15.5	1.5	23%	18	3	10%
26	15	2.5	25%	13.5	3	33%	18	3	10%
30	15	2.5	25%	11	3	45%	18	3	10%
40	13.5	1.5	33%	10	3	50%	14.5	2.5	28%
57	13.5	1.5	33%	10	2.5	50%	14.5	2.5	28%
67	8	1	60%	7.5	1.5	63%	14	2.5	30%
76	3.5	0	83%	6.5	1	68%	13.5	1.5	33%
82	2.5	0	88%	6	2	70%	11	2	45%

Table S7. D'Agostino & Pearson normality test on post-larvae of *P. lividus* movement scores on Control diet (*U. rigida*), and diet A (*U. rigida*, SHG® microperle, Algamac enrich) and diet B (*U. rigida*, 2% Spirulina SHG®).

D'Agostino & Pearson normality test			
K2	2,913	7,206	4,173
P value	0,2330	0,0272	0,1241
Passed normality test (alpha=0.05)?	Yes	No	Yes