Supplementary Material S1.1

Sample numbers for proteomic analysis and physiological measurements

Sample numbers for measurements requiring invasive sampling, i.e proteomics, symbiont cell counts, host protein quantification and estimation of symbiont cell density, and chl *a* measurements

pH	Symbiotic state	Time point	*n*
pH 7.68	Aposymbiotic	1	**5**
pH 7.68	Aposymbiotic	2	**7**
pH 7.68	Aposymbiotic	3	**7**
pH 7.68	Symbiotic	1	**5**
pH 7.68	Symbiotic	2	**5**
pH 7.68	Symbiotic	3	**7**
pH 7.95	Aposymbiotic	1	**6**
pH 7.95	Aposymbiotic	2	**6**
pH 7.95	Aposymbiotic	3	**7**
pH 7.95	Symbiotic	1	**6**
pH 7.95	Symbiotic	2	**6**
pH 7.95	Symbiotic	3	**5**

Sample numbers for Aiptasia pedal disc size measurements (*n* decreased over time from ~100 to ~40 as samples were taken).

pH	Day	Symbiotic state	*n*
pH 7.68	0	Sym	86
pH 7.68	7	Sym	62
pH 7.68	14	Sym	61
pH 7.68	21	Sym	44
pH 7.68	26	Sym	41
pH 7.95	0	Sym	85
pH 7.95	7	Sym	62
pH 7.95	14	Sym	60
pH 7.95	21	Sym	43
pH 7.95	26	Sym	39
pH 7.68	0	Apo	94
pH 7.68	7	Apo	73
pH 7.68	14	Apo	72
pH 7.68	21	Apo	39
pH 7.68	26	Apo	30
pH 7.95	0	Apo	107
pH 7.95	7	Apo	80
pH 7.95	14	Apo	80
pH 7.95	21	Apo	48
pH 7.95	26	Apo	33

Linear models and statistical tests for physiological measurements

Fitted linear model for changes in estimated cell densities of *Breviolum minutum per* µg of host protein by pH

Linear model formula: Cell density = 49800– 1056 (pH 7.68)

No effect of header tank was detected.

Coefficients	Estimate	Std. Error	t value	*p*-value	Significance
(Intercept)	49800	5071	9.82	$9.96e^{-11}$	***
pH 7.68	1056	7059	-0.15	0.882	
Header tank effect	NA	NA	NA	NA	NA

Significance. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 19640 on 29 degrees of freedom
Multiple R-squared: 0.0007704
Adjusted R-squared: -0.03369
F-statistic: 0.02236 on 1 and 29 df
p-value: 0.882

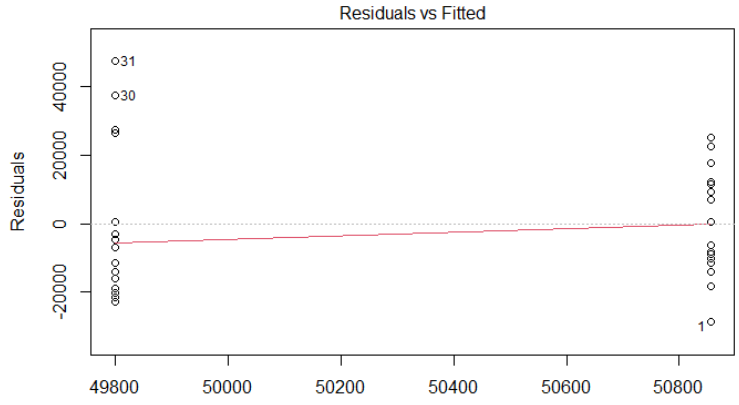
Model ANOVA

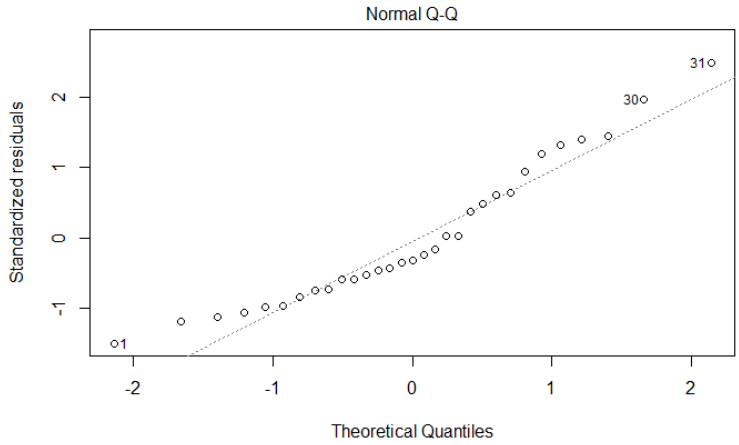
Variation	df	Sum of squares	Mean square	F-value	*p*-value
pH	1	$8.63e^{+06}$	8626363	0.022	0.882
Residuals	29	$1.12e^{+10}$	$3.86e^{+08}$		

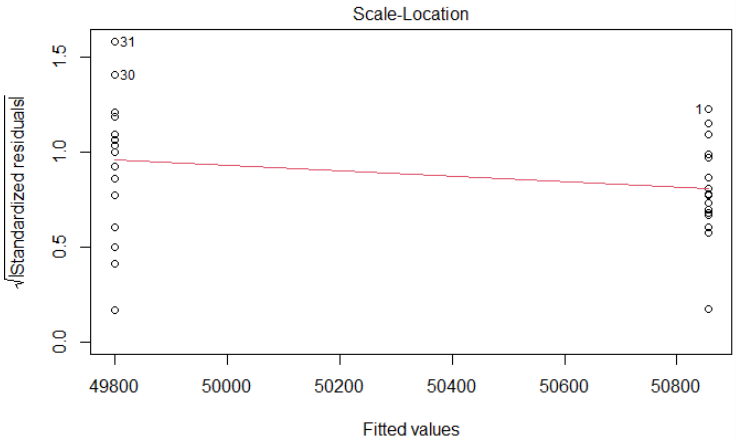
Shapiro-Wilk normality test

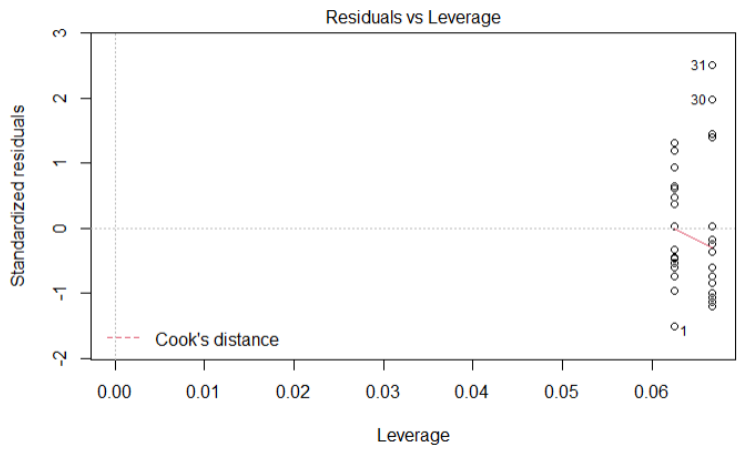
Data	W	*p*-value
Cell densities	0.93556	0.06225

Model plots


Residuals vs Fitted
Residuals
Fitted values
31
30
1
49800
50000
50200
50400
50600
50800
-20000
0
20000
40000


Normal Q-Q
Standardized residuals
Theoretical Quantiles
31
30
1
-2
-1
0
1
2


Scale-Location
√|Standardized residuals|
Fitted values
31
30
1
49800
50000
50200
50400
50600
50800
0.0
0.5
1.0
1.5


Residuals vs Leverage
Standardized residuals
Leverage
Cook's distance
31
30
1
0.00
0.01
0.02
0.03
0.04
0.05
0.06
-2
-1
0
1
2
3

Fitted linear model for changes in estimated cell densities of *Breviolum minutum per* µg of host protein content over time

Linear model formula: Cell density = 34745 + 7928 (time)

No effect of header tank was detected.

Coefficients	Estimate	Std. Error	t value	*p*-value	Significance
(Intercept)	34745	8596	4.042	0.000357	***
Time point	7928	4031	1.967	0.058842	.
Header tank effect	NA	NA	NA	NA	NA

Significance. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 18460 on 29 degrees of freedom
Multiple R-squared: 0.1177
Adjusted R-squared: 0.08726
F-statistic: 3.868 on 1 and 29 df
p-value: 0.05884

Model ANOVA

Variation	df	Sum of squares	Mean square	F-value	*p*-value
Time point	1	$1.318e^{+09}$	$1.318e^{+09}$	3.868	0.0588
Residuals	29	$9.879e^{+09}$	$3.407e^{+08}$		

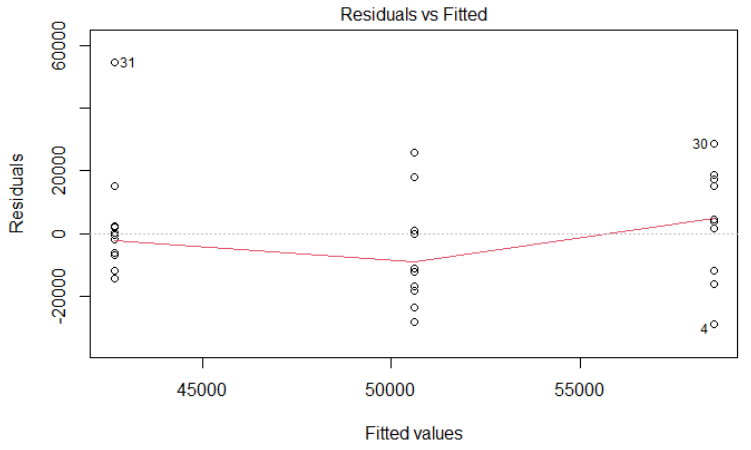
Shapiro-Wilk normality test

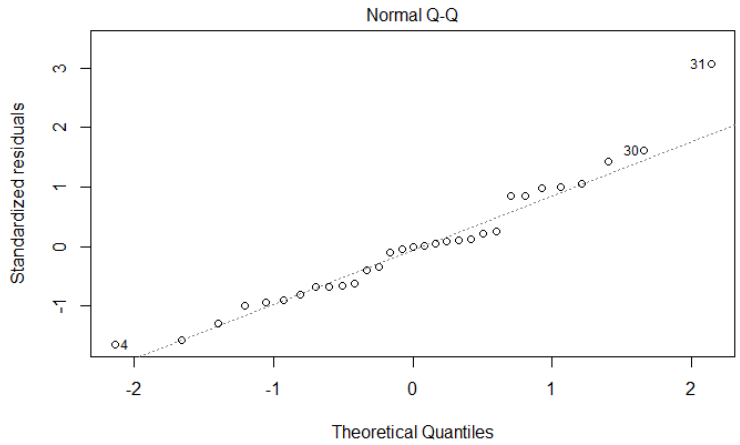
Data	W	*p*-value
Cell densities	0.93556	0.06225

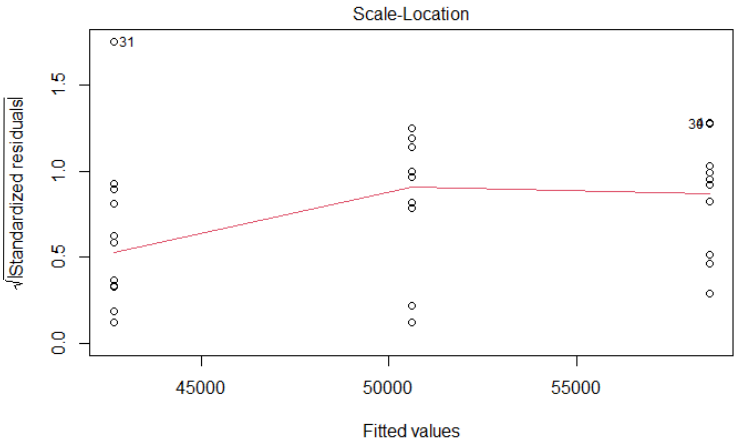
Tukey's HSD test comparing cell densities at timepoints 1, 2 and 3

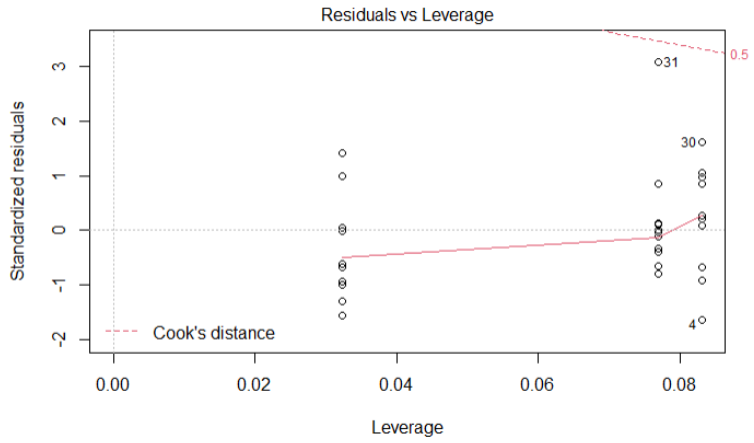
Comparison	Difference	Lower	Upper	*p*-value	Significance
T2 – T1	-1634.02	-21274.1	18006.1	0.976927	
T3 – T1	16153.78	-3486.33	35793.9	0.122425	
T3 – T2	17787.8	-2314.5	37890.1	0.090551	

Model plots


Residuals vs Fitted
Residuals
Fitted values
31
30
4
60000
20000
0
-20000
45000
50000
55000


Normal Q-Q
Standardized residuals
Theoretical Quantiles
31
30
4
3
2
1
0
-1
-2


Scale-Location
√|Standardized residuals|
Fitted values
31
30
1.5
1.0
0.5
0.0
45000
50000
55000


Residuals vs Leverage
Standardized residuals
Leverage
Cook's distance
0.5
31
30
4
3
2
1
0
-1
-2
0.00
0.02
0.04
0.06
0.08

Fitted linear model for host protein content (µg) by pH

Symbiotic anemones

Linear model formula: Protein content = 79.85 + 11.65 (pH 7.68)

No effect of header tank was detected.

Coefficients	Estimate	Std. Error	t value	*p*-value	Significance
(Intercept)	79.847	6.062	13.171	$1.81e^{-14}$	***
pH 7.68	11.653	8.573	1.359	0.184	
Header tank effect	NA	NA	NA	NA	NA

Significance. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 25 on 32 degrees of freedom
Multiple R-squared: 0.05458
Adjusted R-squared: 0.02504
F-statistic: 1.847 on 1 and 32 df
p-value: 0.1836

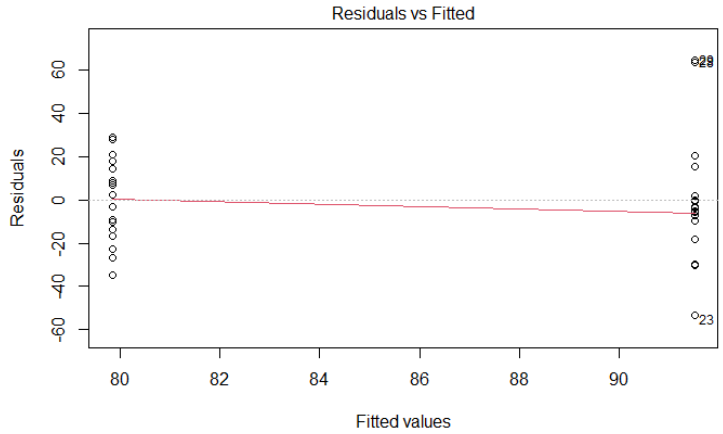
Model ANOVA

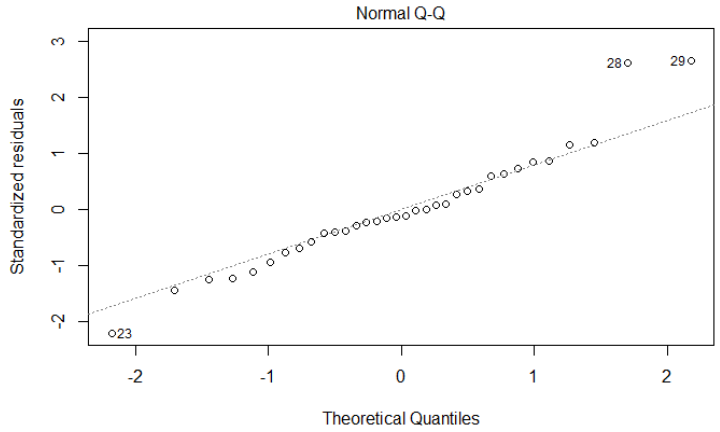
Variation	df	Sum of squares	Mean square	F-value	*p*-value
pH	1	1154	1154.2	1.847	0.184
Residuals	32	19993	624.8		

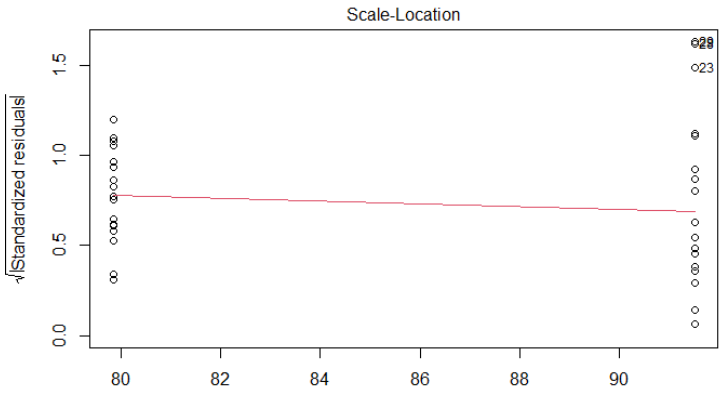
Shapiro-Wilk normality test

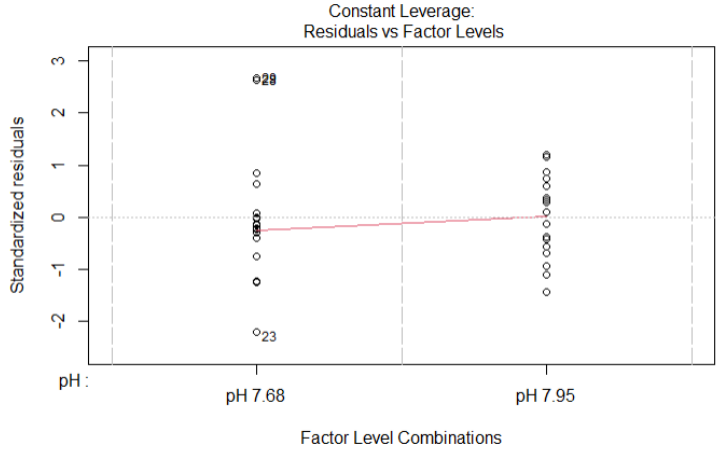
Data	W	*p*-value
Protein content	0.92631	0.02446

Model plots


Residuals vs Fitted
Residuals
Fitted values
23


Normal Q-Q
Standardized residuals
Theoretical Quantiles
23
28
29


Scale-Location
√|Standardized residuals|
Fitted values
23


Constant Leverage:
Residuals vs Factor Levels
Standardized residuals
pH :
pH 7.68
pH 7.95
Factor Level Combinations
23

Fitted linear model for host protein content (µg) over time

Symbiotic anemones

Linear model formula: Protein content = 72.97 + 6.26 (time)

No effect of header tank was detected.

Coefficients	Estimate	Std. Error	t value	*p*-value	Significance
(Intercept)	72.967	11.491	6.35	$3.96e^{-07}$	***
Time point	6.261	5.248	1.193	0.242	
Header tank effect	NA	NA	NA	NA	NA

Significance. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 25.15 on 32 degrees of freedom
Multiple R-squared: 0.04258
Adjusted R-squared: 0.01267
F-statistic: 1.423 on 1 and 32 df
p-value: 0.2416

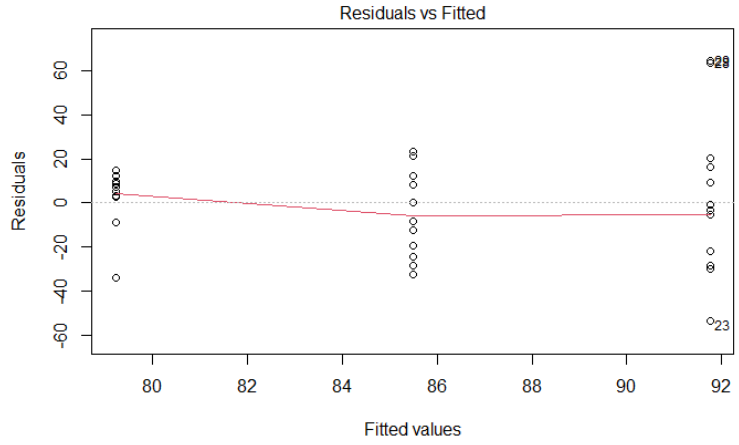
Model ANOVA

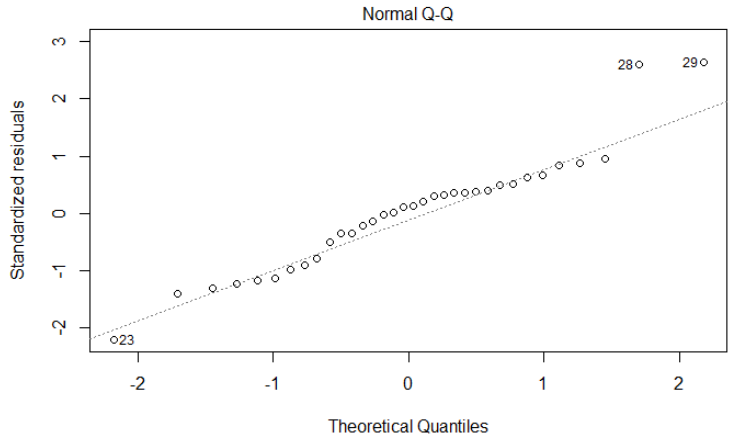
Variation	df	Sum of squares	Mean square	F-value	*p*-value
Time point	1	901	900.5	1.423	0.242
Residuals	32	20247	632.7		

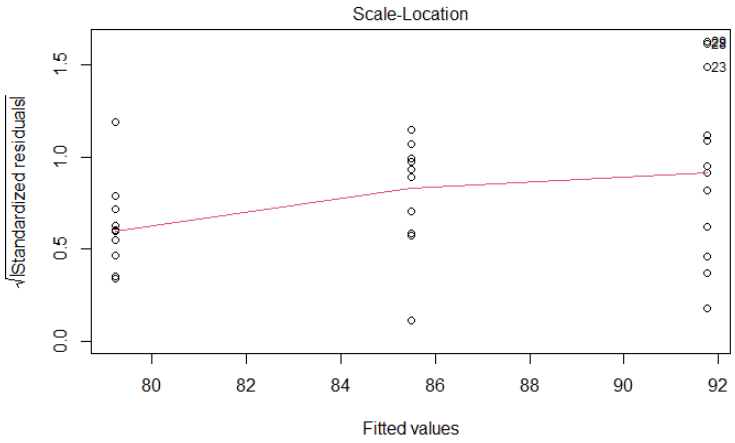
Shapiro-Wilk normality test

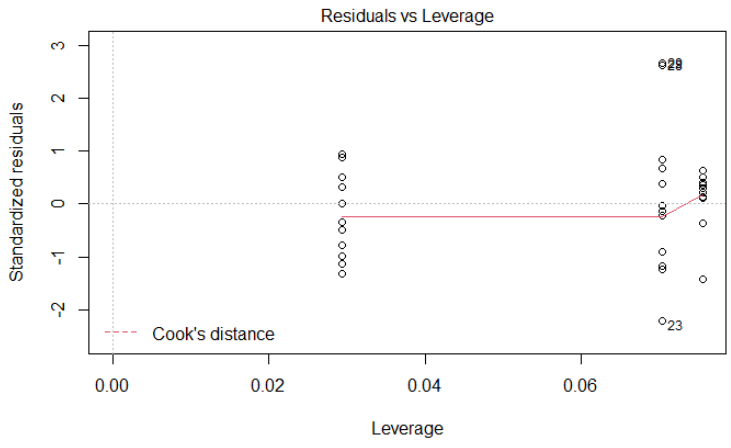
Data	W	*p*-value
Protein content	0.92631	0.02446

Model plots


Residuals vs Fitted
Residuals
Fitted values
23


Normal Q-Q
Standardized residuals
Theoretical Quantiles
28
29
23


Scale-Location
√|Standardized residuals|
Fitted values
23


Residuals vs Leverage
Standardized residuals
Cook's distance
Leverage
23

Fitted linear model for host protein content (µg) by pH

Aposymbiotic anemones

Linear model formula: Protein content = 54.07 + 0.68 (pH 7.68)

No effect of header tank was detected.

Coefficients	Estimate	Std. Error	t value	*p*-value	Significance
(Intercept)	54.0737	3.8983	13.871	$5.16e^{-16}$	***
pH 7.68	0.6842	5.513	0.124	0.902	
Header tank effect	NA	NA	NA	NA	NA

Significance. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 16.99 on 36 degrees of freedom
Multiple R-squared: 0.0004277
Adjusted R-squared: -0.02734
F-statistic: 0.0154 on 1 and 36 df
p-value: 0.9019

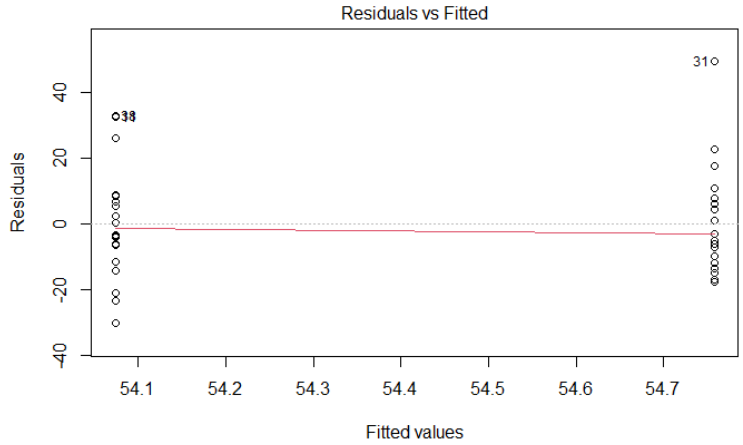
Model ANOVA

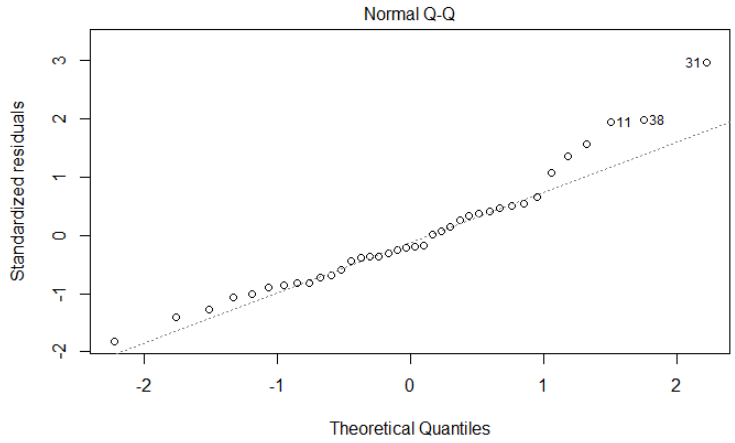
Variation	df	Sum of squares	Mean square	F-value	*p*-value
pH	1	4	4.45	0.015	0.902
Residuals	36	10394	288.74		

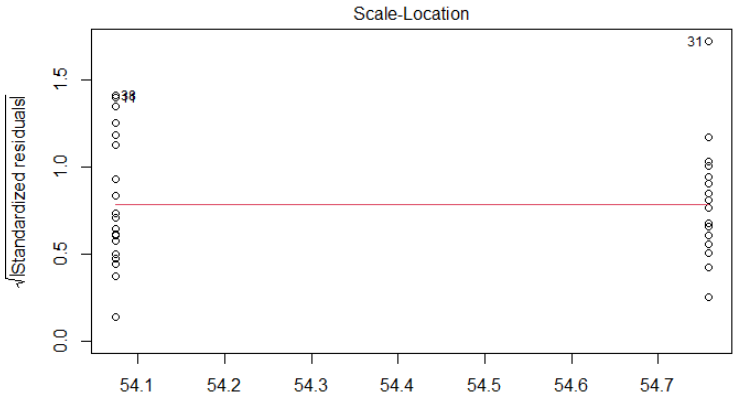
Shapiro-Wilk normality test

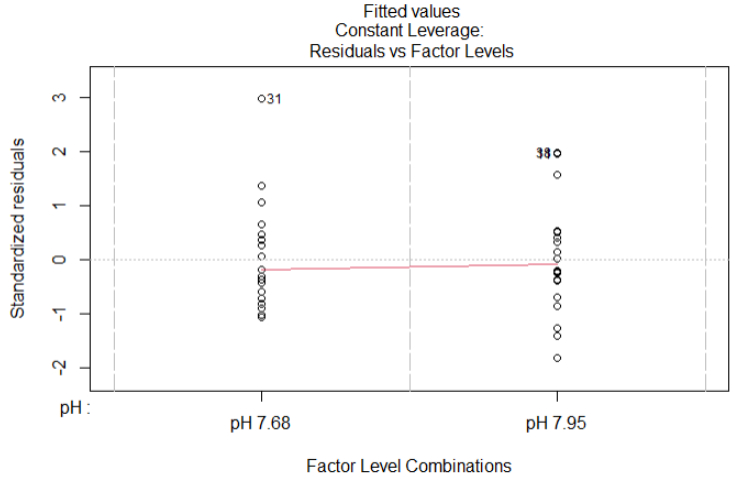
Data	W	*p*-value
Protein content	0.94737	0.07297

Model plots


Residuals vs Fitted
Residuals
Fitted values
31
38


Normal Q-Q
Standardized residuals
Theoretical Quantiles
31
11
38


Scale-Location
√|Standardized residuals|
Fitted values
31
38


Constant Leverage:
Residuals vs Factor Levels
Standardized residuals
pH :
pH 7.68
pH 7.95
Factor Level Combinations
31
38

Fitted linear model for host protein content (µg) over time

Aposymbiotic anemones

Linear model formula: Protein content = 44.33 + 4.85 (time)

No effect of header tank was detected.

Coefficients	Estimate	Std. Error	t value	*p*-value	Significance
(Intercept)	44.329	7.4	5.99	$7.16e^{-07}$	***
Time point	4.852	3.318	1.462	0.152	
Header tank effect	NA	NA	NA	NA	NA

Significance. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 16.51 on 36 degrees of freedom
Multiple R-squared: 0.05606
Adjusted R-squared: 0.02984
F-statistic: 2.138 on 1 and 36 df
p-value: 0.1524

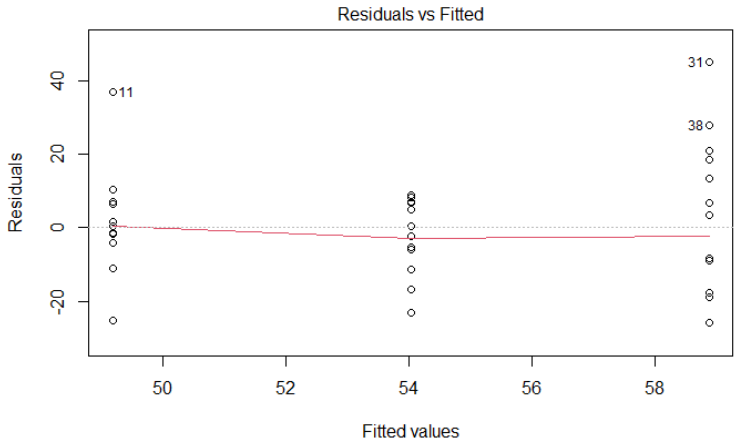
Model ANOVA

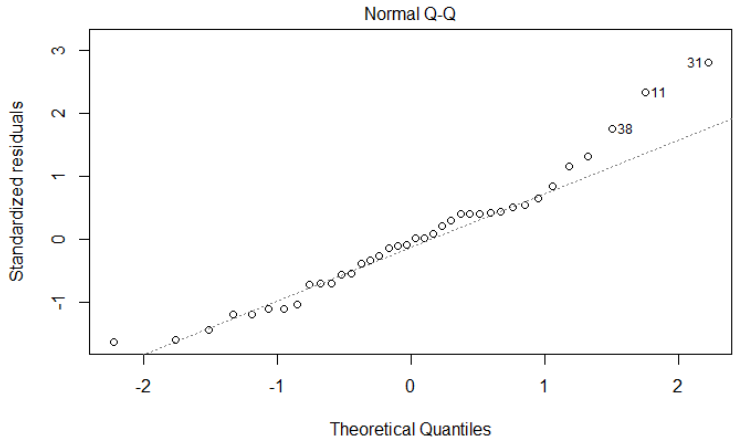
Variation	df	Sum of squares	Mean square	F-value	*p*-value
Time point	1	583	583	2.138	0.152
Residuals	36	9816	272.7		

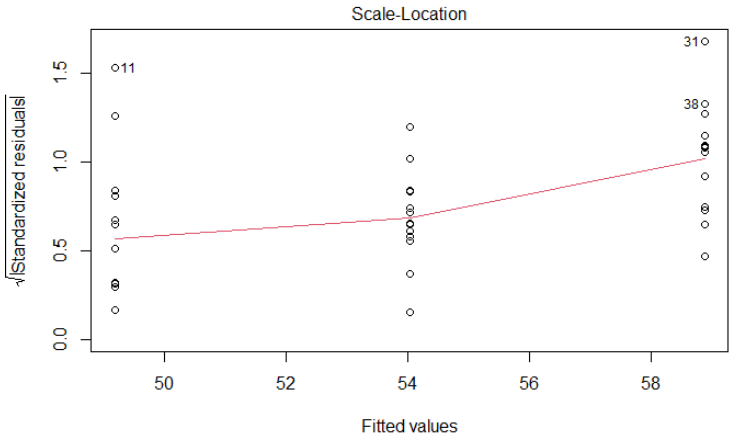
Shapiro-Wilk normality test

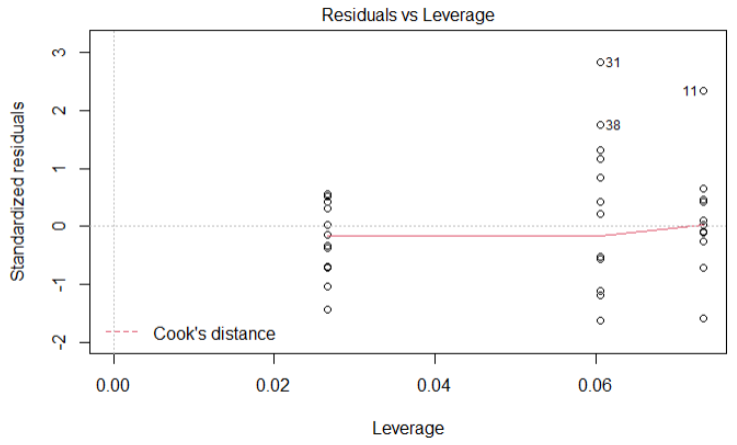
Data	W	*p*-value
Protein content	0.94737	0.07297

Model plots


Residuals vs Fitted
Residuals
Fitted values
11
31
38
-20
0
20
40
50
52
54
56
58


Normal Q-Q
Standardized residuals
Theoretical Quantiles
31
11
38
-1
0
1
2
3
-2
-1
0
1
2


Scale-Location
√|Standardized residuals|
Fitted values
11
31
38
0.0
0.5
1.0
1.5
50
52
54
56
58


Residuals vs Leverage
Standardized residuals
Leverage
Cook's distance
31
11
38
-2
-1
0
1
2
3
0.00
0.02
0.04
0.06

Fitted linear models for pedal disc diameter (mm) by pH and over time

Symbiotic anemones

Linear model formula: Pedal disc diameter = 5.60 + 0.48 (pH 7.68) + 1.40 (time)

No effect of header tank was detected.

Coefficients	Estimate	Std. Error	t value	*p*-value	Significance
(Intercept)	5.600535	0.106032	52.819	$2.00e^{-16}$	***
pH 7.68	0.478587	0.114577	4.177	$3.41e^{-05}$	***
Day	0.04934	0.006158	8.013	$6.19e^{-15}$	***
Header tank effect	NA	NA	NA	NA	NA

Significance. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.383 on 580 degrees of freedom
Multiple R-squared: 0.1239
Adjusted R-squared: 0.1209
F-statistic: 41.02 on 2 and 580 df
p-value: $2.20e^{-16}$

Model ANOVA

Variation	df	Sum of squares	Mean square	F-value	*p*-value
pH 7.95	1	34.1	34.13	17.88	$2.73e^{-05}$
Day	1	123.5	123.55	64.62	$5.12\ e^{-15}$
Residuals	580	1108.9	1.91		

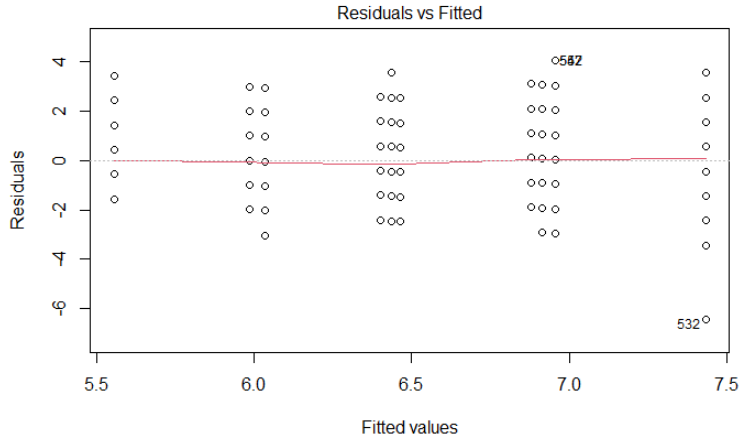
Shapiro-Wilk normality test

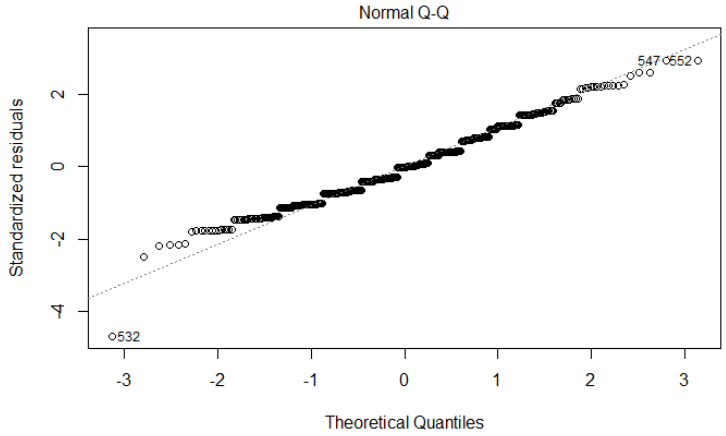
Data	W	*p*-value
Pedal disc diameter	0.94228	0.02861

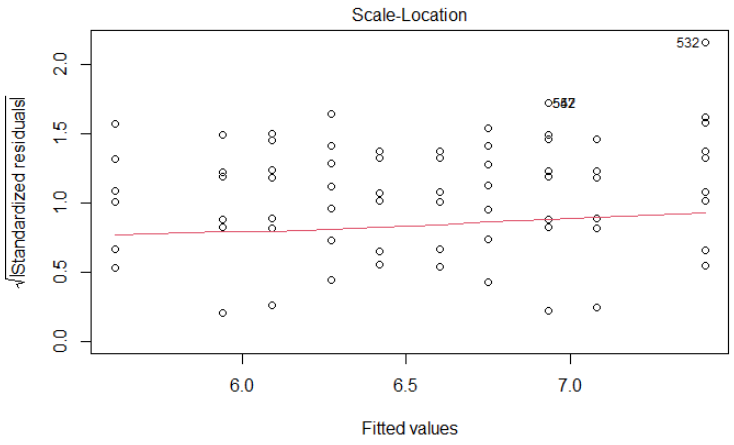
Tukey's HSD test comparing pedal disc diameter at Days 0, 7, 14, 21 and 26

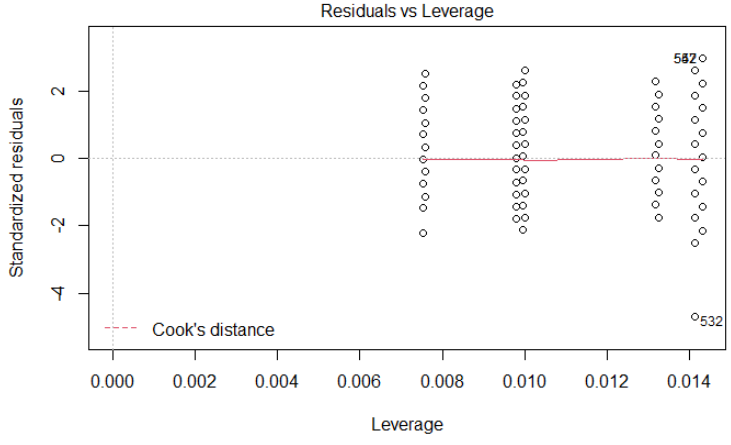
Comparison	Difference	Lower	Upper	*p*-value	Significance
Day 7 – Day 0	0.4319	-0.01402	0.877817	0.062898	.
Day 14 – Day 0	0.88178	0.432669	1.33089	$1.1e^{-06}$	***
Day 21 – Day 0	0.84699	0.349133	1.344847	$3.94e^{-05}$	***
Day 26 – Day 0	**1.400044**	0.887954	1.912134	0	***
Day 14 – Day 7	0.44988	-0.03321	0.932974	0.081672	.
Day 21 – Day 7	0.415091	-0.11363	0.943808	0.201237	
Day 26 – Day 7	0.968145	0.426004	1.510285	$1.31e^{-05}$	***
Day 21 – Day 14	-0.03479	-0.5662	0.496623	0.999769	
Day 26 – Day 14	0.518265	-0.0265	1.063034	0.071062	.
Day 26 – Day 21	0.553054	-0.03255	1.138661	0.074587	.

Model plots


Residuals vs Fitted
Residuals
Fitted values
532


Normal Q-Q
Standardized residuals
Theoretical Quantiles
547
552
532


Scale-Location
√|Standardized residuals|
Fitted values
532


Residuals vs Leverage
Standardized residuals
Cook's distance
Leverage
532

Linear model formula (including interaction term):

Pedal disc diameter = 5.63 + 0.42 (pH 7.69) + 0.05 (time) – 0.01 (pH 7.95 * Day)

No effect of header tank was detected.

Coefficients	Estimate	Std. Error	t value	*p*-value	Significance
(Intercept)	5.631099	0.126541	44.50	$2.00e^{-16}$	***
pH 7.68	0.417973	0.178452	2.342	0.0195	*
Day	0.052036	0.008657	6.011	$3.26e^{-09}$	***
pH:Day	0.00546	0.012325	0.443	0.6577	
Header tank effect	NA	NA	NA	NA	NA

Significance. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.384 on 579 degrees of freedom
Multiple R-squared: 0.1242
Adjusted R-squared: 0.1197
F-statistic: 27.38 on 3 and 579 df
p-value: $2.00e^{-16}$

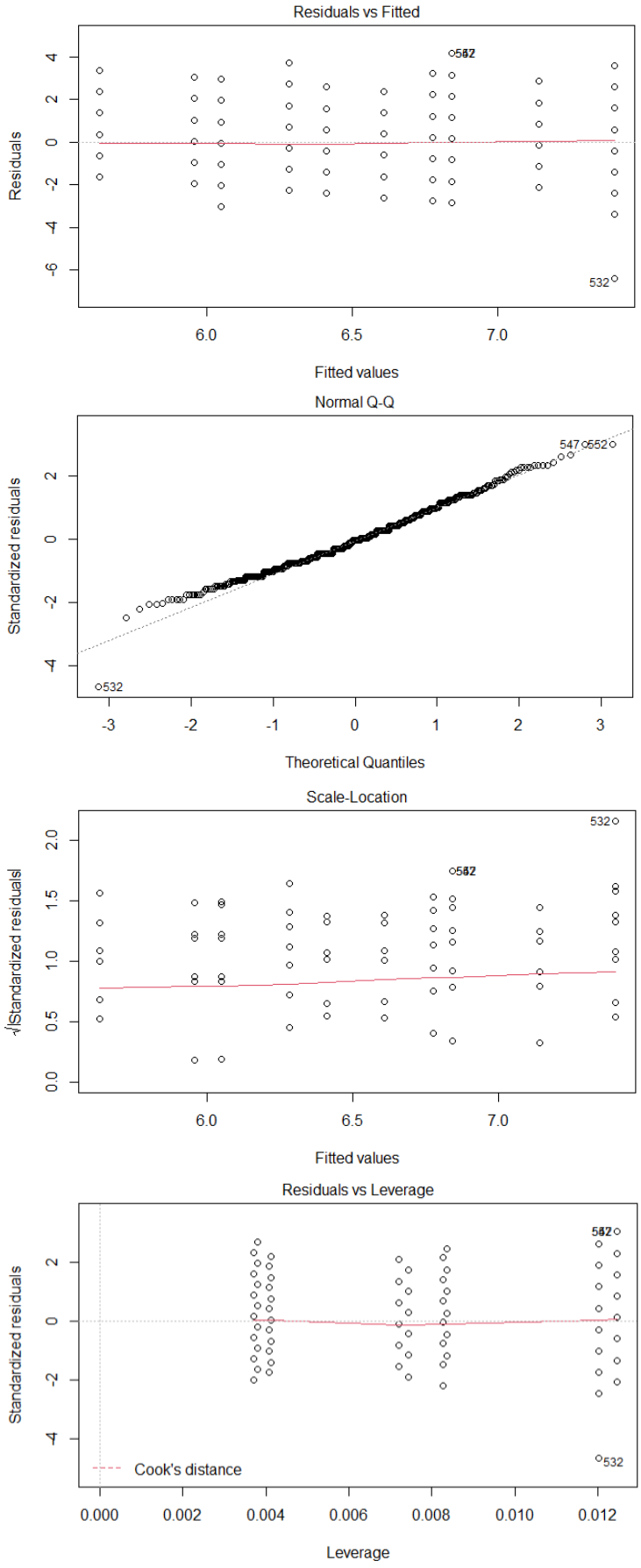
Model ANOVA

Variation	df	Sum of squares	Mean square	F-value	*p*-value
pH	1	34.1	34.13	17.814	$2.83e^{-05}$
Day	1	122.8	122.84	64.116	$6.46e^{-15}$
pH:Day	1	0.4	0.38	0.196	0.658
Residuals	579	1109.3	1.92		

Shapiro-Wilk normality test

Data	W	*p*-value
Pedal disc diameter	0.94228	0.02861

Model plots


Residuals vs Fitted
Residuals
Fitted values
Normal Q-Q
Standardized residuals
Theoretical Quantiles
Scale-Location
√|Standardized residuals|
Fitted values
Residuals vs Leverage
Standardized residuals
Cook's distance
Leverage

Fitted linear model for pedal disc diameter (mm) by pH

Aposymbiotic anemones

Linear model formula: Pedal disc diameter = 3.26 – 0.05 (pH 7.68)

No effect of header tank was detected.

Coefficients	Estimate	Std. Error	t value	*p*-value	Significance
(Intercept)	3.25862	0.05389	60.473	$2e^{-16}$	***
pH 7.68	-0.05408	0.07864	-0.688	0.492	
Header tank effect	NA	NA	NA	NA	NA

Significance. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.005 on 654 degrees of freedom
Multiple R-squared: 0.0007225
Adjusted R-squared: -0.0008055
F-statistic: 0.4728 on 1 and 654 df
p-value: 0.4919

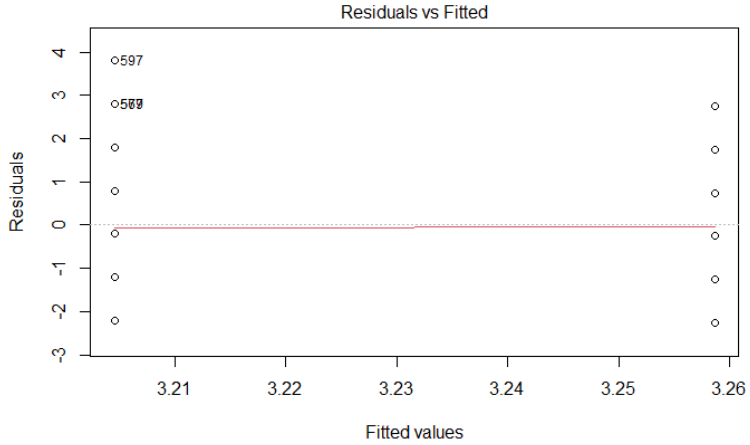
Model ANOVA

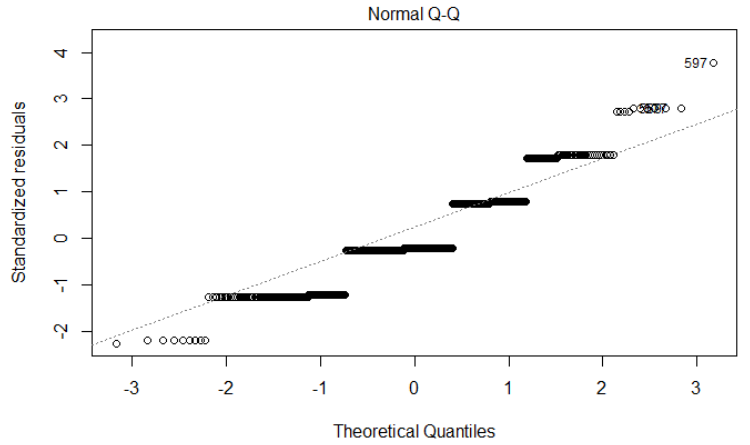
Variation	df	Sum of squares	Mean square	F-value	*p*-value
pH 7.95	1	0.5	0.4778	0.473	0.492
Residuals	654	660.8	1.0105		

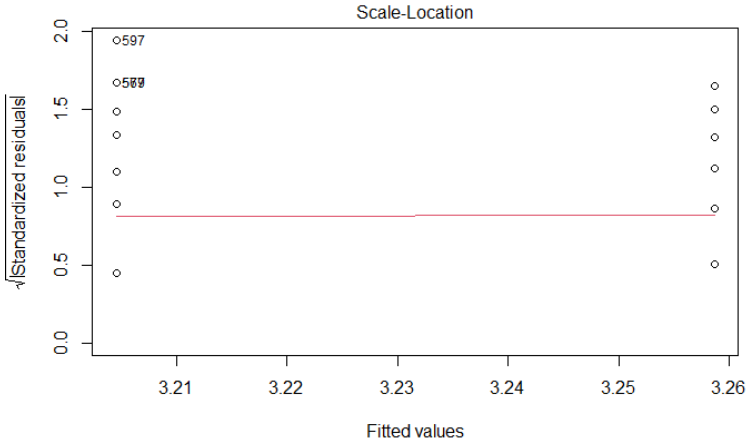
Shapiro-Wilk normality test

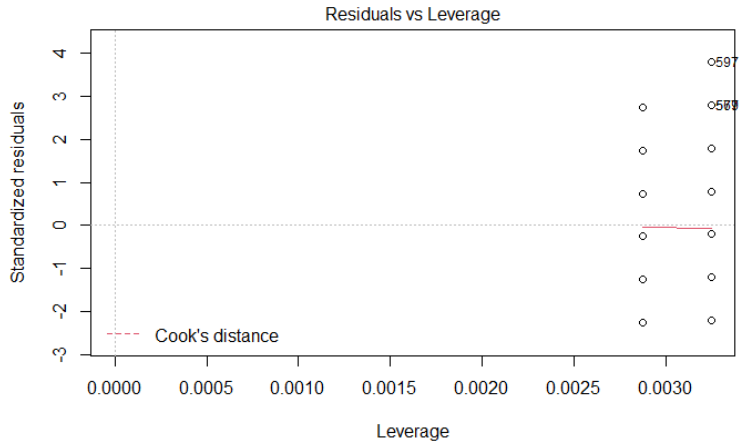
Data	W	*p*-value
Pedal disc diameter	0.89761	0.221

Model plots


Residuals vs Fitted
Residuals
Fitted values
597


Normal Q-Q
Standardized residuals
Theoretical Quantiles
597


Scale-Location
√|Standardized residuals|
Fitted values
597


Residuals vs Leverage
Standardized residuals
Cook's distance
Leverage
597

Fitted linear model for pedal disc diameter (mm) over time

Aposymbiotic anemones

Linear model formula: Pedal disc diameter = 2.69 + 1.60 (time)

No effect of header tank was detected.

Coefficients	Estimate	Std. Error	t value	*p*-value	Significance
(Intercept)	2.695487	0.053231	50.64	$2e^{-16}$	***
Day	0.052935	0.003965	13.35	$2e^{-16}$	***
Header tank effect	NA	NA	NA	NA	NA

Significance. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.8914 on 654 degrees of freedom
Multiple R-squared: 0.2142
Adjusted R-squared: 0.213
F-statistic: 178.3 1 on 1 and 654 df
p-value: $2.20e^{-16}$

Model ANOVA

Variation	df	Sum of squares	Mean square	F-value	*p*-value
Day	1	141.6	141.64	178.3	$2e^{-16}$
Residuals	654	519.7	0.79		

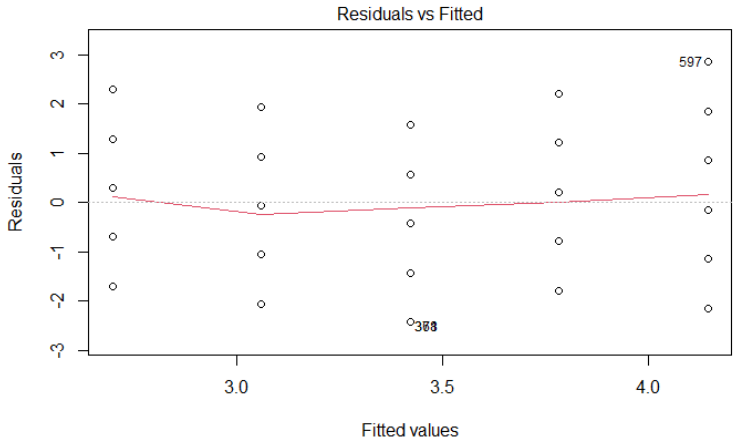
Shapiro-Wilk normality test

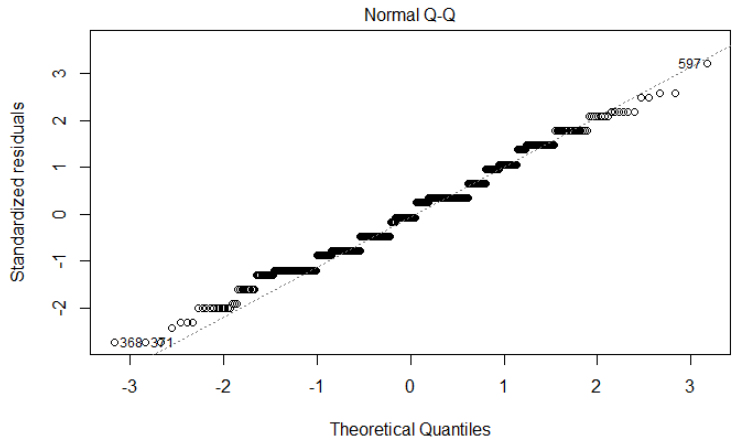
Data	W	*p*-value
Pedal disc diameter	0.89761	0.221

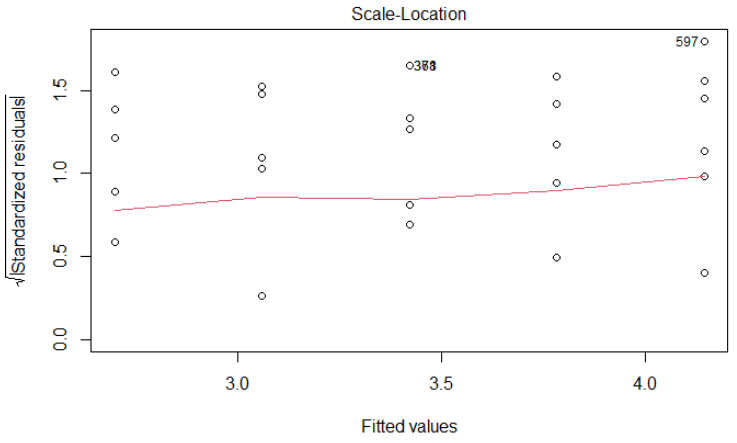
Tukey's HSD test comparing pedal disc diameter at Days 0, 7, 14, 21 and 26

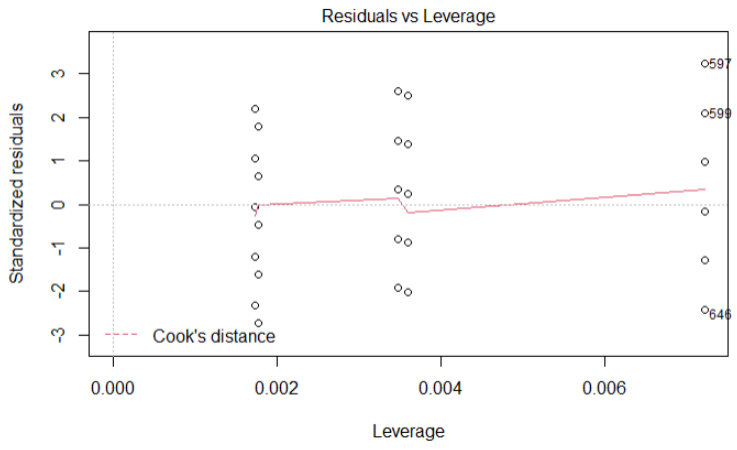
Comparison	Difference	Lower	Upper	*p*-value	Significance
Day 7 – Day 0	0.04341	-0.2136	0.300424	0.990624	
Day 14 – Day 0	0.595182	0.337689	0.852675	0	***
Day 21 – Day 0	0.794819	0.487396	1.102242	0	***
Day 26 – Day 0	**1.602701**	1.256816	1.948586	0	***
Day 14 – Day 7	0.551772	0.277437	0.826106	$5e^{-07}$	***
Day 21 – Day 7	0.751409	0.429748	1.073069	0	***
Day 26 – Day 7	1.55929	1.200692	1.917889	0	***
Day 21 – Day 14	0.199637	-0.12241	0.521681	0.43728	
Day 26 – Day 14	1.007519	0.648576	1.366461	0	***
Day 26 – Day 21	0.807882	0.411592	1.204172	$4e^{-07}$	***

Model plots


Residuals vs Fitted
Residuals
Fitted values
597


Normal Q-Q
Standardized residuals
Theoretical Quantiles
597


Scale-Location
√|Standardized residuals|
Fitted values
597


Residuals vs Leverage
Standardized residuals
Cook's distance
Leverage
597
599
646

Fitted linear model for Φ_{PSII} by pH

Linear model formula: $\Phi_{PSII} = 0.54 + 0.02$ (pH 7.68)

No effect of header tank was detected.

Coefficients	Estimate	Std. Error	t value	*p*-value	Significance
(Intercept)	0.53993	0.01075	50.245	$2e^{-16}$	***
pH 7.68	0.02156	0.0152	1.418	0.162	
Header tank effect	NA	NA	NA	NA	NA

Significance. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.05584 on 52 degrees of freedom
Multiple R-squared: 0.03725
Adjusted R-squared: 0.01874
F-statistic: 2.012 on 1 and 52 df
p-value: 0.162

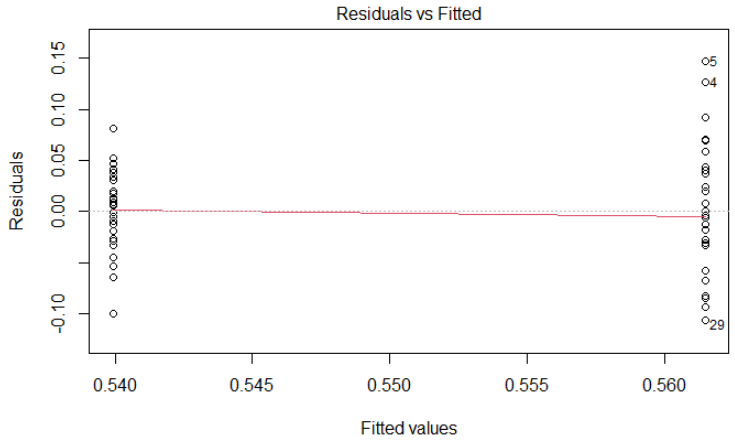
Model ANOVA

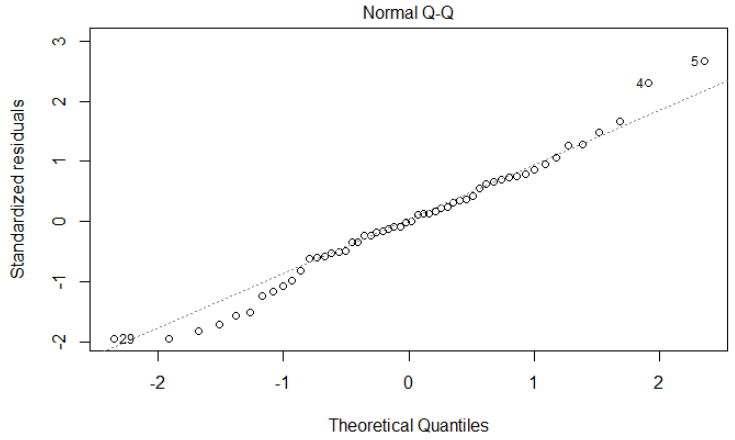
Variation	df	Sum of squares	Mean square	F-value	*p*-value
pH	1	0.00627	0.006273	2.012	0.162
Residuals	52	0.16212	0.003118		

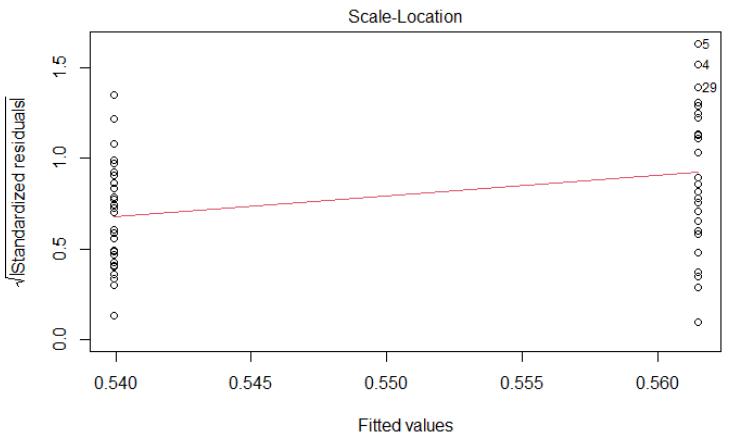
Shapiro-Wilk normality test

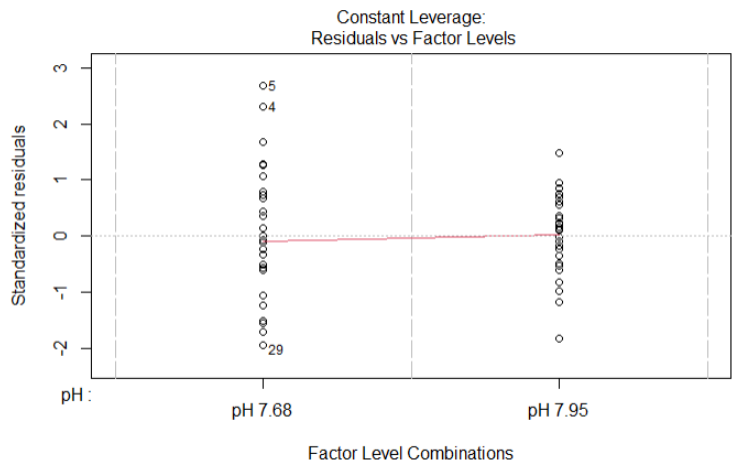
Data	W	*p*-value
Φ_{PSII}	0.98068	0.53

Model plots


Residuals vs Fitted
Residuals
Fitted values
0.540
0.545
0.550
0.555
0.560
-0.10
0.00
0.05
0.10
0.15
5
4
29


Normal Q-Q
Standardized residuals
Theoretical Quantiles
-2
-1
0
1
2
3
5
4
29


Scale-Location
√|Standardized residuals|
Fitted values
0.540
0.545
0.550
0.555
0.560
0.0
0.5
1.0
1.5
5
4
29


Constant Leverage:
Residuals vs Factor Levels
Standardized residuals
pH :
pH 7.68
pH 7.95
Factor Level Combinations
-2
-1
0
1
2
3
5
4
29

Fitted linear model for Φ_{PSII} over time

Linear model formula: $\Phi_{PSII} = 0.58 + 0.02$ (time)

No effect of header tank was detected.

Coefficients	Estimate	Std. Error	t value	*p*-value	Significance
(Intercept)	0.578519	0.019132	30.238	$2e^{-16}$	***
Week	-0.01088	0.006877	-1.583	0.12	
Header tank effect	NA	NA	NA	NA	NA

Significance. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.05558 on 52 degrees of freedom
Multiple R-squared: 0.04596
Adjusted R-squared: 0.02762
F-statistic: 2.505 on 1 and 52 df
p-value: 0.1195

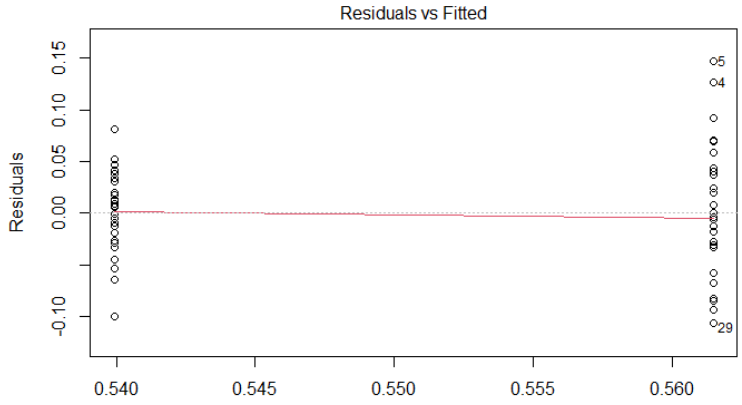
Model ANOVA

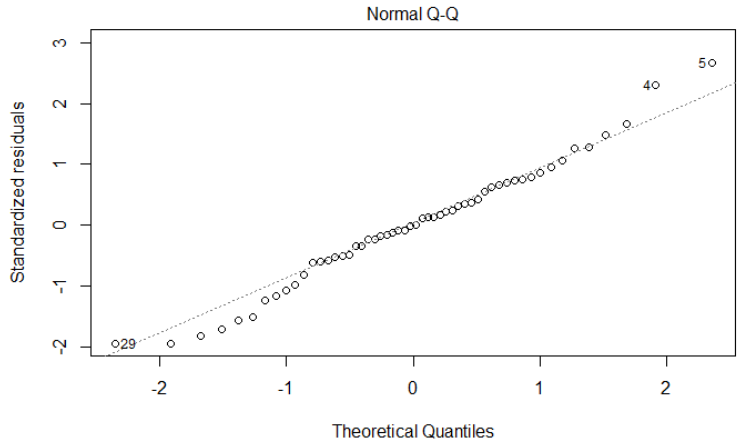
Variation	df	Sum of squares	Mean square	F-value	*p*-value
Week	1	0.00774	0.00774	2.505	0.12
Residuals	52	0.16066	0.00309		

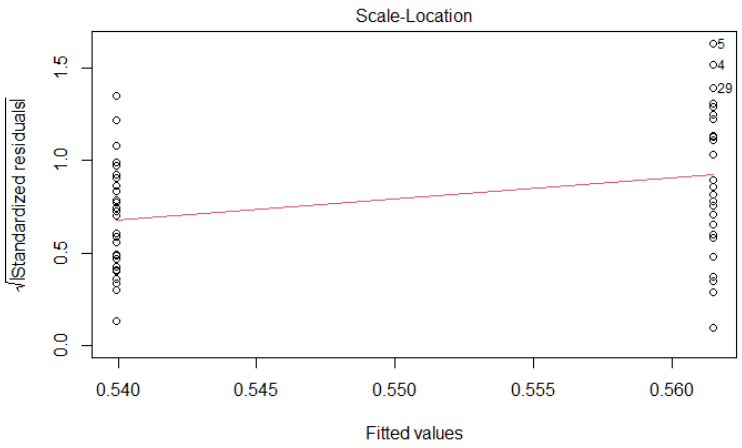
Shapiro-Wilk normality test

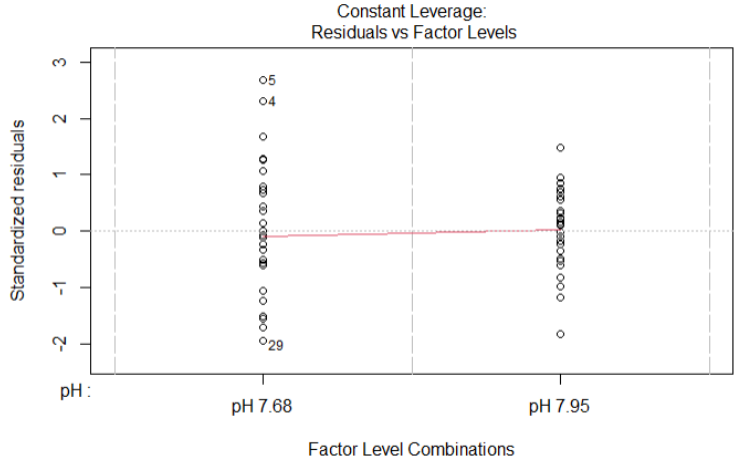
Data	W	*p*-value
Φ_{PSII}	0.98068	0.53

Model plots


Residuals vs Fitted
Residuals
0.15
0.10
0.05
0.00
-0.10
5
4
29
0.540
0.545
0.550
0.555
0.560
Fitted values


Normal Q-Q
Standardized residuals
3
2
1
0
-1
-2
5
4
29
-2
-1
0
1
2
Theoretical Quantiles


Scale-Location
√|Standardized residuals|
1.5
1.0
0.5
0.0
5
4
29
0.540
0.545
0.550
0.555
0.560
Fitted values


Constant Leverage:
Residuals vs Factor Levels
Standardized residuals
3
2
1
0
-1
-2
5
4
29
pH :
pH 7.68
pH 7.95
Factor Level Combinations

Fitted linear model for F_v/F_m by pH and over time

Linear model formula: $F_v/F_m = 0.63 + 0.10$ (pH at Week 1)

No effect of header tank was detected.

Coefficients	Estimate	Std. Error	t value	*p*-value	Significance
(Intercept)	0.63075	0.020206	31.216	$2e^{-16}$	***
pH 7.68	-0.09914	0.028515	-3.477	0.001088	**
Week	0.00375	0.007723	0.486	0.62947	***
pH:Week	0.0240	0.010726	2.238	0.02990	*
Header tank effect	NA	NA	NA	NA	NA

Significance. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.04241 on 48 degrees of freedom
Multiple R-squared: 0.3476
Adjusted R-squared: 0.3068
F-statistic: 8.524 on 3 and 48 df
p-value: 0.000325

Model ANOVA

Variation	df	Sum of squares	Mean square	F-value	*p*-value
pH	1	0.02056	0.020561	11.433	0.00144
Week	1	0.01642	0.016421	9.131	0.00402
pH:Week	1	0.00901	0.009007	5.009	0.0299
Residuals	48	0.08632	0.001798		

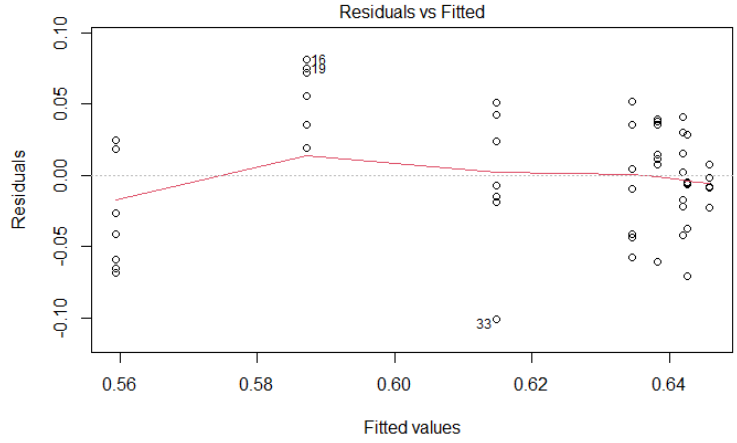
Shapiro-Wilk normality test

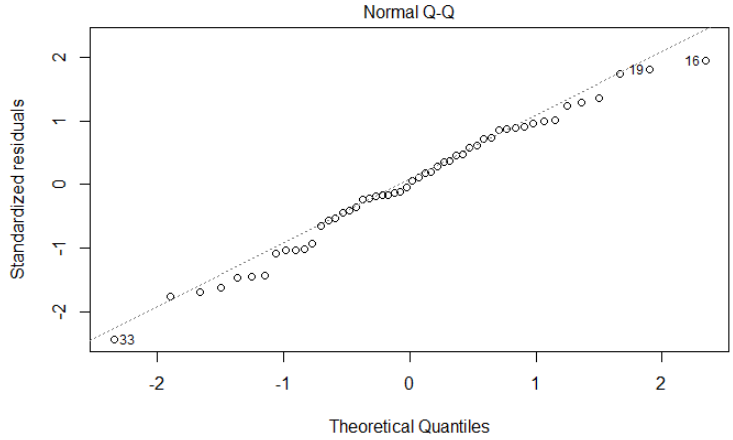
Data	W	*p*-value
F_v/F_m	0.89214	0.02

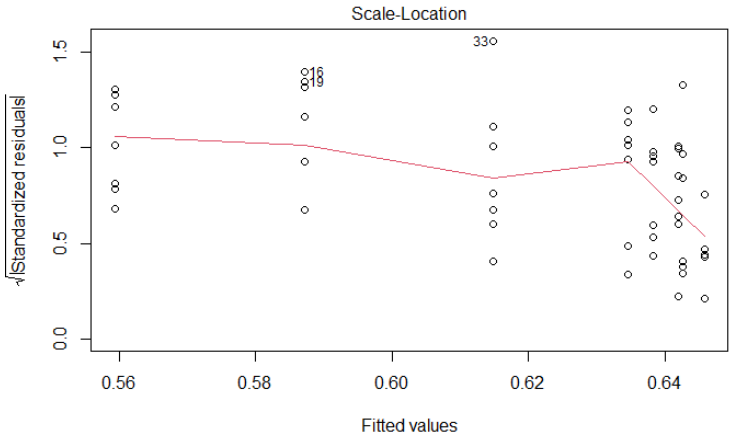
Tukey's HSD test comparing F_v/F_m by pH at Week (Wk) 1, 2, 3 and 4

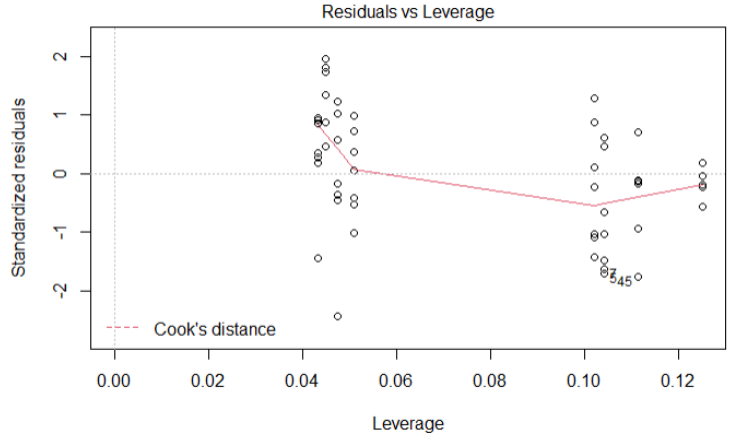
Comparison	Difference	Lower	Upper	*p*-value	Significance
pH 7.95:Wk 1 - pH 7.68:Wk 1	**0.097571**	0.036373	0.15877	0.000192	***
pH 7.68:Wk 2 - pH 7.68:Wk 1	0.115214	0.051517	0.178911	$2.03e^{-05}$	***
pH 7.95:Wk 2 - pH 7.68:Wk 1	0.122429	0.06123	0.183627	$2.6e^{-06}$	***
pH 7.68:Wk 3 - pH 7.68:Wk 1	0.083143	0.021945	0.144341	0.002056	***
pH 7.95:Wk 3 - pH 7.68:Wk 1	0.114714	0.053516	0.175912	$1.01e^{-05}$	***
pH 7.68:Wk 4 - pH 7.68:Wk 1	0.098214	0.034517	0.161911	0.00033	***
pH 7.95:Wk 4 - pH 7.68:Wk 1	0.110714	0.043675	0.177753	0.000106	***
pH 7.68:Wk 2 - pH 7.95:Wk 1	0.017643	-0.04605	0.08134	0.986312	
pH 7.95:Wk 2 - pH 7.95:Wk 1	0.024857	-0.03634	0.086055	0.896951	
pH 7.68:Wk 3 - pH 7.95:Wk 1	-0.01443	-0.07563	0.04677	0.994758	
pH 7.95:Wk 3 - pH 7.95:Wk 1	0.017143	-0.04406	0.078341	0.98539	
pH 7.68:Wk 4 - pH 7.95:Wk 1	0.000643	-0.06305	0.06434	1	
pH 7.95:Wk 4 - pH 7.95:Wk 1	0.013143	-0.0539	0.080182	0.998344	
pH 7.95:Wk 2 - pH 7.68:Wk 2	0.007214	-0.05648	0.070911	0.999956	
pH 7.68:Wk 3 - pH 7.68:Wk 2	-0.03207	-0.09577	0.031626	0.746734	
pH 7.95:Wk 3 - pH 7.68:Wk 2	-0.0005	-0.0642	0.063197	1	
pH 7.68:Wk 4 - pH 7.68:Wk 2	-0.017	-0.0831	0.049102	0.991146	
pH 7.95:Wk 4 - pH 7.68:Wk 2	-0.0045	-0.07383	0.064828	0.999999	
pH 7.68:Wk 3 - pH 7.95:Wk 2	-0.03929	-0.10048	0.021912	0.466786	
pH 7.95:Wk 3 - pH 7.95:Wk 2	-0.00771	-0.06891	0.053484	0.999909	
pH 7.68:Wk 4 - pH 7.95:Wk 2	-0.02421	-0.08791	0.039483	0.924853	
pH 7.95:Wk 4 - pH 7.95:Wk 2	-0.01171	-0.07875	0.055325	0.99921	
pH 7.95:Wk 3 - pH 7.68:Wk 3	0.031571	-0.02963	0.09277	0.723342	
pH 7.68:Wk 4 - pH 7.68:Wk 3	0.015071	-0.04863	0.078768	0.994643	
pH 7.95:Wk 4 - pH 7.68:Wk 3	0.027571	-0.03947	0.094611	0.890841	
pH 7.68:Wk 4 - pH 7.95:Wk 3	-0.0165	-0.0802	0.047197	0.990759	
pH 7.95:Wk 4 - pH 7.95:Wk 3	-0.004	-0.07104	0.063039	1	
pH 7.95:Wk 4 - pH 7.68:Wk 4	0.0125	-0.05683	0.081828	0.999032	

Model plots


Residuals vs Fitted
Residuals
Fitted values
16
19
33


Normal Q-Q
Standardized residuals
Theoretical Quantiles
16
19
33


Scale-Location
√|Standardized residuals|
Fitted values
16
19
33


Residuals vs Leverage
Standardized residuals
Leverage
Cook's distance

Fitted linear model for symbiont cell-specific chlorophyll *a* content *per* (pg) by pH

Linear model formula: Chlorophyll *a* = 1.41 - 0.002 (pH 7.68)

No effect of header tank was detected.

Coefficients	Estimate	Std. Error	t value	*p*-value	Significance
(Intercept)	1.408118	0.061518	22.889	$2e^{-16}$	***
pH 7.68	-0.001882	0.087	-0.022	0.983	
Header tank effect	NA	NA	NA	NA	NA

Significance. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.2536 on 32 degrees of freedom
Multiple R-squared: $1.463e^{-05}$
Adjusted R-squared: -0.03123
F-statistic: 0.0004681 on 1 and 32 df
p-value: 0.9829

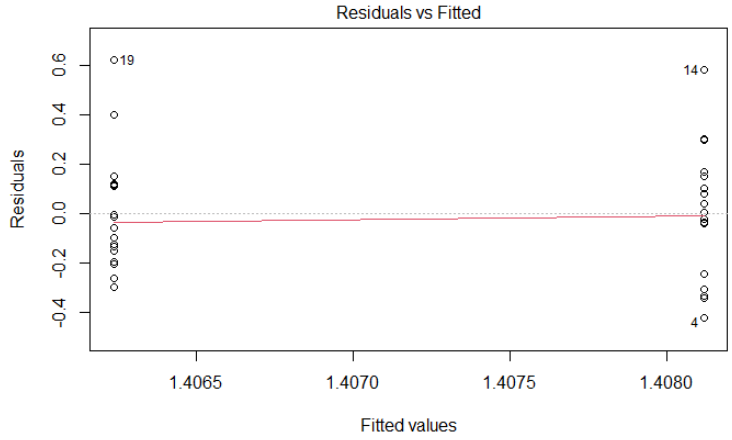
Model ANOVA

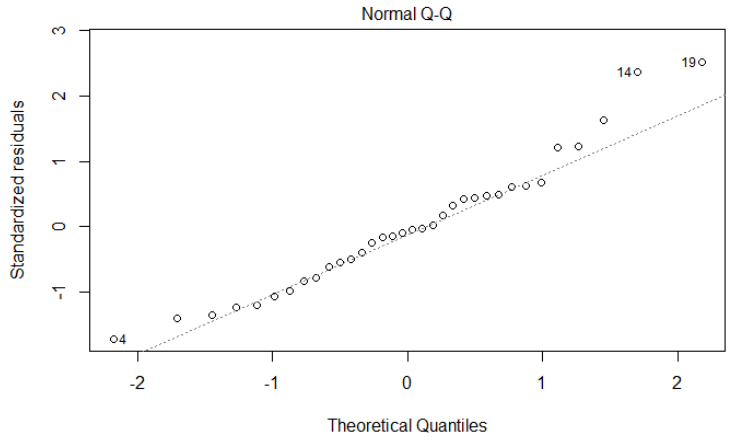
Variation	df	Sum of squares	Mean square	F-value	*p*-value
pH	1	0	0.00003	0	0.983
Residuals	32	2.059	0.06434		

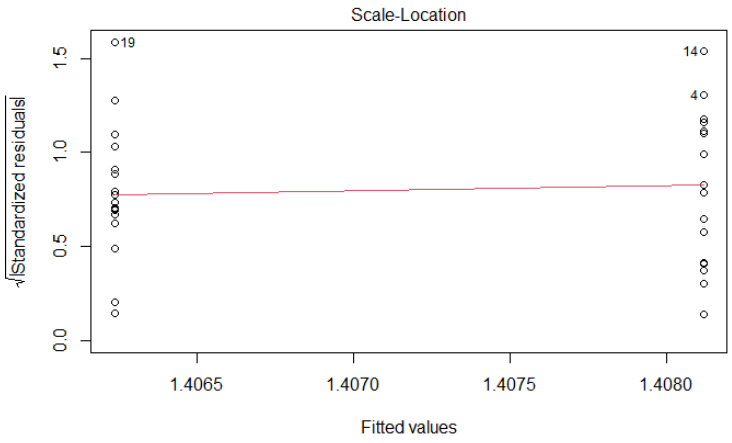
Shapiro-Wilk normality test

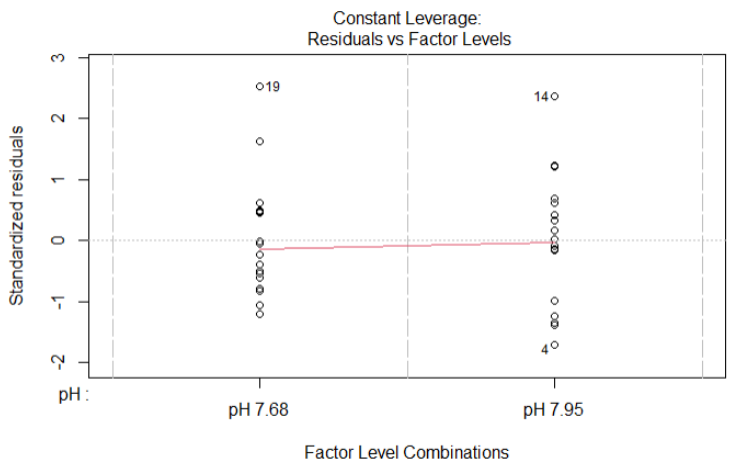
Data	W	*p*-value
Chlorophyll *a*	0.96015	0.2455

Model plots


Residuals vs Fitted
Residuals
Fitted values
19
14
4
1.4065
1.4070
1.4075
1.4080


Normal Q-Q
Standardized residuals
Theoretical Quantiles
19
14
4


Scale-Location
√|Standardized residuals|
Fitted values
19
14
4


Constant Leverage:
Residuals vs Factor Levels
Standardized residuals
pH :
pH 7.68
pH 7.95
Factor Level Combinations
19
14
4

Fitted linear model for symbiont cell-specific chlorophyll *a* content *per* (pg) over time

Linear model formula: Chlorophyll *a* = 1.51 - 0.05 (time)

No effect of header tank was detected.

Coefficients	Estimate	Std. Error	t value	*p*-value	Significance
(Intercept)	1.50747	0.11429	13.19	$1.74e^{-14}$	***
Time point	-0.04942	0.0522	-0.947	0.351	
Header tank effect	NA	NA	NA	NA	NA

Significance. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.2502 on 32 degrees of freedom
Multiple R-squared: 0.02725
Adjusted R-squared: -0.00315
F-statistic: 0.8964 on 1 and 32 df
p-value: 0.3509

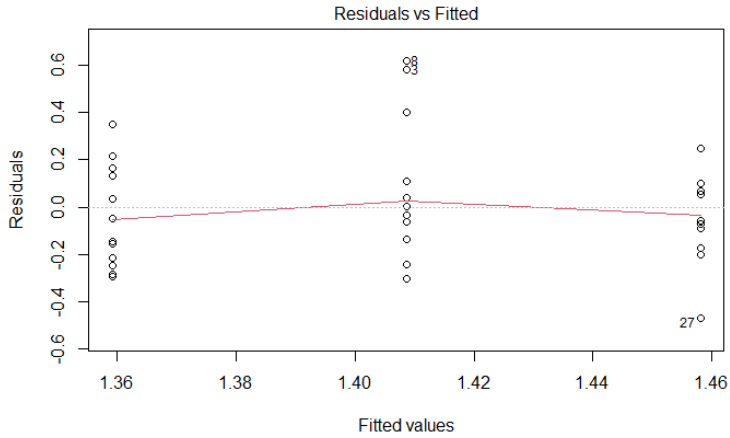
Model ANOVA

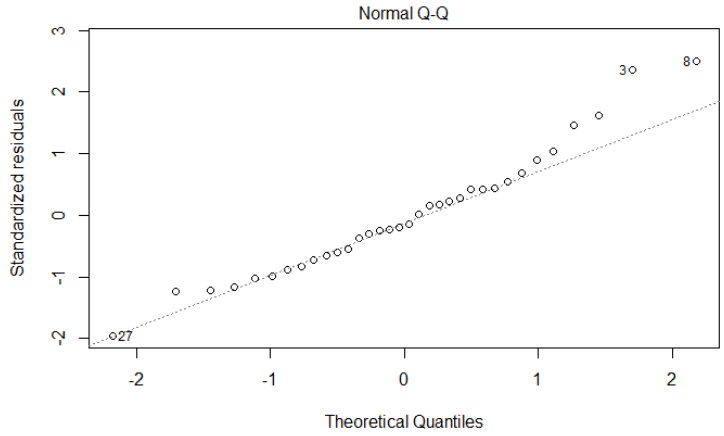
Variation	df	Sum of squares	Mean square	F-value	*p*-value
Time point	1	0	0.00003	0	0.983
Residuals	32	2.059	0.06434		

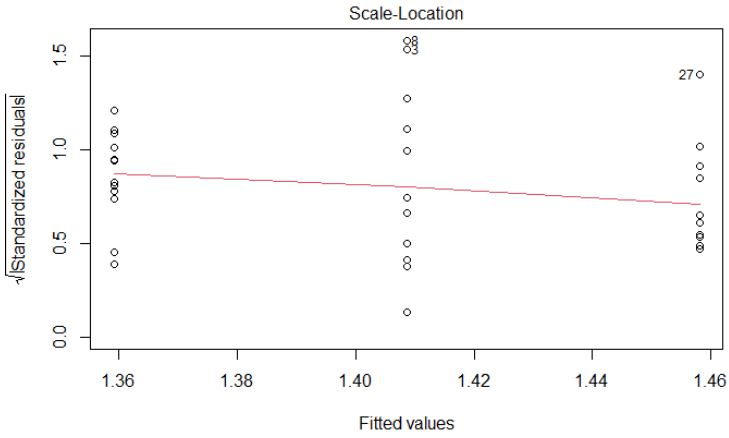
Shapiro-Wilk normality test

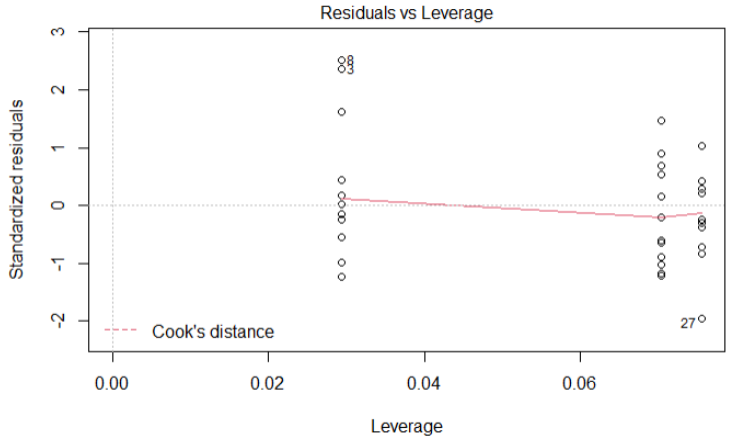
Data	W	*p*-value
Chlorophyll *a*	0.96015	0.2455

Model plots


Residuals vs Fitted
Residuals
Fitted values
27


Normal Q-Q
Standardized residuals
Theoretical Quantiles
27
3
8


Scale-Location
√|Standardized residuals|
Fitted values
27


Residuals vs Leverage
Standardized residuals
Cook's distance
Leverage
27