

Annex 3 – Statistical model table for physiological parameters of interest

```
anova(modelOsmolality)
```

```
## Type III Analysis of Variance Table with Satterthwaite's method
##              Sum Sq Mean Sq NumDF DenDF F value Pr(>F)
## Sgroup      0.00000 0.000000    1 10.035  0.0001 0.9942501
## Scondition  0.32563 0.162813    2 10.559 339.2389 2.627e-10 ***
## Day         0.00846 0.004232    2 70.983   8.8185 0.0003797 ***
## Sgroup:Scondition 0.00001 0.000004    2 10.559  0.0080 0.9920619
## Sgroup:Day    0.00142 0.000709    2 70.983   1.4780 0.2350225
## Scondition:Day 0.00702 0.002340    3 70.983   4.8767 0.0038581 **
## Sgroup:Scondition:Day 0.00190 0.000635    3 70.983   1.3231 0.2736813
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Observations	144
Dependent variable	Osmolality
Type	Mixed effects linear regression
AIC	-530.5113
BIC	-474.0849
Pseudo-R² (fixed effects)	0.8867
Pseudo-R² (total)	0.9008

Fixed Effects

	Est.	S.E.	t val.	d.f.	p
(Intercept)	2.4484	0.0085	287.7897	31.7294	0.0000
SgroupSW	-0.0052	0.0120	-0.4363	31.7294	0.6656
Scondition10	0.0361	0.0120	3.0038	31.7294	0.0052
Scondition20	0.1717	0.0120	14.2673	31.7294	0.0000
DayD40	-0.0113	0.0103	-1.0905	70.9830	0.2792
DayD42	-0.0014	0.0103	-0.1356	70.9830	0.8925
SgroupSW:Scondition10	-0.0110	0.0170	-0.6482	31.7294	0.5215
SgroupSW:Scondition20	0.0012	0.0170	0.0714	31.7294	0.9435
SgroupSW:DayD40	0.0175	0.0146	1.2016	70.9830	0.2335
SgroupSW:DayD42	-0.0014	0.0146	-0.0983	70.9830	0.9220
Scondition10:DayD40	-0.0095	0.0146	-0.6502	70.9830	0.5177
Scondition20:DayD40	-0.0137	0.0146	-0.9377	70.9830	0.3516
Scondition10:DayD42	0.0082	0.0146	0.5623	70.9830	0.5757
SgroupSW:Scondition10:DayD40	0.0025	0.0207	0.1206	70.9830	0.9043
SgroupSW:Scondition20:DayD40	-0.0147	0.0207	-0.7129	70.9830	0.4782
SgroupSW:Scondition10:DayD42	0.0330	0.0207	1.5992	70.9830	0.1142

p values calculated using Satterthwaite d.f.

Random Effects

Group	Parameter	Std. Dev.
sample	(Intercept)	0.0041
Tank	(Intercept)	0.0072
Residual		0.0219

Annex 3 - Early exposure of striped catfish (*P. hypophthalmus*) to increased salinities could elicit conditioning hormesis in juvenile fish

```
anova(modelNa)
```

```
## Type III Analysis of Variance Table with Satterthwaite's method
##              Sum Sq Mean Sq NumDF DenDF  F value    Pr(>F)
## Sgroup        0.00006  0.00006     1   128    0.0863  0.769417
## Scondition    1.03462  0.51731     2   128  746.1408 < 2.2e-16 ***
## Day           0.04714  0.02357     2   128   33.9982  1.437e-12 ***
## Sgroup:Scondition 0.00686  0.00343     2   128    4.9507  0.008493 **
## Sgroup:Day     0.00724  0.00362     2   128    5.2188  0.006625 **
## Scondition:Day 0.01060  0.00353     3   128    5.0976  0.002296 **
## Sgroup:Scondition:Day 0.00626  0.00209     3   128    3.0103  0.032653 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Observations	144
Dependent variable	Na
Type	Mixed effects linear regression

AIC	-494.6715
BIC	-438.2451
Pseudo-R ² (fixed effects)	0.9159
Pseudo-R ² (total)	0.9159

Fixed Effects

	Est.	S.E.	t val.	d.f.	p
(Intercept)	2.0089	0.0088	228.8820	128.0000	0.0000
SgroupSW	0.0047	0.0124	0.3810	128.0000	0.7038
Scondition10	0.0620	0.0124	4.9923	128.0000	0.0000
Scondition20	0.2574	0.0124	20.7405	128.0000	0.0000
DayD40	0.0089	0.0124	0.7159	128.0000	0.4754
DayD42	0.0629	0.0124	5.0650	128.0000	0.0000
SgroupSW:Scondition10	-0.0177	0.0176	-1.0085	128.0000	0.3151
SgroupSW:Scondition20	-0.0232	0.0176	-1.3237	128.0000	0.1879
SgroupSW:DayD40	0.0320	0.0176	1.8211	128.0000	0.0709
SgroupSW:DayD42	-0.0266	0.0176	-1.5131	128.0000	0.1327
Scondition10:DayD40	-0.0273	0.0176	-1.5564	128.0000	0.1221
Scondition20:DayD40	-0.0316	0.0176	-1.7974	128.0000	0.0746
Scondition10:DayD42	-0.0251	0.0176	-1.4313	128.0000	0.1548
SgroupSW:Scondition10:DayD40	0.0176	0.0248	0.7072	128.0000	0.4807
SgroupSW:Scondition20:DayD40	-0.0279	0.0248	-1.1240	128.0000	0.2631
SgroupSW:Scondition10:DayD42	0.0597	0.0248	2.4066	128.0000	0.0175

p values calculated using Satterthwaite d.f.

Random Effects

Group	Parameter	Std. Dev.
sample	(Intercept)	0.0000
Tank	(Intercept)	0.0000
Residual		0.0263

Annex 3 - Early exposure of striped catfish (*P. hypophthalmus*) to increased salinities could elicit conditioning hormesis in juvenile fish

```
anova(modelCl)
```

```
## Type III Analysis of Variance Table with Satterthwaite's method
##              Sum Sq Mean Sq NumDF  DenDF  F value    Pr(>F)
## Sgroup        0.00198  0.00198    1 46.274   1.0447 0.3120370
## Scondition    0.85635  0.42818    2 49.233 226.4935 < 2.2e-16 ***
## Day           0.03839  0.01919    2 75.144  10.1525 0.0001251 ***
## Sgroup:Scondition 0.00018 0.00009    2 49.233   0.0473 0.9538808
## Sgroup:Day     0.00200  0.00100    2 75.144   0.5287 0.5915319
## Scondition:Day 0.03940  0.01313    3 75.144   6.9466 0.0003448 ***
## Sgroup:Scondition:Day 0.00301 0.00100    3 75.144   0.5315 0.6620685
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Observations	144
Dependent variable	Cl
Type	Mixed effects linear regression

AIC	-363.9940
BIC	-307.5676
Pseudo-R ² (fixed effects)	0.7756
Pseudo-R ² (total)	0.7796

Fixed Effects

	Est.	S.E.	t val.	d.f.	p
(Intercept)	2.0348	0.0146	139.1320	127.9115	0.0000
SgroupSW	-0.0022	0.0207	-0.1063	127.9115	0.9155
Scondition10	0.0636	0.0207	3.0756	127.9115	0.0026
Scondition20	0.2358	0.0207	11.3984	127.9115	0.0000
DayD40	0.0471	0.0205	2.2967	75.1443	0.0244
DayD42	0.0269	0.0205	1.3109	75.1443	0.1939
SgroupSW:Scondition10	-0.0250	0.0292	-0.8555	127.9115	0.3938
SgroupSW:Scondition20	-0.0219	0.0292	-0.7481	127.9115	0.4558
SgroupSW:DayD40	-0.0152	0.0290	-0.5229	75.1443	0.6026
SgroupSW:DayD42	-0.0015	0.0290	-0.0521	75.1443	0.9586
Scondition10:DayD40	-0.0676	0.0290	-2.3316	75.1443	0.0224
Scondition20:DayD40	-0.0681	0.0290	-2.3509	75.1443	0.0214
Scondition10:DayD42	0.0249	0.0290	0.8582	75.1443	0.3935
SgroupSW:Scondition10:DayD40	0.0479	0.0410	1.1679	75.1443	0.2466
SgroupSW:Scondition20:DayD40	0.0342	0.0410	0.8353	75.1443	0.4062
SgroupSW:Scondition10:DayD42	0.0375	0.0410	0.9152	75.1443	0.3630

p values calculated using Satterthwaite d.f.

Random Effects

Group	Parameter	Std. Dev.
sample	(Intercept)	0.0059
Tank	(Intercept)	0.0000
Residual		0.0435

Annex 3 - Early exposure of striped catfish (*P. hypophthalmus*) to increased salinities could elicit conditioning hormesis in juvenile fish

```
anova(modelGlucose)
```

```
## Type III Analysis of Variance Table with Satterthwaite's method
##              Sum Sq Mean Sq NumDF  DenDF F value    Pr(>F)
## Sgroup        0.01527  0.01527    1 34.744   1.9227 0.1743901
## Scondition    0.14084  0.07042    2 37.098   8.8687 0.0007113 ***
## Day           0.69218  0.34609    2 61.179  43.5873 1.707e-12 ***
## Sgroup:Scondition 0.00288  0.00144    2 37.098   0.1817 0.8346138
## Sgroup:Day     0.05895  0.02948    2 61.179   3.7123 0.0300852 *
## Scondition:Day 0.34447  0.11482    3 61.284  14.4612 3.132e-07 ***
## Sgroup:Scondition:Day 0.01634  0.00545    3 61.284   0.6859 0.5640947
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Observations	143
Dependent variable	Glucose
Type	Mixed effects linear regression

AIC	-179.9082
BIC	-123.6142
Pseudo-R ² (fixed effects)	0.5241
Pseudo-R ² (total)	0.5271

Fixed Effects

	Est.	S.E.	t val.	d.f.	p
(Intercept)	1.8430	0.0298	61.8558	126.9835	0.0000
SgroupSW	-0.0747	0.0421	-1.7727	126.9835	0.0787
Scondition10	0.0197	0.0421	0.4666	126.9835	0.6416
Scondition20	0.0788	0.0421	1.8711	126.9835	0.0636
DayD40	-0.1119	0.0420	-2.6629	60.8498	0.0099
DayD42	-0.0764	0.0420	-1.8197	60.8498	0.0737
SgroupSW:Scondition10	0.0294	0.0596	0.4940	126.9835	0.6222
SgroupSW:Scondition20	-0.0379	0.0596	-0.6366	126.9835	0.5255
SgroupSW:DayD40	0.0943	0.0594	1.5871	60.8498	0.1177
SgroupSW:DayD42	0.0777	0.0594	1.3080	60.8498	0.1958
Scondition10:DayD40	0.0067	0.0594	0.1128	60.8498	0.9105
Scondition20:DayD40	-0.2682	0.0603	-4.4450	62.8110	0.0000
Scondition10:DayD42	-0.0453	0.0594	-0.7618	60.8498	0.4491
SgroupSW:Scondition10:DayD40	-0.0759	0.0840	-0.9040	60.8498	0.3696
SgroupSW:Scondition20:DayD40	0.0263	0.0847	0.3109	61.8376	0.7569
SgroupSW:Scondition10:DayD42	0.0122	0.0840	0.1452	60.8498	0.8850

p values calculated using Satterthwaite d.f.

Random Effects

Group	Parameter	Std. Dev.
sample	(Intercept)	0.0071
Tank	(Intercept)	0.0000
Residual		0.0891

Annex 3 - Early exposure of striped catfish (*P. hypophthalmus*) to increased salinities could elicit conditioning hormesis in juvenile fish

```
anova(modelHematocrit)
```

```
## Type III Analysis of Variance Table with Satterthwaite's method
##              Sum Sq Mean Sq NumDF DenDF F value Pr(>F)
## Sgroup        0.01417  0.014167    1  12.191  3.2803  0.09481 .
## Scondition    0.53046  0.265228    2  12.908 61.4106 2.543e-07 ***
## Day           0.16809  0.084044    2 115.779 19.4594 5.180e-08 ***
## Sgroup:Scondition 0.00898  0.004488    2  12.908  1.0390  0.38159
## Sgroup:Day     0.02093  0.010467    2 115.779  2.4236  0.09309 .
## Scondition:Day 0.35131  0.117103    3 115.779 27.1139 2.350e-13 ***
## Sgroup:Scondition:Day 0.03031  0.010104    3 115.779  2.3395  0.07707 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Observations	144
Dependent variable	Hematocrit
Type	Mixed effects linear regression

AIC	-256.1834
BIC	-199.7569
Pseudo-R ² (fixed effects)	0.6632
Pseudo-R ² (total)	0.6807

Fixed Effects

	Est.	S.E.	t val.	d.f.	p
(Intercept)	1.5781	0.0236	66.7662	47.9846	0.0000
SgroupSW	-0.0251	0.0334	-0.7504	47.9846	0.4567
Scondition10	-0.1167	0.0334	-3.4900	47.9846	0.0010
Scondition20	-0.0488	0.0334	-1.4599	47.9846	0.1508
DayD40	0.1174	0.0310	3.7905	115.7794	0.0002
DayD42	0.0177	0.0310	0.5699	115.7794	0.5699
SgroupSW:Scondition10	0.0533	0.0473	1.1280	47.9846	0.2649
SgroupSW:Scondition20	-0.0684	0.0473	-1.4472	47.9846	0.1543
SgroupSW:DayD40	0.0257	0.0438	0.5873	115.7794	0.5581
SgroupSW:DayD42	0.0135	0.0438	0.3091	115.7794	0.7578
Scondition10:DayD40	0.0640	0.0438	1.4607	115.7794	0.1468
Scondition20:DayD40	-0.2578	0.0438	-5.8838	115.7794	0.0000
Scondition10:DayD42	0.0855	0.0438	1.9510	115.7794	0.0535
SgroupSW:Scondition10:DayD40	-0.0468	0.0620	-0.7548	115.7794	0.4519
SgroupSW:Scondition20:DayD40	0.0776	0.0620	1.2528	115.7794	0.2128
SgroupSW:Scondition10:DayD42	-0.1148	0.0620	-1.8536	115.7794	0.0663

p values calculated using Satterthwaite d.f.

Random Effects

Group	Parameter	Std. Dev.
sample	(Intercept)	0.0000
Tank	(Intercept)	0.0154
Residual		0.0657

Annex 3 - Early exposure of striped catfish (*P. hypophthalmus*) to increased salinities could elicit conditioning hormesis in juvenile fish

```
anova(modelWBC)
```

```
## Type III Analysis of Variance Table with Satterthwaite's method
##              Sum Sq Mean Sq NumDF DenDF F value    Pr(>F)
## Sgroup        0.7132  0.71323     1   128  16.3544 9.020e-05 ***
## Scondition    1.1113  0.55565     2   128  12.7410 8.990e-06 ***
## Day           3.6646  1.83231     2   128  42.0149 9.377e-15 ***
## Sgroup:Scondition 0.3073  0.15365     2   128   3.5232  0.03240 *
## Sgroup:Day     0.0944  0.04718     2   128   1.0818  0.34206
## Scondition:Day 0.5072  0.16906     3   128   3.8766  0.01082 *
## Sgroup:Scondition:Day 0.0265  0.00885     3   128   0.2029  0.89425
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Observations	144
Dependent variable	WBC
Type	Mixed effects linear regression

AIC	35.4506
BIC	91.8771
Pseudo-R ² (fixed effects)	0.5061
Pseudo-R ² (total)	0.5061

Fixed Effects

	Est.	S.E.	t val.	d.f.	p
(Intercept)	4.8994	0.0696	70.3825	128.0000	0.0000
SgroupSW	-0.1882	0.0984	-1.9121	128.0000	0.0581
Scondition10	-0.2157	0.0984	-2.1913	128.0000	0.0302
Scondition20	0.0741	0.0984	0.7530	128.0000	0.4528
DayD40	-0.2399	0.0984	-2.4370	128.0000	0.0162
DayD42	0.1668	0.0984	1.6941	128.0000	0.0927
SgroupSW:Scondition10	0.0999	0.1392	0.7175	128.0000	0.4744
SgroupSW:Scondition20	0.1948	0.1392	1.3989	128.0000	0.1643
SgroupSW:DayD40	-0.0701	0.1392	-0.5034	128.0000	0.6156
SgroupSW:DayD42	-0.1302	0.1392	-0.9355	128.0000	0.3513
Scondition10:DayD40	0.0623	0.1392	0.4472	128.0000	0.6555
Scondition20:DayD40	-0.2892	0.1392	-2.0775	128.0000	0.0398
Scondition10:DayD42	-0.0512	0.1392	-0.3676	128.0000	0.7137
SgroupSW:Scondition10:DayD40	0.0228	0.1969	0.1156	128.0000	0.9082
SgroupSW:Scondition20:DayD40	0.1299	0.1969	0.6598	128.0000	0.5106
SgroupSW:Scondition10:DayD42	-0.0457	0.1969	-0.2321	128.0000	0.8168

p values calculated using Satterthwaite d.f.

Random Effects

Group	Parameter	Std. Dev.
sample	(Intercept)	0.0000
Tank	(Intercept)	0.0000
Residual		0.2088

Annex 3 - Early exposure of striped catfish (*P. hypophthalmus*) to increased salinities could elicit conditioning hormesis in juvenile fish

```
anova(modelRBC)
```

```
## Type III Analysis of Variance Table with Satterthwaite's method
##              Sum Sq Mean Sq NumDF DenDF F value Pr(>F)
## Sgroup      0.00349 0.003494    1  14.187  0.1407 0.713140
## Scondition  0.37573 0.187867    2  15.047  7.5650 0.005324 **
## Day         0.03957 0.019783    2 117.373  0.7966 0.453270
## Sgroup:Scondition 0.02287 0.011437    2  15.047  0.4606 0.639540
## Sgroup:Day   0.06024 0.030121    2 117.373  1.2129 0.301028
## Scondition:Day 0.39139 0.130462    3 117.373  5.2534 0.001949 **
## Sgroup:Scondition:Day 0.05097 0.016991    3 117.373  0.6842 0.563425
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Observations	144
Dependent variable	RBC
Type	Mixed effects linear regression

AIC	-34.4345
BIC	21.9920
Pseudo-R ² (fixed effects)	0.2245
Pseudo-R ² (total)	0.2435

Fixed Effects

	Est.	S.E.	t val.	d.f.	p
(Intercept)	6.2339	0.0545	114.4412	60.9184	0.0000
SgroupSW	0.0434	0.0770	0.5631	60.9184	0.5754
Scondition10	-0.0009	0.0770	-0.0114	60.9184	0.9910
Scondition20	0.0165	0.0770	0.2145	60.9184	0.8309
DayD40	0.0339	0.0743	0.4561	117.3728	0.6491
DayD42	0.1279	0.0743	1.7216	117.3728	0.0878
SgroupSW:Scondition10	-0.0678	0.1089	-0.6227	60.9184	0.5358
SgroupSW:Scondition20	-0.0576	0.1089	-0.5284	60.9184	0.5991
SgroupSW:DayD40	0.0275	0.1051	0.2614	117.3728	0.7942
SgroupSW:DayD42	-0.1467	0.1051	-1.3965	117.3728	0.1652
Scondition10:DayD40	0.0241	0.1051	0.2292	117.3728	0.8191
Scondition20:DayD40	-0.2874	0.1051	-2.7353	117.3728	0.0072
Scondition10:DayD42	-0.1353	0.1051	-1.2882	117.3728	0.2002
SgroupSW:Scondition10:DayD40	-0.0644	0.1486	-0.4336	117.3728	0.6653
SgroupSW:Scondition20:DayD40	0.0821	0.1486	0.5528	117.3728	0.5815
SgroupSW:Scondition10:DayD42	0.1012	0.1486	0.6810	117.3728	0.4972

p values calculated using Satterthwaite d.f.

Random Effects

Group	Parameter	Std. Dev.
sample	(Intercept)	0.0000
Tank	(Intercept)	0.0250
Residual		0.1576

Annex 2 - Early exposure of striped catfish (*P. hypophthalmus*) to increased salinities could elicit conditioning hormesis in juvenile fish.