Supplementary File 6: statistics

Contents

This supplementary file contains summaries of the fitted models and corresponding fitted model coefficients and random effects. In each model summary table the number of parameters (k), log-likelihood (ll), AIC, or AICc (aic), difference between the minimal AIC/AICc and each AIC/AICc (deltaAIC), and model weights based on AIC/AICc (weights) are provided. For all tables maternal age is abbreviated to mAgeDays. Where rows contain NAs, the model in question produced a singular fit indicating overfitting. Model coefficients are only shown for models with weight > 0.

For model coefficients, the model number (modelNumber) corresponds to the model number provided in the model summary tables. For fixed effects, the fitted value (est) is given wtih the lower and upper 95% confidence intervals.

All tables are in ascending order of AIC/AICc.

Probability of spontaneous abortion

Tables 1 to 3 provide a summary of the fitted models for the probability of abortion for the control, mating delay and nutritional stress treatments. AIC was used to assess model fits for the probability of abortion. For all treatments, including a random intercept and slope produced a singular fit and was therefore omitted from comparison.

Tables 4 to 6 provide the corresponding coefficients on a logit scale, and 95% confidence intervals, for models in tables 1 to 3. The random effect variances for the models including a random intercept were: control - 0.636, mating delay - 0.912, nutritional stress - 0.815.

Model fits

Table 1: Control treatment: model fits for the probability of abortion

modelNumber	model	k	ll	aic	deltaAIC	weights
2	abortion ~ mAge	2	-152.9947	309.9893	0.000	0.711
1	abortion ~ mAge + (1 | adults_id)	3	-152.8966	311.7933	1.804	0.289
3	abortion ~ 1	1	-195.7711	393.5423	83.553	0.000

Table 2: Mating delay treatment: model fits for the probability of abortion

modelNumber	model	k	ll	aic	deltaAIC	weights
2	abortion ~ mAge	2	-75.48788	154.9758	0.000	0.631
1	abortion ~ mAge + (1 | adults_id)	3	-75.02532	156.0506	1.075	0.368
3	abortion ~ 1	1	-83.00434	168.0087	13.033	0.001

Table 3: Nutritional stress treatment: model fits for the probability of abortion

modelNumber	model	k	ll	aic	deltaAIC	weights
1	abortion ~ mAge + (1 | adults_id)	3	-250.7058	507.4115	0.000	0.985
2	abortion ~ mAge	2	-255.9003	515.8006	8.389	0.015
3	abortion ~ 1	1	-284.8791	571.7582	64.347	0.000

Model coefficients - fixed effects

Table 4: Control treatment: model coefficients for the probability of abortion

modelNumber	parameter	lower	est	upper
3	(Intercept)	-8.7038051	-7.0854080	-5.7065121
2	(Intercept)	-9.0606081	-7.2346367	-5.7392719
3	mAge	0.0523649	0.0699584	0.0898972
2	mAge	0.0527920	0.0713227	0.0929656

Table 5: Mating delay treatment: model coefficients for the probability of abortion

modelNumber	parameter	lower	est	upper
3	(Intercept)	-8.8583290	-6.3288005	-4.2279430
2	(Intercept)	-9.9686010	-6.8719679	-4.4756011
3	mAge	0.0246492	0.0519074	0.0827728
2	mAge	0.0261099	0.0547138	0.0884915

Table 6: Nutritional stress treatment: model coefficients for the probability of abortion

modelNumber	parameter	lower	est	upper
2	(Intercept)	-4.7578086	-3.8165010	-2.9938055
3	(Intercept)	-3.8925576	-3.2016317	-2.5585932
2	mAge	0.0333965	0.0456664	0.0592392
3	mAge	0.0271161	0.0371226	0.0476259

Offspring wet weight

Tables 7 to 9 provide a summary of the fitted models for offspring wet weight as a function of maternal age for each treatment. AICc was used for comparison. Tables 10 to 12 provide the corresponding coefficients for model summarised in Tables 7 to 9. Tables 13 to 15 summarise the random effects variance for relevant models in Tables 7 to 9.

Model fits

Table 7: Control treatment: model fits for offspring wet weight

modelNumber	fixedEffects	randomEffects	k	ll	aic	deltaAIC	weights
4	wet_weight ~ mAgeDays + I(mAgeDays^2)	~1 + mAgeDays + I(mAgeDays^2) | adults_id	9	-1383.233	2786.870	0.000	0.719
5	wet_weight ~ mAgeDays + I(mAgeDays^2)	~1 | adults_id	4	-1389.723	2789.556	2.686	0.188
2	wet_weight ~ mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1 | adults_id	5	-1389.481	2791.114	4.245	0.086
1	wet_weight ~ mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1 + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3) | adults_id	14	-1382.620	2796.130	9.260	0.007
6	wet_weight ~ mAgeDays + I(mAgeDays^2)	NA	3	-1438.021	2884.115	97.245	0.000
3	wet_weight ~ mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	NA	4	-1437.927	2885.963	99.093	0.000
7	wet_weight ~ log(mAgeDays)	~1 + log(mAgeDays) | adults_id	5	-1452.741	2917.635	130.765	0.000
8	wet_weight ~ log(mAgeDays)	~1 | adults_id	3	-1454.931	2917.935	131.065	0.000
9	wet_weight ~ log(mAgeDays)	NA	2	-1482.302	2970.647	183.778	0.000
10	wet_weight ~ mAgeDays	~1 + mAgeDays | adults_id	5	-1486.294	2984.742	197.872	0.000
11	wet_weight ~ mAgeDays	~1 | adults_id	3	-1488.651	2985.376	198.506	0.000
12	wet_weight ~ mAgeDays	NA	2	-1507.904	3021.852	234.982	0.000
13	wet_weight ~ 1	~1 | adults_id	2	-1554.678	3115.399	328.530	0.000
14	wet_weight ~ 1	NA	1	-1563.437	3130.896	344.026	0.000

Table 8: Mating delay treatment: model fits for offspring wet weight

modelNumber	fixedEffects	randomEffects	k	ll	aic	deltaAIC	weights
4	wet_weight ~ mAgeDays + I(mAgeDays^2)	~1 + mAgeDays + I(mAgeDays^2) | adults_id	9	-815.1663	1651.102	0.000	0.562
5	wet_weight ~ mAgeDays + I(mAgeDays^2)	~1 | adults_id	4	-821.1727	1652.551	1.450	0.272
2	wet_weight ~ mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1 | adults_id	5	-820.8857	1654.061	2.959	0.128
1	wet_weight ~ mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1 + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3) | adults_id	14	-812.3853	1656.479	5.377	0.038
8	wet_weight ~ log(mAgeDays)	~1 | adults_id	3	-836.4380	1681.013	29.911	0.000
13	wet_weight ~ 1	~1 | adults_id	2	-837.6119	1681.306	30.204	0.000
11	wet_weight ~ mAgeDays	~1 | adults_id	3	-837.2765	1682.690	31.588	0.000
7	wet_weight ~ log(mAgeDays)	~1 + log(mAgeDays) | adults_id	5	-835.7762	1683.842	32.740	0.000
10	wet_weight ~ mAgeDays	~1 + mAgeDays | adults_id	5	-836.4359	1685.161	34.060	0.000
6	wet_weight ~ mAgeDays + I(mAgeDays^2)	NA	3	-867.0550	1742.247	91.145	0.000
3	wet_weight ~ mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	NA	4	-866.7593	1743.725	92.623	0.000
14	wet_weight ~ 1	NA	1	-876.4577	1756.956	105.854	0.000
9	wet_weight ~ log(mAgeDays)	NA	2	-876.2881	1758.658	107.556	0.000
12	wet_weight ~ mAgeDays	NA	2	-876.4572	1758.996	107.895	0.000

Table 9: Nutritional stress treatment: model fits for offspring wet weight

modelNumber	fixedEffects	randomEffects	k	ll	aic	deltaAIC	weights
4	wet_weight ~ mAgeDays + I(mAgeDays^2)	~1 + mAgeDays + I(mAgeDays^2) | adults_id	9	-952.9929	1926.622	0.000	0.866
2	wet_weight ~ mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1 | adults_id	5	-959.5027	1931.245	4.624	0.086
5	wet_weight ~ mAgeDays + I(mAgeDays^2)	~1 | adults_id	4	-961.3586	1932.888	6.266	0.038
1	wet_weight ~ mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1 + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3) | adults_id	14	-952.0031	1935.414	8.792	0.011
3	wet_weight ~ mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	NA	4	-973.8493	1957.870	31.248	0.000
6	wet_weight ~ mAgeDays + I(mAgeDays^2)	NA	3	-975.2321	1958.578	31.956	0.000
7	wet_weight ~ log(mAgeDays)	~1 + log(mAgeDays) | adults_id	5	-980.8925	1974.025	47.403	0.000
8	wet_weight ~ log(mAgeDays)	~1 | adults_id	3	-990.1260	1988.366	61.744	0.000
9	wet_weight ~ log(mAgeDays)	NA	2	-997.5564	2001.181	74.559	0.000
10	wet_weight ~ mAgeDays	~1 + mAgeDays | adults_id	5	-997.2885	2006.817	80.195	0.000
11	wet_weight ~ mAgeDays	~1 | adults_id	3	-1005.7463	2019.606	92.985	0.000
12	wet_weight ~ mAgeDays	NA	2	-1010.0768	2026.222	99.600	0.000
13	wet_weight ~ 1	~1 | adults_id	2	-1030.7230	2067.514	140.892	0.000
14	wet_weight ~ 1	NA	1	-1031.8905	2067.815	141.193	0.000

Model coefficients - fixed effects

Table 10: Control treatment: model coefficients for offspring wet weight

modelNumber	parameter	lower	est.	upper
4	(Intercept)	17.4679934	18.9106026	20.3532118
5	(Intercept)	17.5750058	19.0143087	20.4536117
2	(Intercept)	14.6826195	17.9667105	21.2508015
1	(Intercept)	14.0963096	17.2859941	20.4756785
4	I(mAgeDays^2)	-0.0045004	-0.0040136	-0.0035267
5	I(mAgeDays^2)	-0.0044774	-0.0039816	-0.0034859
2	I(mAgeDays^2)	-0.0094721	-0.0054113	-0.0013505
1	I(mAgeDays^2)	-0.0101375	-0.0062240	-0.0023104
2	I(mAgeDays^3)	-0.0000156	0.0000086	0.0000327
1	I(mAgeDays^3)	-0.0000101	0.0000133	0.0000367
4	mAgeDays	0.4660379	0.5199715	0.5739052
5	mAgeDays	0.4611285	0.5161971	0.5712658
2	mAgeDays	0.3782118	0.5880180	0.7978243
1	mAgeDays	0.4289693	0.6308424	0.8327154

Table 11: Mating delay treatment: model coefficients for offspring wet weight

modelNumber	parameter	lower	est.	upper
4	(Intercept)	9.9051496	14.8826066	19.8600636
5	(Intercept)	11.3777093	16.7241957	22.0706821
2	(Intercept)	4.3985659	23.9653937	43.5322215
1	(Intercept)	2.1611128	20.1311250	38.1011373
4	I(mAgeDays^2)	-0.0054297	-0.0042162	-0.0030026
5	I(mAgeDays^2)	-0.0050566	-0.0037859	-0.0025152
2	I(mAgeDays^2)	-0.0130428	0.0019674	0.0169775
1	I(mAgeDays^2)	-0.0138929	-0.0000231	0.0138466
2	I(mAgeDays^3)	-0.0001045	-0.0000290	0.0000464
1	I(mAgeDays^3)	-0.0000916	-0.0000213	0.0000490
4	mAgeDays	0.4058769	0.5637425	0.7216081
5	mAgeDays	0.3387103	0.5069161	0.6751220
2	mAgeDays	-0.8142235	0.1440182	1.1022599
1	mAgeDays	-0.5813208	0.3002146	1.1817500

Table 12: Nutritional stress treatment: model coefficients for offspring wet weight

modelNumber	parameter	lower	est.	upper
4	(Intercept)	12.8207229	14.8028830	16.7850431
2	(Intercept)	5.8585543	10.5080720	15.1575897
5	(Intercept)	12.5409859	14.6149995	16.6890131
1	(Intercept)	7.4033021	11.9024067	16.4015113
4	I(mAgeDays^2)	-0.0047686	-0.0040088	-0.0032489
2	I(mAgeDays^2)	-0.0157184	-0.0097680	-0.0038176
5	I(mAgeDays^2)	-0.0047229	-0.0039669	-0.0032109
1	I(mAgeDays^2)	-0.0140623	-0.0081861	-0.0023100
2	I(mAgeDays^3)	-0.0000006	0.0000350	0.0000707
1	I(mAgeDays^3)	-0.0000101	0.0000255	0.0000611
4	mAgeDays	0.4199270	0.5017818	0.5836366
2	mAgeDays	0.4868378	0.7902830	1.0937283
5	mAgeDays	0.4200007	0.5029632	0.5859256
1	mAgeDays	0.4097050	0.7064181	1.0031312

Random effects

Table 13: Control treatment: random effects for offspring wet weight

modelNumber	parameter	Variance	StdDev
4	(Intercept)	7.307	2.703
5	(Intercept)	3.790	1.947
2	(Intercept)	3.797	1.949
1	(Intercept)	8.405	2.899
4	I(mAgeDays^2)	0.000	0.000
1	I(mAgeDays^2)	0.000	0.000
1	I(mAgeDays^3)	0.000	0.000
4	mAgeDays	0.002	0.041
1	mAgeDays	0.002	0.043
4	Residual	6.047	2.459
5	Residual	6.888	2.624
2	Residual	6.879	2.623
1	Residual	6.011	2.452

Table 14: Mating delay treatment: random effects for offspring wet weight

modelNumber	parameter	Variance	StdDev
4	(Intercept)	11.820	3.438
5	(Intercept)	10.488	3.238
2	(Intercept)	10.438	3.231
1	(Intercept)	28.559	5.344
4	I(mAgeDays^2)	0.000	0.001
1	I(mAgeDays^2)	0.000	0.001
1	I(mAgeDays^3)	0.000	0.000
4	mAgeDays	0.005	0.072
1	mAgeDays	0.016	0.127
4	Residual	7.763	2.786
5	Residual	10.023	3.166
2	Residual	10.010	3.164
1	Residual	7.167	2.677

Table 15: Nutritional stress treatment: random effects for offspring wet weight

modelNumber	parameter	Variance	StdDev
4	(Intercept)	2.379	1.542
2	(Intercept)	3.515	1.875
5	(Intercept)	3.463	1.861
1	(Intercept)	2.600	1.613
4	I(mAgeDays^2)	0.000	0.000
1	I(mAgeDays^2)	0.000	0.000
1	I(mAgeDays^3)	0.000	0.000
4	mAgeDays	0.003	0.052
1	mAgeDays	0.003	0.052
4	Residual	9.385	3.064
2	Residual	10.288	3.208
5	Residual	10.437	3.231
1	Residual	9.340	3.056

Offspring starvation tolerance

Tables 16 to 18 provide a summary of the fitted models for offspring starvation tolerance for each treatment. Tables 19 - 21 provide coefficients for each of the models in Tables 16 to 18. Tables 22 - 24 show random effects variance for each of the relevant models in Tables 16 to 18.

Model fits

Table 16: Control treatment: model fits for days to starvation

modelNumber	fixedEffects	randomEffects	k	ll	aic	deltaAIC	weights
11	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2)	NA	5	-634.2353	1280.723	0.000	0.298
9	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2)	~1 | adults_id	6	-633.8266	1281.991	1.268	0.158
5	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	NA	6	-633.9019	1282.141	1.418	0.147
26	daysSurv ~ wet_weight + sex	NA	3	-637.3529	1282.825	2.102	0.104
3	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1 | adults_id	7	-633.5514	1283.538	2.815	0.073
25	daysSurv ~ wet_weight + sex	~1 | adults_id	4	-636.7956	1283.771	3.048	0.065
17	daysSurv ~ wet_weight + sex + log(mAgeDays)	NA	4	-637.2216	1284.623	3.900	0.042
23	daysSurv ~ wet_weight + sex + mAgeDays	NA	4	-637.3510	1284.882	4.159	0.037
15	daysSurv ~ wet_weight + sex + log(mAgeDays)	~1 | adults_id	5	-636.6694	1285.591	4.868	0.026
21	daysSurv ~ wet_weight + sex + mAgeDays	~1 | adults_id	5	-636.7937	1285.840	5.117	0.023
13	daysSurv ~ wet_weight + sex + log(mAgeDays)	~1 + log(mAgeDays) | adults_id	7	-635.1371	1286.709	5.986	0.015
19	daysSurv ~ wet_weight + sex + mAgeDays	~1 + mAgeDays | adults_id	7	-635.5085	1287.452	6.729	0.010
7	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2)	~1 + mAgeDays + I(mAgeDays^2) | adults_id	11	-632.8803	1290.715	9.992	0.002
1	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1 + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3) | adults_id	16	-632.6782	1301.257	20.534	0.000
12	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2)	NA	4	-648.6399	1307.459	26.737	0.000
6	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	NA	5	-647.9477	1308.148	27.425	0.000
10	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2)	~1 | adults_id	5	-648.0569	1308.366	27.643	0.000
4	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1 | adults_id	6	-647.4727	1309.283	28.560	0.000
28	daysSurv ~ wet_weight	NA	2	-652.1084	1310.288	29.565	0.000
27	daysSurv ~ wet_weight	~1 | adults_id	3	-651.2706	1310.661	29.938	0.000
18	daysSurv ~ wet_weight + log(mAgeDays)	NA	3	-651.5685	1311.256	30.534	0.000
16	daysSurv ~ wet_weight + log(mAgeDays)	~1 | adults_id	4	-650.7633	1311.706	30.983	0.000
24	daysSurv ~ wet_weight + mAgeDays	NA	3	-651.9244	1311.968	31.245	0.000
22	daysSurv ~ wet_weight + mAgeDays	~1 | adults_id	4	-651.0955	1312.371	31.648	0.000
14	daysSurv ~ wet_weight + log(mAgeDays)	~1 + log(mAgeDays) | adults_id	6	-649.4043	1313.146	32.423	0.000
20	daysSurv ~ wet_weight + mAgeDays	~1 + mAgeDays | adults_id	6	-649.9148	1314.167	33.444	0.000
8	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2)	~1 + mAgeDays + I(mAgeDays^2) | adults_id	10	-647.2724	1317.350	36.627	0.000
2	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1 + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3) | adults_id	15	-646.7862	1327.257	46.534	0.000
30	daysSurv ~ 1	NA	1	-706.7387	1417.513	136.790	0.000
29	daysSurv ~ 1	~1 | adults_id	2	-706.7413	1419.554	138.831	0.000

Table 17: Mating delay treatment: model fits for days to starvation

modelNumber	fixedEffects	randomEffects	k	ll	aic	deltaAIC	weights
11	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2)	NA	5	-349.9823	712.4391	0.000	0.212
26	daysSurv ~ wet_weight + sex	NA	3	-352.5109	713.2454	0.806	0.142
23	daysSurv ~ wet_weight + sex + mAgeDays	NA	4	-351.6664	713.6698	1.231	0.115
5	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	NA	6	-349.6053	713.8471	1.408	0.105
17	daysSurv ~ wet_weight + sex + log(mAgeDays)	NA	4	-351.9413	714.2196	1.781	0.087
9	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2)	~1	adults_id	6	-349.8128	714.2619	1.823	0.085
25	daysSurv ~ wet_weight + sex	~1	adults_id	4	-352.2751	714.8872	2.448	0.062
21	daysSurv ~ wet_weight + sex + mAgeDays	~1	adults_id	5	-351.4454	715.3653	2.926	0.049
3	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1	adults_id	7	-349.4611	715.7451	3.306	0.041
15	daysSurv ~ wet_weight + sex + log(mAgeDays)	~1	adults_id	5	-351.7134	715.9013	3.462	0.038
13	daysSurv ~ wet_weight + sex + log(mAgeDays)	~1 + log(mAgeDays)	adults_id	7	-350.7266	718.2761	5.837	0.011
19	daysSurv ~ wet_weight + sex + mAgeDays	~1 + mAgeDays	adults_id	7	-350.7374	718.2977	5.859	0.011
12	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2)	NA	4	-354.3030	718.9430	6.504	0.008
24	daysSurv ~ wet_weight + mAgeDays	NA	3	-355.5805	719.3845	6.945	0.007
18	daysSurv ~ wet_weight + log(mAgeDays)	NA	3	-355.9122	720.0478	7.609	0.005
6	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	NA	5	-353.8588	720.1922	7.753	0.004
28	daysSurv ~ wet_weight	NA	2	-357.1036	720.3405	7.901	0.004
10	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2)	~1	adults_id	5	-354.2071	720.8887	8.450	0.003
22	daysSurv ~ wet_weight + mAgeDays	~1	adults_id	4	-355.4522	721.2415	8.802	0.003
16	daysSurv ~ wet_weight + log(mAgeDays)	~1	adults_id	4	-355.7791	721.8953	9.456	0.002
4	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1	adults_id	6	-353.7707	722.1778	9.739	0.002
27	daysSurv ~ wet_weight	~1	adults_id	3	-356.9777	722.1789	9.740	0.002
20	daysSurv ~ wet_weight + mAgeDays	~1 + mAgeDays	adults_id	6	-354.8058	724.2480	11.809	0.001
14	daysSurv ~ wet_weight + log(mAgeDays)	~1 + log(mAgeDays)	adults_id	6	-354.8700	724.3764	11.937	0.001
8	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2)	~1 + mAgeDays + I(mAgeDays^2)	adults_id	10	-353.1744	729.8837	17.445	0.000
30	daysSurv ~ 1	NA	1	-371.6369	747.3401	34.901	0.000
29	daysSurv ~ 1	~1	adults_id	2	-371.4265	748.9863	36.547	0.000
1	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1 + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	adults_id	NA	NA	NA	NA	NA
2	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1 + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	adults_id	NA	NA	NA	NA	NA
7	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2)	~1 + mAgeDays + I(mAgeDays^2)	adults_id	NA	NA	NA	NA	NA

Table 18: Nutritional stress treatment: model fits for days to starvation

modelNumber	fixedEffects	randomEffects	k	ll	aic	deltaAIC	weights
3	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1 | adults_id	7	-355.6970	728.1033	0.000	0.705
9	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2)	~1 | adults_id	6	-357.9570	730.4630	2.360	0.217
5	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	NA	6	-359.7647	734.0784	5.975	0.036
11	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2)	NA	5	-361.4172	735.2442	7.141	0.020
4	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1 | adults_id	6	-360.9906	736.5303	8.427	0.010
7	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2)	~1 + mAgeDays + I(mAgeDays^2) | adults_id	11	-356.2152	737.9983	9.895	0.005
10	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2)	~1 | adults_id	5	-362.8622	738.1341	10.031	0.005
6	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	NA	5	-364.4633	741.3364	13.233	0.001
12	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2)	NA	4	-365.8965	742.0844	13.981	0.001
15	daysSurv ~ wet_weight + sex + log(mAgeDays)	~1 | adults_id	5	-365.3351	743.0799	14.977	0.000
13	daysSurv ~ wet_weight + sex + log(mAgeDays)	~1 + log(mAgeDays) | adults_id	7	-363.6791	744.0675	15.964	0.000
8	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2)	~1 + mAgeDays + I(mAgeDays^2) | adults_id	10	-360.5631	744.4461	16.343	0.000
1	daysSurv ~ wet_weight + sex + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1 + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3) | adults_id	16	-353.9732	745.1010	16.998	0.000
17	daysSurv ~ wet_weight + sex + log(mAgeDays)	NA	4	-367.9198	746.1309	18.028	0.000
21	daysSurv ~ wet_weight + sex + mAgeDays	~1 | adults_id	5	-369.1648	750.7393	22.636	0.000
19	daysSurv ~ wet_weight + sex + mAgeDays	~1 + mAgeDays | adults_id	7	-367.2367	751.1827	23.079	0.000
16	daysSurv ~ wet_weight + log(mAgeDays)	~1 | adults_id	4	-370.5902	751.4716	23.368	0.000
2	daysSurv ~ wet_weight + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3)	~1 + mAgeDays + I(mAgeDays^2) + I(mAgeDays^3) | adults_id	15	-358.5157	751.8211	23.718	0.000
14	daysSurv ~ wet_weight + log(mAgeDays)	~1 + log(mAgeDays) | adults_id	6	-368.7443	752.0376	23.934	0.000
23	daysSurv ~ wet_weight + sex + mAgeDays	NA	4	-371.5969	753.4851	25.382	0.000
18	daysSurv ~ wet_weight + log(mAgeDays)	NA	3	-372.8103	753.8139	25.711	0.000
22	daysSurv ~ wet_weight + mAgeDays	~1 | adults_id	4	-374.4406	759.1725	31.069	0.000
20	daysSurv ~ wet_weight + mAgeDays	~1 + mAgeDays | adults_id	6	-372.3514	759.2518	31.148	0.000
24	daysSurv ~ wet_weight + mAgeDays	NA	3	-376.5490	761.2912	33.188	0.000
25	daysSurv ~ wet_weight + sex	~1 | adults_id	4	-378.9896	768.2705	40.167	0.000
26	daysSurv ~ wet_weight + sex	NA	3	-381.6558	771.5048	43.401	0.000
27	daysSurv ~ wet_weight	~1 | adults_id	3	-383.4400	775.0732	46.970	0.000
28	daysSurv ~ wet_weight	NA	2	-385.9715	778.0585	49.955	0.000
30	daysSurv ~ 1	NA	1	-444.9680	893.9934	165.890	0.000
29	daysSurv ~ 1	~1 | adults_id	2	-444.5872	895.2897	167.186	0.000

Model coefficients - fixed effects

Table 19: Control treatment: model coefficients for days to starvation

lower	est.	upper	modelNumber	parameter
-0.2360982	1.2788313	2.7937608	11	(Intercept)
-0.2833972	1.2228829	2.7291630	9	(Intercept)
-0.4964206	2.1937260	4.8838725	5	(Intercept)
0.2235049	1.6892897	3.1550745	26	(Intercept)
-0.5970980	2.0505160	4.6981299	3	(Intercept)
0.0955003	1.5619548	3.0284093	25	(Intercept)
-0.2137512	1.4735598	3.1608707	17	(Intercept)
0.2074514	1.6972333	3.1870153	23	(Intercept)
-0.3096699	1.3590651	3.0278000	15	(Intercept)
0.0788939	1.5705456	3.0621973	21	(Intercept)
-0.3417072	1.3241218	2.9899508	13	(Intercept)
0.1017623	1.5887293	3.0756963	19	(Intercept)
-0.2263974	1.2741332	2.7746637	7	(Intercept)
-0.0009618	-0.0005373	-0.0001127	11	I(mAgeDays^2)
-0.0009454	-0.0005242	-0.0001030	9	I(mAgeDays^2)
-0.0023808	0.0007322	0.0038453	5	I(mAgeDays^2)
-0.0024390	0.0006212	0.0036813	3	I(mAgeDays^2)
-0.0009174	-0.0004958	-0.0000742	7	I(mAgeDays^2)
-0.0000260	-0.0000076	0.0000108	5	I(mAgeDays^3)
-0.0000250	-0.0000069	0.0000113	3	I(mAgeDays^3)
-0.3301158	0.1153917	0.5608993	17	log(mAgeDays)
-0.3293320	0.1128081	0.5549482	15	log(mAgeDays)
-0.3085071	0.1420981	0.5927032	13	log(mAgeDays)
0.0124986	0.0622780	0.1120574	11	mAgeDays
0.0113994	0.0608409	0.1102823	9	mAgeDays
-0.1646872	-0.0016349	0.1614174	5	mAgeDays
-0.1572134	0.0032180	0.1636493	3	mAgeDays
-0.0085979	0.0002776	0.0091531	23	mAgeDays
-0.0085135	0.0002768	0.0090671	21	mAgeDays
-0.0079295	0.0011131	0.0101557	19	mAgeDays
0.0086846	0.0579493	0.1072139	7	mAgeDays
-1.2831876	-0.9425398	-0.6018920	11	sexM
-1.2784405	-0.9391233	-0.5998062	9	sexM
-1.2737510	-0.9319560	-0.5901609	5	sexM
-1.2983692	-0.9576139	-0.6168587	26	sexM
-1.2698274	-0.9299041	-0.5899808	3	sexM
-1.2916969	-0.9512104	-0.6107238	25	sexM
-1.2913947	-0.9484184	-0.6054422	17	sexM
-1.2995967	-0.9565089	-0.6134210	23	sexM
-1.2845330	-0.9424171	-0.6003012	15	sexM
-1.2923744	-0.9501170	-0.6078596	21	sexM
-1.2794850	-0.9400763	-0.6006675	13	sexM
-1.2876376	-0.9474785	-0.6073194	19	sexM
-1.2780214	-0.9402115	-0.6024017	7	sexM
0.1529686	0.2074376	0.2619066	11	wet_weight
0.1551558	0.2100717	0.2649877	9	wet_weight
0.1532732	0.2077771	0.2622809	5	wet_weight

0.1989080	0.2413855	0.2838631		26	wet_weight
0.1554616	0.2102894	0.2651171		3	wet_weight
0.2026994	0.2451297	0.2875601		25	wet_weight
0.1836724	0.2342794	0.2848864		17	wet_weight
0.1926037	0.2406848	0.2887658		23	wet_weight
0.1870708	0.2379459	0.2888210		15	wet_weight
0.1962312	0.2444111	0.2925910		21	wet_weight
0.1847537	0.2357811	0.2868084		13	wet_weight
0.1943897	0.2427072	0.2910246		19	wet_weight
0.1553327	0.2104701	0.2656074		7	wet_weight

Table 20: Mating delay treatment: model coefficients for days to starvation

modelNumber	parameter	lower	est.	upper
11	(Intercept)	-0.5260436	2.8641996	6.2544428
26	(Intercept)	3.1241840	4.9004319	6.6766797
23	(Intercept)	3.4797073	5.4285613	7.3774154
5	(Intercept)	-4.2730267	7.9518848	20.1767963
17	(Intercept)	2.8952211	6.7090658	10.5229104
9	(Intercept)	-0.4571609	2.8692212	6.1956034
25	(Intercept)	3.0130420	4.8194458	6.6258495
21	(Intercept)	3.3740127	5.3356023	7.2971919
3	(Intercept)	-4.2460063	7.7600139	19.7660342
15	(Intercept)	2.8283655	6.5933167	10.3582679
13	(Intercept)	2.4022853	6.4419203	10.4815553
19	(Intercept)	3.1366164	5.1533747	7.1701330
12	(Intercept)	-0.5004477	2.9599376	6.4203228
24	(Intercept)	3.2649443	5.2457673	7.2265904
18	(Intercept)	3.2917781	7.1642974	11.0368167
6	(Intercept)	-3.8579683	8.6090243	21.0760169
28	(Intercept)	2.6951441	4.4907988	6.2864534
10	(Intercept)	-0.4576549	2.9566387	6.3709323
22	(Intercept)	3.1806654	5.1739102	7.1671549
16	(Intercept)	3.2427872	7.0830655	10.9233437
4	(Intercept)	-3.7617614	8.5339132	20.8295879
27	(Intercept)	2.6056481	4.4279002	6.2501523
20	(Intercept)	2.8594422	4.9110852	6.9627282
14	(Intercept)	2.8137503	6.9018226	10.9898950
11	I(mAgeDays^2)	-0.0015651	-0.0007506	0.0000639
5	I(mAgeDays^2)	-0.0060443	0.0032679	0.0125802
9	I(mAgeDays^2)	-0.0015351	-0.0007342	0.0000667
3	I(mAgeDays^2)	-0.0060131	0.0031233	0.0122597
12	I(mAgeDays^2)	-0.0014964	-0.0006669	0.0001626
6	I(mAgeDays^2)	-0.0057010	0.0037949	0.0132909
10	I(mAgeDays^2)	-0.0014755	-0.0006557	0.0001641
4	I(mAgeDays^2)	-0.0056135	0.0037448	0.0131030
5	I(mAgeDays^3)	-0.0000671	-0.0000203	0.0000265
3	I(mAgeDays^3)	-0.0000654	-0.0000195	0.0000265
6	I(mAgeDays^3)	-0.0000703	-0.0000225	0.0000252
4	I(mAgeDays^3)	-0.0000693	-0.0000222	0.0000249

17	log(mAgeDays)	-1.3070199	-0.4560152	0.3949895
15	log(mAgeDays)	-1.2859179	-0.4486418	0.3886344
13	log(mAgeDays)	-1.3585638	-0.4529440	0.4526758
18	log(mAgeDays)	-1.5191666	-0.6649476	0.1892714
16	log(mAgeDays)	-1.5071555	-0.6623653	0.1824249
14	log(mAgeDays)	-1.5853033	-0.6830730	0.2191574
11	mAgeDays	-0.0182354	0.0895281	0.1972916
23	mAgeDays	-0.0227279	-0.0089780	0.0047718
5	mAgeDays	-0.7571520	-0.1634014	0.4303492
9	mAgeDays	-0.0184499	0.0874254	0.1933006
21	mAgeDays	-0.0223700	-0.0088270	0.0047159
3	mAgeDays	-0.7380483	-0.1553675	0.4273133
19	mAgeDays	-0.0230497	-0.0084622	0.0061254
12	mAgeDays	-0.0343448	0.0752291	0.1848029
24	mAgeDays	-0.0259885	-0.0121717	0.0016451
6	mAgeDays	-0.8107175	-0.2055093	0.3996989
10	mAgeDays	-0.0344602	0.0737623	0.1819849
22	mAgeDays	-0.0257834	-0.0121075	0.0015684
4	mAgeDays	-0.7996507	-0.2031334	0.3933840
20	mAgeDays	-0.0266617	-0.0120201	0.0026214
11	sexM	-1.2129685	-0.7251932	-0.2374179
26	sexM	-1.2304781	-0.7465353	-0.2625925
23	sexM	-1.1838411	-0.6941414	-0.2044417
5	sexM	-1.2067241	-0.7183039	-0.2298838
17	sexM	-1.1924045	-0.7012878	-0.2101711
9	sexM	-1.2123399	-0.7305807	-0.2488215
25	sexM	-1.2343288	-0.7542930	-0.2742572
21	sexM	-1.1862006	-0.7014763	-0.2167519
3	sexM	-1.2036453	-0.7223165	-0.2409877
15	sexM	-1.1948105	-0.7087223	-0.2226341
13	sexM	-1.1994560	-0.7194153	-0.2393746
19	sexM	-1.1984782	-0.7204715	-0.2424647
11	wet_weight	0.0882362	0.1433952	0.1985542
26	wet_weight	0.1016785	0.1554866	0.2092946
23	wet_weight	0.1024635	0.1561864	0.2099093
5	wet_weight	0.0858981	0.1413101	0.1967221
17	wet_weight	0.1031271	0.1569930	0.2108590
9	wet_weight	0.0894921	0.1452426	0.2009931
25	wet_weight	0.1034284	0.1581085	0.2127887
21	wet_weight	0.1044485	0.1588558	0.2132632
3	wet_weight	0.0872217	0.1430168	0.1988120
15	wet_weight	0.1051507	0.1597308	0.2143109
13	wet_weight	0.1109770	0.1653316	0.2196862
19	wet_weight	0.1089833	0.1642828	0.2195824
12	wet_weight	0.0888965	0.1451933	0.2014901
24	wet_weight	0.1018212	0.1565447	0.2112682
18	wet_weight	0.1029096	0.1577934	0.2126772
6	wet_weight	0.0863218	0.1428588	0.1993957
28	wet_weight	0.1005933	0.1556074	0.2106216
10	wet_weight	0.0899352	0.1466927	0.2034502
22	wet_weight	0.1033333	0.1586537	0.2139741

			16	wet_weight	0.1044870	0.1599924	0.2154979
			4	wet_weight	0.0874158	0.1442404	0.2010651
			27	wet_weight	0.1018117	0.1575874	0.2133631
			20	wet_weight	0.1106978	0.1668159	0.2229341
			14	wet_weight	0.1134354	0.1684217	0.2234081

Table 21: Nutritional stress treatment: model coefficients for days to starvation

	modelNumber	parameter	lower	est.	upper
1	3	(Intercept)	-1.6264256	0.6981308	3.0226873
7	9	(Intercept)	-2.6975950	-1.4061019	-0.1146088
12	5	(Intercept)	-1.9918878	0.4992232	2.9903343
18	11	(Intercept)	-2.7614151	-1.4209782	-0.0805413
23	4	(Intercept)	-2.2796627	0.0808327	2.4413282
28	7	(Intercept)	-2.5477886	-1.2562188	0.0353509
33	10	(Intercept)	-3.1623481	-1.8736620	-0.5849759
37	6	(Intercept)	-2.5857340	-0.0730969	2.4395401
42	12	(Intercept)	-3.2205579	-1.8920206	-0.5634834
5	3	I(mAgeDays^2)	-0.0008260	0.0020792	0.0049844
11	9	I(mAgeDays^2)	-0.0014570	-0.0010368	-0.0006165
16	5	I(mAgeDays^2)	-0.0013071	0.0018107	0.0049285
22	11	I(mAgeDays^2)	-0.0014415	-0.0010069	-0.0005723
26	4	I(mAgeDays^2)	-0.0011548	0.0018303	0.0048154
32	7	I(mAgeDays^2)	-0.0014533	-0.0010188	-0.0005843
36	10	I(mAgeDays^2)	-0.0015075	-0.0010780	-0.0006484
40	6	I(mAgeDays^2)	-0.0015489	0.0016287	0.0048063
45	12	I(mAgeDays^2)	-0.0014927	-0.0010509	-0.0006091
6	3	I(mAgeDays^3)	-0.0000365	-0.0000190	-0.0000015
17	5	I(mAgeDays^3)	-0.0000359	-0.0000171	0.0000016
27	4	I(mAgeDays^3)	-0.0000358	-0.0000177	0.0000003
41	6	I(mAgeDays^3)	-0.0000354	-0.0000163	0.0000028
4	3	mAgeDays	-0.1619663	-0.0138901	0.1341862
10	9	mAgeDays	0.0899977	0.1379141	0.1858305
15	5	mAgeDays	-0.1635056	-0.0045167	0.1544721
21	11	mAgeDays	0.0847369	0.1336148	0.1824928
25	4	mAgeDays	-0.1518003	0.0002918	0.1523839
31	7	mAgeDays	0.0890321	0.1373466	0.1856611
35	10	mAgeDays	0.0930453	0.1420116	0.1909779
39	6	mAgeDays	-0.1550559	0.0069234	0.1689027
44	12	mAgeDays	0.0885449	0.1382477	0.1879504
3	3	sexM	-0.9081046	-0.5677197	-0.2273348
9	9	sexM	-0.8979140	-0.5529831	-0.2080523
14	5	sexM	-0.9310952	-0.5659387	-0.2007822
20	11	sexM	-0.9233401	-0.5563777	-0.1894154
30	7	sexM	-0.8753426	-0.5390877	-0.2028327
2	3	wet_weight	0.1444168	0.1974680	0.2505192
8	9	wet_weight	0.1429772	0.1964866	0.2499959
13	5	wet_weight	0.1502720	0.2026005	0.2549291
19	11	wet_weight	0.1488887	0.2014833	0.2540779
24	4	wet_weight	0.1468067	0.2010640	0.2553213

29	7	wet_weight	0.1364212	0.1899561	0.2434909
34	10	wet_weight	0.1453634	0.2000021	0.2546407
38	6	wet_weight	0.1520628	0.2054013	0.2587398
43	12	wet_weight	0.1507390	0.2042926	0.2578462

Random effects

Table 22: Control treatment model random effects

modelNumber	parameter	Variance	StdDev
9	(Intercept)	0.104	0.323
3	(Intercept)	0.096	0.310
25	(Intercept)	0.125	0.354
15	(Intercept)	0.124	0.353
21	(Intercept)	0.125	0.354
13	(Intercept)	2.045	1.430
19	(Intercept)	0.006	0.080
7	(Intercept)	0.001	0.038
7	I(mAgeDays^2)	0.000	0.000
13	log(mAgeDays)	0.226	0.476
19	mAgeDays	0.000	0.009
7	mAgeDays	0.000	0.008
9	Residual	2.339	1.529
3	Residual	2.342	1.530
25	Residual	2.364	1.537
15	Residual	2.363	1.537
21	Residual	2.364	1.537
13	Residual	2.244	1.498
19	Residual	2.267	1.506
7	Residual	2.259	1.503

Table 23: Mating delay treatment model random effects

modelNumber	parameter	Variance	StdDev
9	(Intercept)	0.108	0.328
25	(Intercept)	0.131	0.362
21	(Intercept)	0.124	0.352
3	(Intercept)	0.100	0.316
15	(Intercept)	0.127	0.356
13	(Intercept)	41.836	6.468
19	(Intercept)	3.112	1.764
10	(Intercept)	0.081	0.284
22	(Intercept)	0.095	0.308
16	(Intercept)	0.097	0.312
4	(Intercept)	0.077	0.278
27	(Intercept)	0.098	0.313
20	(Intercept)	3.369	1.835
14	(Intercept)	38.245	6.184
13	log(mAgeDays)	2.324	1.524
14	log(mAgeDays)	2.038	1.427
19	mAgeDays	0.001	0.025
20	mAgeDays	0.001	0.025
9	Residual	2.520	1.588
25	Residual	2.570	1.603
21	Residual	2.552	1.598
3	Residual	2.518	1.587
15	Residual	2.558	1.599
13	Residual	2.284	1.511
19	Residual	2.207	1.486
10	Residual	2.673	1.635
22	Residual	2.698	1.642
16	Residual	2.705	1.645
4	Residual	2.664	1.632
27	Residual	2.741	1.656
20	Residual	2.338	1.529
14	Residual	2.447	1.564

Table 24: Nutritional stress treatment model random effects

	modelNumber	parameter	Variance	StdDev
1	3	(Intercept)	0.356	0.597
3	9	(Intercept)	0.335	0.579
5	4	(Intercept)	0.346	0.588
7	7	(Intercept)	0.788	0.888
11	10	(Intercept)	0.329	0.573
9	7	I(mAgeDays^2)	0.000	0.000
8	7	mAgeDays	0.001	0.024
2	3	Residual	1.391	1.179
4	9	Residual	1.440	1.200
6	4	Residual	1.481	1.217
10	7	Residual	1.224	1.106
12	10	Residual	1.523	1.234