

Figure S1. Results of the mini experiment to confirm 24 h as an appropriate drying time for livers in our study. Drying time required to achieve ‘constant weight’ of Atlantic salmon liver samples ($n = 20$). Liver samples were dried at 60 °C and weighed at 16, 24, 40, and 48 h. Mean percent change (\pm SE) in liver weight between 24 and 40 hours was $-1.85 \pm 0.25\%$.

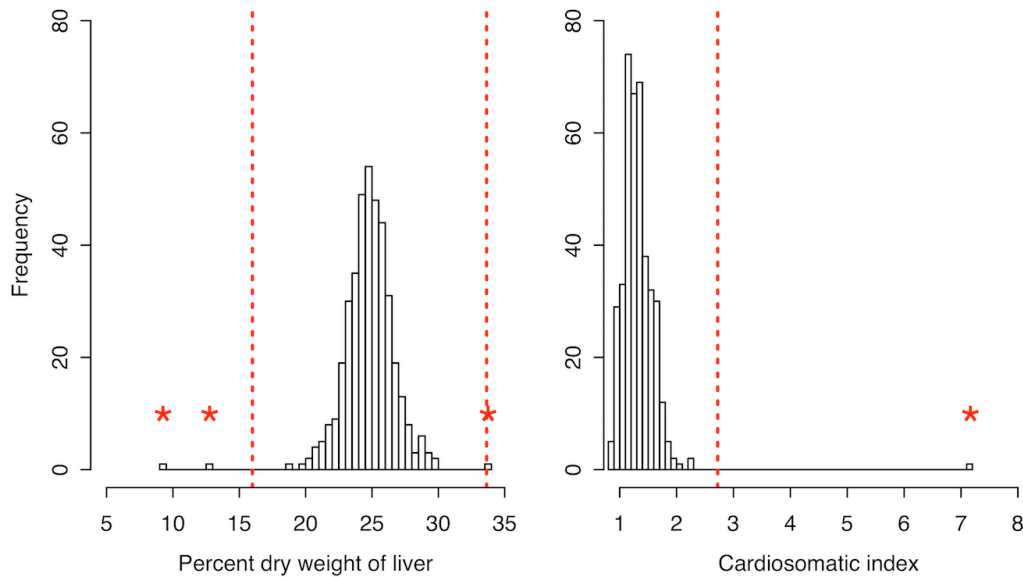


Figure S2. Outlier identification in the liver and heart data. Red dotted lines represent Tukey’s fences when $k = 4$ and asterisks indicate outlier observations assumed to be data-entry errors.

Table S1. Duration of the experiment in days and degree-days for each temperature group from the time of infestation (day = 0) to the endpoint dissection.

Temperature group (°C)	Duration of experiment (days)	Degree-days
10	40	421
13	28	382
16	21	341
19	17	323
22	14	296

Table S2. Model selection statistics for the five mixed-effects models fitted to the %DWL data. The relative variable importance (RVI) of model parameters was 1.00 and 0.99 for infestation level and temperature, respectively, and 0.14 for the interaction between them. All models included a random effect on the intercept for tank to account for the clustering of variance within tanks^a.

Rank	Model	Δ AIC ^b	AIC weight	Log-likelihood
1	temperature + infestation	0.00	0.84	-726.88
2	temperature * infestation	3.40	0.15	-726.58
3	infestation	8.65	0.01	-732.20
4	temperature	22.68	0.00	-740.22
5	null	27.12	0.00	-743.44

^aThe variance of the random effect for tank was 0.275^bDifference from the top model AIC.

Table S3. Effect sizes of the parameters in the top-ranked %DWL model.

Parameter	Mean	Standard error
intercept	26.931	0.489
temperature	-0.093	0.029
high infestation	-1.530	0.269
low infestation	-0.709	0.267

Table S4. Model selection statistics for the five mixed-effects models fitted to the CSI data. The relative variable importance (RVI) of model parameters was 1.00 for both infestation level and temperature, and 0.17 for the interaction between them. All models included a random effect on the intercept for tank to account for the clustering of variance within tanks^a.

Rank	Model	Δ AIC ^b	AIC weight	Log-likelihood
1	temperature + infestation	0.00	0.82	42.37
2	temperature * infestation	3.06	0.18	42.84
3	infestation	15.57	0.00	32.59
4	temperature	16.41	0.00	33.17
5	null	26.30	0.00	26.23

^aThe variance of the random effect for tank was 0.003.^bDifference from the top model AIC.

Table S5. Effect sizes of the parameters in the top-ranked CSI model.

Parameter	Mean	Standard error
intercept	0.993	0.061
temperature	0.016	0.004
high infestation	0.158	0.034
low infestation	0.078	0.033

Table S6. Mean louse abundances, with bootstrapped 95% confidence intervals, from each temperature group at the midpoint and endpoint dissections.

Temperature group (°C)	Infestation level	Midpoint abundances	Endpoint abundances
10	low	4.0 (2.9, 5.2)	1.2 (0.8, 1.6)
	high	13.1 (11.7, 14.7)	5.4 (4.1, 6.9)
13	low	5.2 (4.3, 6.1)	1.4 (1.0, 2.1)
	high	22.7 (20.0, 25.0)	7.5 (6.4, 8.9)
16	low	4.9 (3.7, 5.8)	1.1 (0.7, 1.4)
	high	19.8 (16.8, 22.4)	6.0 (4.9, 7.1)
19	low	4.6 (3.2, 6.1)	1.8 (1.1, 2.5)
	high	16.6 (14.9, 18.2)	9.5 (7.6, 11.3)
22	low	3.7 (2.8, 4.7)	2.3 (1.6, 2.5)
	high	19.4 (16.7, 22.4)	6.0 (3.7, 9.1)