

Supplementary material

Inherent variation in carbon and nitrogen isotopic assimilation in the freshwater macro-invertebrate *Cherax destructor*

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Table S1. Trophic fractionation between *Cherax destructor* and diets

Note: $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ values of *C. destructor* at the start of the experiment were $-21.62 \pm 0.23\text{‰}$ and $9.52 \pm 0.24\text{‰}$ respectively. Observed at the end of 180 days, based on formula $\Delta = \delta$ consumer tissue $- \delta$ diet (Gannes *et al.* 1997; Wolf *et al.* 2009). Assuming each individual at the same diet treatment received food with the mean $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ values, we also calculated the trophic fractionation for each individual, therefore, the standard deviation

Diet	Diet		Consumer <i>C. destructor</i>		Trophic fractionation	
	Mean $\delta^{13}\text{C}$	Mean $\delta^{15}\text{N}$	Mean $\delta^{13}\text{C}$	Mean $\delta^{15}\text{N}$	$\Delta^{13}\text{C}$ mean (s.d.)	$\Delta^{15}\text{N}$ mean (s.d.)
Kangaroo	-16.43	7.89	-15.64	10.55	0.79 (0.56)	2.67 (0.25)
Beef	-25.1	6.65	-23.05	10.05	2.05 (0.21)	3.40 (0.37)
Lamb	-24.24	7.4	-22.97	10.56	1.27 (0.10)	3.16 (0.22)
Turkey	-23.84	6.06	-22.58	9.67	1.26 (0.18)	3.61 (0.27)
Mix 1	-20.13	7.5	-18.26	10.66	1.87 (0.46)	3.16 (0.37)
Mix 2	-20.26	7.52	-19.01	10.78	1.26 (0.32)	3.26 (0.44)
Mix 3	-22.54	7.25	-20.13	10.99	2.41 (0.51)	3.75 (0.50)
Mix 4	-22.08	7.21	-20.44	10.61	1.64 (0.44)	3.40 (0.24)
Average					1.57 (0.42)	3.30 (0.33)

Table S2. Isotopic values and variances for diet and *Cherax destructor* muscle tissue

Diet	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	%C	%N	C : N	<i>C. destructor</i> muscle	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	%C	%N	C : N
Kangaroo	-16.00	7.90	48.00	13.50	3.56	Kangaroo meat	-16.14	10.60	43.12	13.47	3.20
Kangaroo	-16.60	7.80	47.80	13.40	3.57	Kangaroo meat	-16.43	10.40	40.03	12.30	3.25
Kangaroo	-16.50	7.80	49.00	13.80	3.55	Kangaroo meat	-15.32	10.72	42.48	12.98	3.27
Kangaroo	-17.50	7.70	48.60	13.60	3.57	Kangaroo meat	-15.25	10.13	42.97	13.64	3.15
Kangaroo	-15.81	8.20	53.20	11.50	4.63	Kangaroo meat	-16.03	10.58	43.57	13.52	3.22
Kangaroo	-17.00	7.70	46.90	13.20	3.55	Kangaroo meat	-15.39	10.57	46.39	14.46	3.21
Kangaroo	-15.60	8.10	46.50	13.20	3.52	Kangaroo meat	-14.91	10.88	47.80	14.32	3.34
Variance	0.39	0.03	4.23	0.50	0.14		0.27	0.05	5.69	0.48	0.00
Beef	-25.20	6.60	46.30	13.00	3.56	Beef meat	-22.82	9.94	42.49	13.34	3.19
Beef	-25.10	6.60	47.00	13.40	3.51	Beef meat	-22.76	9.61	43.64	13.87	3.15
Beef	-25.10	6.60	46.80	13.20	3.55	Beef meat	-23.18	10.39	44.25	12.82	3.45
Beef	-25.20	6.80	46.70	13.30	3.51	Beef meat	-22.87	10.15	43.72	13.48	3.24
Beef	-25.00	6.60	46.80	13.60	3.44	Beef meat	-23.35	9.95	42.10	13.19	3.19
Beef	-25.00	6.70	46.40	13.50	3.44	Beef meat	-23.17	9.92	42.60	12.98	3.28
						Beef meat	-23.17	10.36	46.39	13.83	3.35
						Beef meat	-23.11	10.11	45.20	13.05	3.46
Variance	0.01	0.01	0.06	0.04	0.00		0.04	0.06	1.87	0.13	0.01
Lamb	-24.31	7.40	50.10	11.30	4.43	Lamb meat	-22.83	10.36	40.83	12.79	3.19
Lamb	-24.42	7.30	49.90	11.30	4.42	Lamb meat	-22.87	10.32	43.83	13.43	3.26
Lamb	-24.39	7.30	50.30	11.30	4.45	Lamb meat	-23.06	10.72	44.27	12.31	3.60
Lamb	-24.19	7.40	50.90	11.70	4.35	Lamb meat	-22.80	10.54	43.81	12.42	3.53
Lamb	-24.14	7.60	59.40	13.50	4.40	Lamb meat	-22.96	10.89	47.81	13.77	3.47
Lamb	-24.00	7.40	48.00	10.80	4.44	Lamb meat	-22.88	10.54	43.65	13.11	3.33
Variance	0.02	0.01	13.49	0.75	0.00		0.01	0.04	4.14	0.27	0.02
Turkey	-23.86	6.10	51.40	12.00	4.28	Turkey meat	-22.39	9.40	42.18	12.91	3.27
Turkey	-23.85	5.10	51.50	12.00	4.29	Turkey meat	-22.83	10.01	41.88	12.51	3.35
Turkey	-23.82	6.20	49.30	11.40	4.32	Turkey meat	-22.29	9.84	43.44	12.63	3.44
Turkey	-23.90	6.20	50.90	12.00	4.24	Turkey meat	-22.54	10.19	42.87	11.13	3.85
Turkey	-23.80	6.30	50.40	11.90	4.24	Turkey meat	-22.71	9.47	43.53	13.25	3.29
Turkey	-23.85	6.30	49.00	11.70	4.19	Turkey meat	-22.76	9.00	43.36	13.08	3.32
Turkey	-23.80	6.20	49.60	11.70	4.24	Turkey meat	-22.58	9.61	46.93	13.87	3.38
						Turkey meat	-22.57	9.82	46.04	13.24	3.48
Variance	0.00	0.16	0.89	0.04	0.00		0.03	0.13	2.80	0.57	0.03
Mix 1	-19.76	7.52	47.89	12.96	3.69	Mix 1 diet	-18.54	10.40	45.58	14.17	3.22
Mix 1	-20.30	7.61	48.80	12.92	3.78	Mix 1 diet	-19.31	10.49	46.16	13.41	3.44
Mix 1	-20.18	7.44	48.54	12.95	3.75	Mix 1 diet	-16.78	11.21	42.81	12.22	3.50
Mix 1	-20.28	7.42	48.61	12.94	3.76	Mix 1 diet	-18.41	10.54	41.27	12.12	3.41
Variance	0.05	0.01	0.12	0.00	0.00		0.85	0.10	4.01	0.73	0.01
Mix 2	-20.30	7.61	48.80	12.92	3.78	Mix 2 diet	-19.16	10.54	42.62	10.93	3.90
Mix 2	-20.30	7.61	48.80	12.92	3.78	Mix 2 diet	-18.70	10.44	45.09	13.73	3.28
Mix 2	-20.18	7.44	48.54	12.95	3.75	Mix 2 diet	-19.25	11.46	41.92	11.48	3.65
Mix 2	-20.28	7.42	48.61	12.94	3.76	Mix 2 diet	-19.29	10.81	43.43	12.44	3.49
Variance	0.00	0.01	0.01	0.00	0.00		0.06	0.16	1.40	1.14	0.05

Diet	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	%C	%N	C:N	<i>C. destructor</i> muscle	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	%C	%N	C:N
Mix 3	-22.55	7.32	48.15	12.09	3.98	Mix 3 diet	-19.83	10.66	42.82	12.92	3.31
Mix 3	-22.55	7.32	48.15	12.09	3.98	Mix 3 diet	-19.81	10.63	43.39	12.60	3.44
Mix 3	-22.48	7.22	49.61	12.37	4.01	Mix 3 diet	-19.98	11.73	44.70	11.66	3.83
Mix 3	-22.57	7.12	46.70	12.27	3.81	Mix 3 diet	-20.88	10.97	43.44	12.39	3.50
Variance	0.00	0.01	1.05	0.02	0.01		0.20	0.20	0.47	0.21	0.04
Mix 4	-22.06	7.25	48.84	11.89	4.11	Mix 4 diet	-20.56	10.90	40.63	11.40	3.56
Mix 4	-22.06	7.25	48.84	11.89	4.11	Mix 4 diet	-19.80	10.67	37.28	12.30	3.03
Mix 4	-22.03	7.19	50.53	12.55	4.02	Mix 4 diet	-20.60	10.41	43.44	13.59	3.20
Mix 4	-22.16	7.14	49.95	12.42	4.02	Mix 4 diet	-20.81	10.44	26.02	7.91	3.29
Variance	0.00	0.00	0.53	0.09	0.00		0.14	0.04	43.80	4.44	0.04

References

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