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SUPPLEMENTARY MATERIAL

Diet-tissue discrimination factors of three neotropical freshwater fishes and a comparison of the trophic position

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Tab. S1. Food composition of the diets formulated for the experiments, in g $10g^{-1}$.

Ingredients	**Ration C_3**	**Ration C_4**	**Ration C_3/C_4**
Soy bran 45%	4.888	0	0
Wheat grains	3.618	0	1.725
Corn grains	0	5.038	0
Corn bran with gluten 60%	0	3.493	3.315
Sorghum	0	0	3.5
Fish's flour 55%	1	1	1
Soy oil	0.212	0.004	0
Dicalcium phosphate	0.115	0.182	0.17
Commercial ration	0.1	0.1	0.1
Salt	0.03	0.03	0.03
Dl-methionine	0.021	0	0.002
Antifungal agent	0.01	0.01	0.01
L-threonine	0.004	0.014	0.016
Antioxidant	0.002	0.002	0.002
L-lysine HCL	0	0.127	0.128
Limestone	0	0	0.003

Tab. S2. Values (mean ± SD) of standard length (mm) and total weight (g) at the initial (T=0) and final (T=128 days) times, in the treatments (ration C_3, ration C_4, ration C_3/C_4) for *Pseudoplatystoma corruscans*.

Treatments	Standard length (mm)		Weight (g)	
	Initial SL	Final SL	Initial WT	Final WT
C_3	88.32 (±7.64)	131.10 (±11.8)	9.46 (±1.61)	17.18 (±2.97)
C_4	88.32 (±7.64)	142.22 (±9.51)	9.46 (±1.61)	21.24 (±5.45)
C_3/C_4	88.32 (±7.64)	126.12 (±3.55)	9.46 (±1.61)	17.16 (±2.49)

Tab. S3. Mean (± SD) of the isotopic values of carbon and nitrogen for muscles and livers of *Pseudoplatystoma corruscans*, fed with different diets (ration C_3, ration C_4, ration C_3/C_4) during the experiment, with sampling times T0, T2, T4, T8, T16, T32, T64, T90 and T128.

Diet	Ration C_3				Ration C_4				Ration C_3/C_4			
Tissue	Muscle		Liver		Muscle		Liver		Muscle		Liver	
Isotope	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$
T0	-15.5 (±0.16)	8.1 (±0.17)	-16.2 (±0.01)	9.95 (±0.24)	-15.5 (±0.16)	8.1 (±0.17)	-16.2 (±0.01)	9.95 (±0.24)	-15.5 (±0.16)	8.1 (±0.17)	-16.2 (±0.01)	9.9 (±0.24)
T2	-15.4 (±0.17)	8.1 (±0.07)	-16.6 (±0.40)	8.34 (±0.29)	-15.6 (±0.38)	8.2 (±0.06)	-16.5 (±0.09)	9.92 (±0.40)	-15.6 (±0.33)	8.2 (±0.13)	-16.9 (±0.82)	9.33 (±1.0)
T4	-15.4 (±0.24)	8.2 (±0.009)	-16.6 (±0.40)	9.25 (±1.45)	-15.4 (±0.16)	8.2 (±0.007)	-15.8 (± 0.62)	8.8 (±1.0)	-15.5 (±0.24)	8.2 (±0.13)	-16.6 (±0.51)	8.9 (±1.2)
T8	-15.5 (± 0.08)	8.3 (± 0.17)	-16.3 (±0.48)	9.55 (± 0.78)	-15.7 (± 0.48)	8.3 (± 0.10)	-16.3 (±1.54)	9.35 (± 0.96)	-15.6 (± 0.24)	8.2 (± 0.13)	-16.7 (± 1.05)	10.0 (± 0.52)
T16	-15.7 (±0.35)	8.2 (±0.09)	-17.5 (±1.22)	8.43 (±0.63)	-15.4 (±0.31)	8.3 (±0.07)	-15.9 (±0.41)	9.97 (±0.19)	-15.4 (±0.05)	8.2 (±0.08)	-16.6 (±0.90)	8.7 (±0.17)
T32	-15.8 (±0.53)	8.3 (±0.17)	-17.9 (±3.66)	9.34 (±1.12)	-15.6 (±0.53)	8.2 (±0.16)	-16.3 (±1.06)	9.22 (±0.12)	-15.4 (±0.29)	8.2 (±0.23)	-15.9 (±0.41)	8.87 (±0.79)
T64	-20.3 (±0.01)	6.3 (±0.03)	-24.3 (±1.10)	6.57 (±1.13)	-15.0 (±0.32)	8.4 (±0.11)	-13.9 (±0.26)	8.5 (±0.21)	-15.1 (±0.44)	8.3 (±0.20)	-15.5 (±0.33)	9.0 (±1.14)
T90	–	–	–	–	-15.3 (±0.5)	8.3 (±0.13)	-14.4 (±0.20)	8.4 (±0.25)	-15.1 (±0.26)	8.3 (±0.17)	-15.1 (±1.07)	9.25 (±0.01)
T128	-21.7 (±0.32)	6.1 (±0.04)	-24.8 (±0.17)	6.45 (±0.47)	-14 (±0.63)	8.3 (±0.14)	-14.4 (±0.52)	9.4 (±0.50)	-15.2 (±0.48)	8.1 (±0.16)	-14.8 (±0.79)	9.2 (±0.92)

Tab. S4. Values (mean ± SD) of standard length (mm) and total weight (g) at the initial (T=0) and final (T=128 days) times, in the treatments (ration C_3, ration C_4, ration C_3/C_4) for *Piaractus mesopotamicus*.

Treatments	Standard length (mm)		Weight (g)	
	Initial SL	Final SL	Initial WT	Final WT
C_3	67.10 (±15.94)	123.89 (±14.72)	10.78 (±2.70)	66.79 (±26.04)
C_4	67.10 (±15.94)	102.61 (±6.92)	10.78 (±2.70)	39.59 (±8.04)
C_3/C_4	67.10 (±15.94)	111.1 (±12.31)	10.78 (±2.70)	54.98 (±20.86)

Tab. S5. Mean (± SD) of the isotopic values of carbon and nitrogen for muscles and livers of *Piaractus mesopotamicus*, fed different diets (ration C_3, ration C_4, ration C_3/C_4) during the experiment, with sampling times T0, T2, T4, T8, T16, T32, T64, T90 and T128.

Diet	Ration C_3				Ration C_4				Ration C_3/C_4			
Tissue	Muscle		Liver		Muscle		Tissue		Muscle		Liver	
Isotope	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$
T0	-18.5 (±0.58)	6.9 (±0.16)	-19.70 (±0.89)	7.80 (±0.23)	-18.5 (±0.58)	6.9 (±0.16)	-19.70 (±0.89)	7.80 (±0.22)	-18.5 (±0.58)	6.9 (±0.16)	-19.70 (±0.89)	7.80 (±0.22)
T2	-18.3 (±0.24)	6.8 (±0.07)	-16.17 (±0.55)	7.17 (±0.14)	-18.1 (±0.38)	6.9 (±0.43)	-16.47 (±0.61)	7.17 (±0.44)	-18.9 (±0.29)	7.0 (±0.10)	-20.47 (±0.57)	6.91 (±0.44)
T4	-18.2 (±0.38)	7.0 (±0.16)	-18.39 (±1.20)	7.49 (±0.22)	-18.0 (±0.76)	7.1 (±0.36)	-15.8 (± 0.77)	7.63 (±0.26)	-18.9 (±0.30)	6.9 (±0.15)	-21.93 (±0.29)	6.47 (±0.26)
T8	-17.9 (± 0.35)	7.2 (± 0.31)	-16.10 (±0.56)	7.41 (± 0.15)	-17.3 (± 0.11)	6.9 (± 0.26)	-14.85 (±0.32)	7.68 (± 0.02)	-20.5 (± 0.29)	5.7 (± 0.22)	-23.09 (± 0.68)	5.36 (± 0.34)
T16	-18.4 (±0.1)	6.4 (±0.09)	-19.36 (±0.09)	6.40 (±0.11)	-16.4 (±0.21)	6.9 (±0.03)	-12.92 (±0.32)	7.86 (±0.09)	-18.9 (±0.30)	6.2 (±0.19)	-16.35 (±0.38)	6.70 (±0.06)
T32	-20.4 (±0.81)	5.5 (±0.35)	-22.62 (±0.77)	5.41 (±0.29)	-16.3 (±0.17)	7.0 (±0.15)	-13.12 (±0.10)	7.47 (±0.06)	-17.2 (±0.30)	6.3 (±0.12)	-14.78 (±0.51)	7.21 (±0.20)
T64	-21.8 (±0.23)	5.3 (±0.02)	-23.99 (±0.13)	4.82 (±0.11)	-14.2 (±0.24)	7.1 (±0.11)	-11.76 (±0.14)	7.90 (±0.21)	-16.3 (±0.07)	6.7 (±0.50)	-14.78 –	7.40
T90	-23.0 (±0.61)	4.6 (±0.26)	–	–	-13.6 (±0.11)	7.5 (±0.04)	-11.92	7.76	-15.2 (±0.30)	7.0 (±0.03)	–	–
T128	–	–	-24.8 (±0.17)	6.45 (±0.47)	-12.9 (±0.44)	7.3 (±0.19)	-11.53 (±0.47)	7.97 (±0.36)	-14.9 (±0.36)	7.0 (±0.11)	-13.84 (±0.44)	7.28 (±0.10)

Tab. S6. Values (mean ± SD) of standard length (mm) and total weight (g) at the initial (T=0) and final (T=128 days) times, in the treatments (ration C_4, ration C_3/C_4) for *Astyanax lacustris*.

Treatments	Standard length (mm)		Weight (g)	
	Initial SL	Final SL	Initial WT	Final WT
C_3/C_4	51.93 (±4.34)	52.78 (±2.66)	3.89 (±1.11)	3.95 (±0.83)
C_4	51.93 (±4.34)	53.49 (±5.18)	3.89 (±1.11)	4.09 (±1.12)

Tab. S7. Mean (± SD) of the isotopic values of carbon and nitrogen for muscles and livers of *Astyanax lacustris*, fed different diets (ration C_4 and ration C_3/C_4) during the experiment, with sampling times T0, T2, T4, T8, T16, T32, T64, T90 and T128.

Diet	Ration C_3/C_4				Ration C_4			
Tissue	Muscle		Liver		Muscle		Liver	
Isotope	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$
T0	-16.0	8.6	-15.98 (±0.97)	8.35 (±0.78)	-16.0	8.6	-15.98 (±0.97)	8.35 (±0.77)
T2	-16.7 (±0.37)	8.6 (±0.03)	-15.91 (±1.50)	8.08 (±0.69)	-16.8 (±0.21)	8.0 (±0.07)	-15.80 (±0.03)	8.08 (±0.01)
T4	-16.7 (±0.85)	7.9 (±0.35)	-15.48 (±0.63)	8.25 (±0.35)	-16.3 (±0.62)	8.0 (±0.20)	-14.14 (± 0.31)	8.53 (±0.27)
T8	-16.2 (± 0.32)	8.4 (± 0.24)	-14.91 (±0.21)	8.30 (± 0.22)	-16 (± 0.21)	8.1 (± 0.18)	-15.14 (±0.16)	8.3 (± 0.30)
T16	-15.7 (±0.02)	8.3 (±0.04)	-15.15 (±0.88)	7.99 (±0.24)	-16.0 (±0.32)	8.4 (±0.32)	-14.05 (±1.08)	8.53 (±0.002)
T32	-16.3 (±0.18)	8.1 (±0.11)	-15.22 (±0.45)	8.08 (±0.33)	-15.3 (±0.32)	8.2 (±0.04)	-15.07 (±1.19)	8.89 (±0.52)
T64	-15.9 (±0.40)	8.3 (±0.25)	-14.21 (±0.40)	7.89 (±0.77)	-15.8 (±0.52)	8.2 (±0.14)	-13.44 (±0.21)	8.85 (±0.54)
T90	-15.5 (±0.27)	8.5 (±0.20)	-14.45 (±0.26)	8.18 (±0.11)	-14.5 (±0.25)	8.8 (±0.29)	-13.22 (±0.22)	9.04 (±0.06)
T128	-15.1 (±0.2)	8.4 (±0.2)	-13.79 (±0.14)	7.74 (±0.14)	-15.02 (±0.89)	8.5 (±0.20)	-12.90 (±0.40)	8.98 (±0.34)