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SUPPLEMENTARY MATERIAL

Identification of aquatic consumer trophic pathways in four volcanic tropical lakes using fatty acid biomarkers

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Supplementary Table 1. Relative fatty acid compositions of surface and near bottom particulate organic matter (POM), zooplankton, and fish samples from Lakes Yambo (Y), Pandin (P), Calibato (C), and Taal north (T_n) and south (T_s) basins.

Fatty acid	Surface POM					Near bottom POM					Zooplankton					*Oreochromis niloticus*		*Sardinella tawilis*	*Ambassis* sp.	*Leiopotherapon plumbeus*
	Y	P	C	T_n	T_s	Y	P	C	T_n	T_s	Y	P	C*	T_n	T_s	C	T_s	T_s (n = 4)	T_s	C
14 : 0	5.24	6.72	5.57	8.97	8.30	7.05	3.52	4.37	4.05	4.00	4.86	5.59	2.64	4.58	4.29	1.35	4.78	5.73 (0.18)	3.49	4.51
14 : 1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
i-15:0	1.40	1.28	4.11	1.53	1.51	1.94	8.51	4.35	0.95	0.70	0.75	0.75	3.83	0.94	1.23	0.34	0.31	1.42 (0.07)	0.61	0.90
a-15:0	1.03	0.60	2.37	0.65	0.42	2.64	9.32	1.86	1.41	1.04	–	–	–	0.38	0.27	–	–	0.42 (0.02)	–	0.21
15 : 0	1.07	0.83	0.97	1.00	0.79	2.90	0.90	1.25	1.57	1.01	0.68	1.16	–	1.50	1.35	0.59	0.75	1.38 (0.07)	0.75	1.06
i-16:0	0.41	0.27	0.58	–	–	1.14	2.15	1.09	–	–	0.15	0.31	–	–	–	0.14	–	–	–	0.28
15 : 1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2-OH 12:0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
16 : 0	37.03	45.09	36.25	40.51	44.60	39.51	28.63	35.11	50.75	48.75	24.19	34.47	37.35	28.78	25.55	28.03	40.97	41.83 (1.11)	32.49	32.75
10Me16:0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
16:1n7t	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
16:1n5t	0.14	–	–	–	–	–	–	–	–	–	1.58	–	0.11	0.10	–	–	–	–	–	–

Fatty acid	Surface POM					Near bottom POM					Zooplankton					*Oreochromis niloticus*		*Sardinella tawilis*	*Ambassis* sp.	*Leiopotherapon plumbeus*
	Y	P	C	T_n	T_s	Y	P	C	T_n	T_s	Y	P	C*	T_n	T_s	C	T_s	T_s (n = 4)	T_s	C
16:1n9	1.00	0.91	0.72	1.61	0.76	3.11	0.66	0.85	1.32	0.98	0.35	0.35	–	1.00	0.89	0.26	0.67	0.65 (0.04)	0.43	0.97
16:1n8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
i17	0.14	0.10	0.61	–	–	0.45	0.71	0.56	0.25	–	0.44	0.74	0.77	0.89	0.84	0.63	0.44	1.02 (0.04)	0.61	1.10
16 : 1ω7	16.02	8.40	9.17	9.10	7.52	9.35	5.81	6.21	2.23	2.95	3.65	3.51	1.85	12.64	13.66	3.58	4.72	7.45 (0.52)	5.58	8.83
16:1n5c	0.50	0.49	0.69	–	–	0.36	0.16	0.40	–	–	0.33	0.24	–	0.45	0.98	0.42	0.09	0.27 (0.02)	0.26	0.37
a-17:0	–	0.14	0.59	–	–	0.83	2.05	1.17	0.41	0.43	0.41	0.40	–	0.42	0.22	–	0.16	0.36 (0.02)	0.18	0.21
3-OH 12:0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
17 : 0	0.73	0.63	0.75	0.72	0.64	–	0.61	1.10	1.15	0.90	2.08	2.92	2.85	2.01	1.80	1.54	0.73	2.25 (0.09)	1.13	1.28
16:2n6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
16 : 2ω4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Me18:0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
17:0Δ	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
17 : 1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
16 : 3ω4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Fatty acid	Surface POM					Near bottom POM					Zooplankton					*Oreochromis niloticus*		*Sardinella tawilis*	*Ambassis* sp.	*Leiopotherapon plumbeus*
	Y	P	C	T_n	T_s	Y	P	C	T_n	T_s	Y	P	C*	T_n	T_s	C	T_s	T_s (n = 4)	T_s	C
2-OH 14:0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
18:0	8.44	7.90	7.88	12.05	12.37	15.61	22.81	15.83	18.46	18.71	9.69	15.69	26.26	10.54	9.33	13.59	9.27	14.74 (0.17)	11.10	10.20
16:3n3	0.73	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
18 : 1ω9t	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
18:1n7t	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
18 : 1ω9c	11.73	14.15	7.37	9.69	10.05	8.44	7.18	13.01	9.05	11.70	8.09	8.33	7.75	1.00	8.32	5.99	24.41	12.07 (0.85)	11.49	23.48
18:1n8	–	–	–	–	–	0.20	0.08	0.10	–	–	0.14	0.03	–	–	–	–	–	–	–	–
18 : 1ω7	5.07	2.31	5.77	2.74	2.12	2.98	4.13	5.54	2.09	2.30	2.35	4.65	2.45	5.50	5.40	4.32	2.12	4.65 (0.44)	2.85	5.19
18 : 2ω6t	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
18 : 2ω6c	2.84	3.53	3.10	2.98	2.52	2.09	0.90	3.36	2.50	3.20	4.66	1.64	5.75	3.12	4.08	1.76	2.86	1.12 (0.32)	2.83	2.44
3-OH 14:0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
19:0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
18 : 3ω6	–	–	0.30	–	–	–	–	–	–	–	0.61	–	–	0.28	0.45	0.14	–	–	0.27	0.08
19:0Δ	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
18 : 3ω4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Fatty acid	Surface POM					Near bottom POM					Zooplankton					*Oreochromis niloticus*		*Sardinella tawilis*	*Ambassis* sp.	*Leiopotherapon plumbeus*
	Y	P	C	T_n	T_s	Y	P	C	T_n	T_s	Y	P	C*	T_n	T_s	C	T_s	T_s (n = 4)	T_s	C
20:0	0.65	0.62	0.59	0.60	0.53	–	0.96	1.06	0.90	0.72	0.47	0.55	0.79	0.56	0.45	0.30	0.30	0.84 (0.06)	–	0.33
18 : 3ω3	1.84	3.13	5.45	3.67	3.64	–	0.20	–	0.51	0.50	4.35	1.74	2.41	3.70	0.45	0.46	0.51	0.54 (0.20)	2.11	0.36
20 : 1ω9	–	–	–	–	–	–	–	–	–	–	0.32	–	–	–	–	–	–	–	–	1.21
18 : 4ω3	–	0.58	1.25	0.73	1.12	–	–	–	–	–	1.63	0.31	–	0.56	1.23	–	–	–	0.36	–
2-OH 16:0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
21 : 0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
20 : 2ω6	–	–	–	–	–	–	–	–	–	–	0.23	0.18	–	0.28	0.18	0.28	0.46	–	–	0.40
20 : 3ω6	–	–	–	–	–	–	–	–	–	–	0.37	0.25	–	–	–	1.29	–	–	–	0.34
22:0	0.84	0.57	0.89	0.54	0.42	–	0.70	0.74	0.71	0.56	0.61	0.88	1.31	1.52	1.00	0.35	0.32	–	–	0.19
20 : 3ω3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
20 : 4ω6	–	–	0.55	–	–	–	–	–	–	–	5.30	2.01	–	2.80	4.80	9.95	1.53	0.68 (0.22)	6.96	0.90
22 : 1ω9	–	–	–	–	0.40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
20:4ω3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
23 : 0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
20 : 5ω3	0.77	–	1.20	1.31	1.15	–	–	–	–	–	13.05	2.63	0.96	5.16	10.15	3.08	0.58	0.61 (0.14)	6.21	0.08
22 : 2ω6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Fatty acid	Surface POM					Near bottom POM					Zooplankton					*Oreochromis niloticus*		*Sardinella tawilis*	*Ambassis* sp.	*Leiopotherapon plumbeus*
	Y	P	C	T_n	T_s	Y	P	C	T_n	T_s	Y	P	C*	T_n	T_s	C	T_s	T_s (n = 4)	T_s	C
22:4ω6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
22:3ω3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
24:0	1.31	1.14	1.66	1.00	0.74	1.41	–	2.03	1.16	0.96	0.42	–	–	0.72	0.51	0.45	–	0.70 (0.08)	0.48	–
24:1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
25:0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.07
22 : 5ω3	–	–	–	–	–	–	–	–	–	–	0.60	0.52	–	0.33	0.48	5.89	0.49	–	2.14	0.32
22 : 6ω3	–	–	–	–	–	–	–	–	–	–	9.22	8.57	3.03	1.30	2.64	15.29	3.51	1.28 (0.33)	7.68	1.92
26:0	0.57	0.61	0.72	0.63	0.39	–	–	–	0.53	0.65	–	–	–	–	–	–	–	–	–	–
27:0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
28:0	0.50	–	0.88	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

*Small sample size, mean % and standard deviation in parentheses, and dashes (–) represent below detection limit.