

Variable fatty acid composition of the pelagic appendicularian *Oikopleura dioica* in response to dietary quality and quantity

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Marine Ecology Progress Series 289:165–176 (2005)

Appendix 1

Table A. Fatty acid compositions of *Isochrysis* sp. and *Oikopleura dioica* fed a diet containing only *Isochrysis* sp. Animals were sampled every 24 h up to maturity. The major fatty acids are given as a percentage of total composition with standard deviation. Total fatty acids per individual and percent proportion of 5 major groups of fatty acids (Groups) are also given. nd: identity not determined

Fatty acid	<i>Isochrysis</i> sp.	<i>Oikopleura dioica</i>						
		24 h	48 h	72 h	96 h	120 h	144 h	168 h
14:0	12.8 ± 5.1	5.7 ± 1.0	5.4 ± 0.8	9.1 ± 2.2	8.5 ± 1.2	10.9 ± 1.1	10.7 ± 1.2	9.1 ± 0.7
14:1n5	0.3 ± 0.1 ^b	0.6 ± 0.3	0.8 ± 0.4	0.5 ± 0.2	0.7 ± 0.2	0.5 ± 0.1	0.6 ± 0.2	0.4 ± 0.2
nd1 ^a	0.3 ± 0.2	1.5 ± 0.4	1.7 ± 0.3	1.3 ± 0.3	1.5 ± 0.3	1.2 ± 0.3	1.9 ± 0.2	3.5 ± 0.9
nd2	0.1 ± 0.1	2.1 ± 0.3	1.9 ± 0.5	1.7 ± 0.3	1.8 ± 0.3	1.6 ± 0.2	2.0 ± 0.1	2.3 ± 0.3
15:0	0.3 ± 0.1	1.6 ± 0.3	1.6 ± 0.3	0.9 ± 0.2	0.8 ± 0.2	0.7 ± 0.1	0.9 ± 0.2	0.7 ± 0.2
16:0	8.2 ± 1.5	18.5 ± 1.8	16.4 ± 3.8	16.0 ± 1.6	16.5 ± 2.3	15.1 ± 1.8	15.3 ± 1.1	17.3 ± 3.4
16:1n9	0.4 ± 0.1 ^b	–	–	–	–	–	–	–
16:1n7 ^a	2.1 ± 1.0 ^b	5.8 ± 1.4	5.8 ± 2.0	8.9 ± 1.0	10.8 ± 1.5	9.9 ± 0.5	10.7 ± 2.1	13.7 ± 1.0
16:2n6 ^a	0.4 ± 0.2 ^b	1.5 ± 0.2	1.8 ± 0.5	0.7 ± 0.3	0.7 ± 0.3	0.5 ± 0.4	0.5 ± 0.2	0.3 ± 0.1
17:0	0.1 ± 0.0 ^b	0.7 ± 0.1	0.6 ± 0.2	0.6 ± 0.2	0.5 ± 0.1	0.6 ± 0.7	0.7 ± 0.1	0.7 ± 0.1
nd3	0.1 ± 0.2	2.1 ± 0.6	2.6 ± 1.1	0.9 ± 0.5	1.1 ± 0.8	0.7 ± 0.8	0.8 ± 0.4	0.4 ± 0.3
18:0	1.0 ± 0.3 ^b	8.5 ± 1.8	7.3 ± 1.7	3.0 ± 0.6	2.7 ± 1.0	1.9 ± 0.3	2.7 ± 1.3	2.8 ± 1.2
18:1n9 ^a	5.9 ± 1.7 ^b	1.8 ± 0.7	2.2 ± 1.1	1.2 ± 0.7	1.3 ± 1.0	0.8 ± 0.7	0.6 ± 0.5	0.3 ± 0.1
18:1n7 ^a	0.9 ± 0.1 ^b	4.7 ± 0.5	5.7 ± 3.0	3.5 ± 0.7	2.6 ± 1.0	1.9 ± 0.2	2.2 ± 0.3	2.4 ± 0.5
18:2n6 ^a	4.3 ± 2.6 ^b	1.5 ± 0.4	1.4 ± 0.9	2.1 ± 0.3	1.7 ± 0.2	1.9 ± 0.3	1.8 ± 0.3	1.8 ± 0.3
18:2n4 ^a	0.2 ± 0.2 ^b	1.8 ± 0.4	2.2 ± 1.0	0.9 ± 0.4	1.0 ± 0.5	0.6 ± 0.6	0.4 ± 0.2	0.4 ± 0.2
18:3n3 ^a	3.3 ± 1.8 ^b	2.1 ± 0.7	1.0 ± 0.3	3.4 ± 0.5	2.7 ± 0.4	3.4 ± 0.7	2.9 ± 0.6	2.7 ± 0.7
18:4n3 ^a	9.3 ± 4.9 ^b	1.8 ± 0.7	1.4 ± 0.6	10.8 ± 1.7	9.6 ± 1.7	11.8 ± 2.6	9.9 ± 1.9	9.1 ± 3.4
18:5n1	0.6 ± 0.2 ^b	2.6 ± 0.8	3.0 ± 1.2	0.9 ± 0.8	1.3 ± 1.0	0.9 ± 1.1	1.0 ± 0.6	0.5 ± 0.4
20:0	0.1 ± 0.0	1.1 ± 0.2	0.9 ± 0.2	0.6 ± 0.1	0.5 ± 0.1	0.4 ± 0.1	0.6 ± 0.2	0.5 ± 0.1
nd4 ^a	1.7 ± 0.5	1.6 ± 0.6	3.1 ± 2.1	1.1 ± 0.4	1.6 ± 1.1	0.9 ± 0.7	0.8 ± 0.6	0.4 ± 0.2
20:1n9	0.4 ± 0.2 ^b	2.2 ± 0.6	1.8 ± 0.4	0.8 ± 0.2	0.6 ± 0.3	0.5 ± 0.2	0.6 ± 0.2	0.4 ± 0.2
20:1n7	1.6 ± 0.5	0.1 ± 0.1	0.2 ± 0.1	0.1 ± 0.1	0.1 ± 0.0	0.1 ± 0.0	0.1 ± 0.1	0.2 ± 0.1
20:2n6	0.2 ± 0.2 ^b	–	0.1 ± 0.1	0.2 ± 0.2	0.1 ± 0.0	0.1 ± 0.0	0.1 ± 0.0	0.2 ± 0.1
20:4n6	0.2 ± 0.1	0.3 ± 0.1	0.2 ± 0.1	0.5 ± 0.1	0.5 ± 0.1	0.7 ± 0.1	0.6 ± 0.2	0.7 ± 0.2
20:3n3	0.2 ± 0.2 ^b	0.5 ± 0.2	0.3 ± 0.2	0.2 ± 0.1	0.2 ± 0.1	0.3 ± 0.2	0.2 ± 0.1	0.2 ± 0.1
20:5n3 ^a	2.5 ± 1.0 ^b	5.8 ± 1.1	4.9 ± 1.5	8.4 ± 1.1	8.5 ± 1.0	9.2 ± 0.7	8.1 ± 0.7	8.2 ± 2.1
22:0	0.2 ± 0.0 ^b	0.7 ± 0.2	0.4 ± 0.2	0.2 ± 0.1	0.2 ± 0.1	0.2 ± 0.2	0.2 ± 0.1	0.3 ± 0.2
22:1n9	0.1 ± 0.1	1.0 ± 0.4	1.3 ± 1.5	0.4 ± 0.2	0.6 ± 0.2	0.2 ± 0.1	0.5 ± 0.2	–
21:5n3 ^a	0.1 ± 0.1 ^b	1.2 ± 0.4	1.2 ± 0.3	0.6 ± 0.2	0.6 ± 0.3	0.6 ± 0.4	0.4 ± 0.2	0.4 ± 0.2
22:5n6 ^a	1.2 ± 0.3 ^b	0.2 ± 0.2	0.4 ± 0.3	1.7 ± 0.3	1.2 ± 0.2	1.9 ± 0.4	1.4 ± 0.3	1.0 ± 0.4
22:5n3 ^a	3.5 ± 1.6	1.6 ± 0.5	2.1 ± 0.9	0.5 ± 0.3	0.7 ± 0.5	0.5 ± 0.4	0.7 ± 0.4	0.3 ± 0.2
24:0 ^a	0.2 ± 0.0	0.7 ± 0.2	0.5 ± 0.2	0.4 ± 0.1	0.3 ± 0.1	0.3 ± 0.1	0.2 ± 0.1	0.2 ± 0.1
22:6n3 ^a	6.9 ± 4.3 ^b	2.0 ± 0.9	1.5 ± 0.7	8.4 ± 1.6	6.8 ± 1.2	9.1 ± 1.2	7.2 ± 1.9	6.7 ± 2.7
24:1n9	0.2 ± 0.1	0.3 ± 0.5	–	0.1 ± 0.2	0.1 ± 0.1	0.2 ± 0.1	0.2 ± 0.1	0.1 ± 0.1
nd5	1.9 ± 0.7 ^b	1.6 ± 0.4	1.1 ± 0.4	0.4 ± 0.1	0.4 ± 0.1	0.4 ± 0.2	0.5 ± 0.3	0.3 ± 0.2
nd6	1.2 ± 0.6 ^b	1.3 ± 0.5	1.6 ± 0.5	0.4 ± 0.3	0.5 ± 0.4	0.4 ± 0.5	0.5 ± 0.3	0.1 ± 0.1
FA ind. ⁻¹ (1.3 ± 0.4) × 10 ⁻³ (ng)		1.2 ± 0.3	2.0 ± 0.7	10.7 ± 4.0	32.4 ± 5.2	158 ± 74	270 ± 150	740 ± 560
Groups								
SFA	22.9 ± 5.4	37.5 ± 2.8	33.1 ± 4.3	30.9 ± 2.8	30.0 ± 2.8	30.1 ± 2.3	31.3 ± 2.1	31.6 ± 3.7
MUFA	11.0 ± 2.0	16.5 ± 1.9	17.8 ± 4.1	15.5 ± 1.5	16.9 ± 2.1	14.0 ± 0.9	15.5 ± 2.2	17.5 ± 1.2
PUFA	32.9 ± 7.4	22.6 ± 2.1	21.7 ± 2.8	39.3 ± 2.9	35.5 ± 2.7	41.6 ± 3.4	35.2 ± 3.0	32.4 ± 4.9
n-3	26.0 ± 7.0	14.8 ± 1.9	12.5 ± 2.0	32.2 ± 2.7	29.1 ± 2.4	34.9 ± 3.1	29.4 ± 2.9	27.6 ± 4.9
n-6	6.3 ± 2.6	3.4 ± 0.6	3.9 ± 1.1	5.3 ± 0.6	4.2 ± 0.4	5.1 ± 0.6	4.4 ± 0.5	4.0 ± 0.6

^aFatty acids showing a significant difference (regression analysis: $p < 0.05$) between animals fed *Isochrysis* sp. compared to *Chaetoceros calcitrans* throughout the life cycle

^bFatty acids that differ significantly (t -test: $p < 0.05$) from the respective values for *Chaetoceros calcitrans* (Table B)

Table B. Fatty acid compositions of *Chaetoceros calcitrans* and *Oikopleura dioica* fed a diet containing only *C. calcitrans*. Animals were sampled every 24 h up to maturity. The major fatty acids are given as a percentage of total composition with standard deviation. Total fatty acids per individual and percent proportion of 5 major groups of fatty acids (Groups) are also given. nd: identity not determined

Fatty acid	<i>Chaetoceros calcitrans</i>	<i>Oikopleura dioica</i>						
		24 h	48 h	72 h	96 h	120 h	144 h	168 h
14:0	9.2 ± 6.7	5.7 ± 1.0	3.8 ± 1.3	6.1 ± 1.5	5.8 ± 1.2	11.4 ± 1.6	10.4 ± 1.6	6.8 ± 1.5
14:1n5	0.2 ± 0.1 ^b	0.6 ± 0.3	1.5 ± 0.2	0.7 ± 0.2	0.7 ± 0.1	0.6 ± 0.1	0.8 ± 0.2	0.6 ± 0.2
nd1 ^a	0.3 ± 0.2	1.5 ± 0.4	1.3 ± 0.4	2.3 ± 0.5	1.9 ± 0.5	2.6 ± 0.4	2.4 ± 0.4	6.0 ± 1.6
nd2	0.2 ± 0.1	2.1 ± 0.3	1.6 ± 0.6	1.7 ± 0.3	1.7 ± 0.4	1.8 ± 0.1	1.7 ± 0.1	2.3 ± 0.4
15:0	0.5 ± 0.4	1.6 ± 0.3	1.5 ± 0.3	1.2 ± 0.2	1.0 ± 0.2	0.8 ± 0.3	0.8 ± 0.2	0.9 ± 0.2
16:0	6.5 ± 4.9	18.5 ± 1.8	15.1 ± 4.6	15.0 ± 1.8	15.9 ± 4.3	16.2 ± 1.2	14.2 ± 0.7	15.5 ± 2.2
16:1n9	1.2 ± 0.8 ^b	–	–	–	–	–	–	–
16:1n7 ^a	8.5 ± 5.5 ^b	5.8 ± 1.4	4.7 ± 1.6	11.9 ± 1.2	12.0 ± 2.8	15.7 ± 1.7	15.8 ± 5.6	15.2 ± 3.2
16:2n6 ^a	1.7 ± 1.4 ^b	1.5 ± 0.2	1.9 ± 1.1	1.0 ± 0.4	0.7 ± 0.6	0.5 ± 0.6	0.4 ± 0.3	0.4 ± 0.3
17:0	0.3 ± 0.3 ^b	0.7 ± 0.1	0.6 ± 0.3	0.9 ± 0.1	0.7 ± 0.2	0.5 ± 0.1	0.5 ± 0.1	0.7 ± 0.2
nd3	2.1 ± 1.8 ^b	2.1 ± 0.6	3.5 ± 2.1	1.6 ± 0.8	1.4 ± 1.3	0.4 ± 0.2	0.7 ± 0.7	0.8 ± 0.7
18:0	1.9 ± 1.4 ^b	8.5 ± 1.8	8.3 ± 1.8	3.5 ± 1.1	3.6 ± 1.7	1.9 ± 0.6	2.4 ± 1.7	2.6 ± 0.9
18:1n9 ^a	0.3 ± 0.4 ^b	1.8 ± 0.7	3.3 ± 2.2	2.0 ± 1.0	2.8 ± 2.3	0.6 ± 0.2	0.5 ± 0.5	1.1 ± 0.9
18:1n7 ^a	0.3 ± 0.1 ^b	4.7 ± 0.5	5.7 ± 3.6	2.4 ± 0.4	1.8 ± 0.7	1.2 ± 0.3	1.8 ± 1.6	1.6 ± 0.5
18:2n6 ^a	0.3 ± 0.2 ^b	1.5 ± 0.4	1.1 ± 0.4	1.4 ± 0.2	1.0 ± 0.2	1.1 ± 0.1	1.0 ± 0.2	1.2 ± 0.2
18:2n4 ^a	0.4 ± 0.1 ^b	1.8 ± 0.4	2.9 ± 1.7	1.4 ± 0.8	1.1 ± 0.9	0.3 ± 0.1	0.4 ± 0.4	1.0 ± 1.0
18:3n3 ^a	0.1 ± 0.1 ^b	2.1 ± 0.7	0.9 ± 0.4	1.4 ± 0.2	0.8 ± 0.2	0.7 ± 0.1	0.7 ± 0.4	1.1 ± 0.2
18:4n3 ^a	0.2 ± 0.1 ^b	1.8 ± 0.7	0.9 ± 0.5	4.2 ± 0.8	2.5 ± 0.8	2.5 ± 0.2	2.6 ± 1.2	4.6 ± 1.2
18:5n1	1.3 ± 0.5 ^b	2.6 ± 0.8	3.7 ± 2.7	1.8 ± 1.3	1.4 ± 1.3	0.5 ± 0.2	0.8 ± 0.7	1.3 ± 1.2
20:0	0.1 ± 0.1	1.1 ± 0.2	1.1 ± 0.2	0.7 ± 0.1	0.5 ± 0.2	0.4 ± 0.1	0.5 ± 0.2	0.5 ± 0.1
nd4 ^a	1.8 ± 1.7	1.6 ± 0.6	3.0 ± 2.6	2.5 ± 1.5	4.2 ± 3.4	0.7 ± 0.6	0.7 ± 0.8	2.3 ± 2.4
20:1n9	0.1 ± 0.0 ^b	2.2 ± 0.6	2.1 ± 1.3	0.7 ± 0.2	0.7 ± 0.3	0.4 ± 0.1	0.6 ± 0.2	0.4 ± 0.1
20:1n7	0.9 ± 0.5	0.1 ± 0.1	0.3 ± 0.2	0.2 ± 0.0	0.2 ± 0.1	0.2 ± 0.1	0.1 ± 0.1	0.1 ± 0.0
20:2n6	0.5 ± 0.3 ^b	–	–	0.2 ± 0.1	0.2 ± 0.1	0.2 ± 0.0	0.1 ± 0.0	0.2 ± 0.1
20:4n6	0.3 ± 0.2	0.3 ± 0.1	0.2 ± 0.1	0.6 ± 0.1	0.7 ± 0.2	1.0 ± 0.1	0.9 ± 0.3	0.5 ± 0.1
20:3n3	0.5 ± 0.3 ^b	0.5 ± 0.2	0.4 ± 0.3	0.2 ± 0.1	0.2 ± 0.1	0.1 ± 0.0	0.1 ± 0.1	0.2 ± 0.1
20:5n3 ^a	6.5 ± 3.1 ^b	5.8 ± 1.1	6.1 ± 1.3	12.7 ± 2.3	13.8 ± 3.3	20.7 ± 1.6	20.5 ± 6.7	9.9 ± 2.3
22:0	1.1 ± 0.5 ^b	0.7 ± 0.2	0.5 ± 0.3	0.3 ± 0.1	0.3 ± 0.1	0.3 ± 0.1	0.3 ± 0.1	0.3 ± 0.1
22:1n9	–	1.0 ± 0.4	0.9 ± 0.7	0.7 ± 0.5	0.4 ± 0.4	0.2 ± 0.1	0.4 ± 0.5	–
21:5n3 ^a	– ^b	1.2 ± 0.4	1.0 ± 0.8	0.8 ± 0.4	0.8 ± 0.4	0.3 ± 0.1	0.4 ± 0.4	0.7 ± 0.7
22:5n6 ^a	0.2 ± 0.2 ^b	0.2 ± 0.2	0.1 ± 0.2	0.4 ± 0.1	0.2 ± 0.1	0.2 ± 0.1	0.2 ± 0.1	–
22:5n3 ^a	6.6 ± 4.8	1.6 ± 0.5	1.7 ± 1.2	1.1 ± 0.6	0.8 ± 0.5	0.4 ± 0.3	0.7 ± 0.6	0.5 ± 0.4
24:0 ^a	0.5 ± 0.3	0.7 ± 0.2	0.5 ± 0.4	0.3 ± 0.1	0.3 ± 0.1	0.2 ± 0.1	0.2 ± 0.1	0.2 ± 0.0
22:6n3 ^a	0.3 ± 0.1 ^b	2.0 ± 0.9	1.3 ± 0.8	4.5 ± 1.4	4.0 ± 1.3	4.1 ± 0.3	3.9 ± 0.9	4.5 ± 1.5
24:1n9	0.3 ± 0.2	0.3 ± 0.5	0.6 ± 1.0	0.1 ± 0.2	0.2 ± 0.2	–	0.2 ± 0.1	0.1 ± 0.1
nd5	4.8 ± 2.3 ^b	1.6 ± 0.4	1.0 ± 0.6	0.4 ± 0.1	0.8 ± 0.4	0.4 ± 0.1	0.5 ± 0.6	0.4 ± 0.3
nd6	1.9 ± 1.7 ^b	1.3 ± 0.5	1.5 ± 1.2	1.0 ± 0.7	0.6 ± 0.4	0.3 ± 0.4	0.5 ± 0.6	0.3 ± 0.2
FA ind. ⁻¹ (1.0 + 0.4) × 10 ⁻³ (ng)		1.2 ± 0.3	1.7 ± 0.7	8.6 ± 1.4	24.2 ± 8.8	152 ± 49	590 ± 340	720 ± 390
Groups								
SFA	20.2 ± 8.4	37.5 ± 3.0	31.4 ± 5.2	28.0 ± 2.6	28.1 ± 4.8	31.7 ± 2.1	29.3 ± 2.5	27.5 ± 2.8
MUFA	11.8 ± 5.8	16.5 ± 1.9	19 ± 4.9	18.7 ± 1.7	18.8 ± 3.7	18.9 ± 1.7	20.2 ± 5.9	19.1 ± 2.3
PUFA	19 ± 6.0	22.9 ± 2.1	22 ± 4.1	31.7 ± 3.3	28 ± 4.1	32.6 ± 1.8	33 ± 7.0	26.2 ± 3.5
n-3	14.2 ± 5.8	15.0 ± 1.9	12.3 ± 2.2	22.1 ± 2.9	22.9 ± 3.7	28.8 ± 1.7	29 ± 6.9	21.5 ± 3.1
n-6	3.0 ± 1.5	3.5 ± 0.5	3.3 ± 1.2	3.6 ± 0.5	2.8 ± 0.7	3.0 ± 0.6	2.6 ± 0.5	2.3 ± 0.4

^aFatty acids showing a significant difference (regression analysis: p < 0.05) between animals fed *Chaetoceros calcitrans* compared to *Isochrysis* sp. throughout the life cycle

^bFatty acids that differ significantly (*t*-test: p < 0.05) from the respective values for *Isochrysis* sp. (Table A)

Table C. Fatty acid composition of *Oikopleura dioica* fed a standard food regime. Animals were sampled every 24 h up to maturity. The major fatty acids are given as a percentage of total composition with standard deviation. Total fatty acids per individual and percent proportion of 5 major groups of fatty acids (Groups) are also given. nd: identity not determined

Fatty acid	<i>Oikopleura dioica</i> : standard food regime						
	24 h	48 h	60 h	84 h	112 h	136 h	160 h
14:0 ^a	5.2 ± 1.0	5.4 ± 1.3	7.2 ± 1.1	8.8 ± 2.6	8.2 ± 3.2	8.8 ± 1.7	7.9 ± 3.0
14:1n5 ^a	0.3 ± 0.2	0.3 ± 0.1	0.3 ± 0.1	0.2 ± 0.1	0.1 ± 0.1	0.1 ± 0.0	0.1 ± 0.1
15:0 ^a	1.6 ± 0.2	1.3 ± 0.3	1.6 ± 0.4	1.5 ± 0.5	1.0 ± 0.3	1.2 ± 0.2	1.3 ± 0.4
nd1	1.0 ± 0.4	1.6 ± 0.6	0.9 ± 0.5	0.6 ± 0.3	0.8 ± 0.6	1.0 ± 0.5	0.7 ± 0.4
16:0 ^a	15.8 ± 1.5	12.0 ± 2.1	13.7 ± 2.2	16.6 ± 4.1	15.1 ± 2.6	15.2 ± 1.5	15.7 ± 3.5
16:1n9	–	–	–	–	–	–	–
16:1n7 ^a	16.0 ± 1.5	12.2 ± 2.1	13.9 ± 2.2	16.8 ± 4.1	14.7 ± 4.0	15.4 ± 1.5	15.9 ± 3.6
16:2n6 ^a	1.2 ± 0.5	1.9 ± 0.9	1.3 ± 0.7	0.7 ± 0.3	0.7 ± 0.6	0.9 ± 0.4	0.6 ± 0.3
17:0 ^a	0.6 ± 0.1	0.5 ± 0.1	0.5 ± 0.2	0.5 ± 0.1	0.4 ± 0.1	0.5 ± 0.1	0.5 ± 0.2
16:4n1	1.7 ± 0.7	2.8 ± 1.1	1.4 ± 1.1	0.8 ± 0.4	1.2 ± 1.0	1.6 ± 0.9	0.9 ± 0.6
18:0	5.1 ± 0.9	3.4 ± 0.9	3.0 ± 1.1	3.2 ± 1.4	5.4 ± 5.2	3.7 ± 1.3	2.3 ± 0.9
18:1n9	1.9 ± 0.8	3.0 ± 0.8	1.1 ± 0.6	1.1 ± 0.6	1.5 ± 1.0	2.5 ± 1.0	1.2 ± 0.8
18:1n7	2.1 ± 1.9	0.5 ± 1.5	4.2 ± 1.8	2.8 ± 2.0	2.3 ± 1.0	1.9 ± 0.4	1.9 ± 0.5
18:2n6 ^a	1.3 ± 0.3	1.2 ± 0.3	1.8 ± 1.3	1.4 ± 0.4	1.4 ± 0.4	1.3 ± 0.3	2.0 ± 0.4
18:2n4 ^a	1.4 ± 0.7	2.3 ± 1.1	1.2 ± 1.1	0.6 ± 0.3	0.9 ± 0.8	1.0 ± 0.7	0.6 ± 0.4
18:3n3 ^a	2.9 ± 0.6	1.8 ± 0.5	2.4 ± 0.4	1.9 ± 0.7	2.3 ± 0.9	2.0 ± 0.7	2.6 ± 0.8
18:4n3 ^a	2.4 ± 0.5	3.4 ± 1.1	5.7 ± 1.4	5.2 ± 1.9	6.5 ± 2.6	5.8 ± 2.0	6.8 ± 2.0
18:5n1	1.8 ± 0.8	2.9 ± 1.1	1.6 ± 1.2	1.0 ± 0.6	1.3 ± 1.0	1.6 ± 0.9	1.0 ± 0.6
20:0 ^a	0.5 ± 0.1	0.3 ± 0.1	0.4 ± 0.1	0.3 ± 0.1	0.4 ± 0.2	0.4 ± 1.0	0.5 ± 0.2
nd2	2.2 ± 1.2	5.6 ± 1.9	1.6 ± 1.0	1.3 ± 0.8	2.1 ± 1.6	2.9 ± 1.6	1.5 ± 1.6
20:1n9 ^a	1.1 ± 0.2	0.7 ± 0.3	0.8 ± 0.2	0.7 ± 0.2	0.5 ± 0.1	0.5 ± 0.2	0.3 ± 0.1
20:1n7	0.9 ± 0.6	0.4 ± 0.2	0.4 ± 0.1	0.3 ± 0.1	0.3 ± 0.1	0.3 ± 0.1	0.2 ± 0.1
20:2n6	0.1 ± 0.2	0.1 ± 0.1	0.1 ± 0.0	0.1 ± 0.1	0.1 ± 0.1	0.1 ± 0.1	0.1 ± 0.0
PUFA	1.7 ± 0.8	2.5 ± 1.1	0.5 ± 0.1	1.1 ± 1.0	0.8 ± 0.9	1.1 ± 1.0	0.7 ± 0.6
20:4n6 ^a	0.4 ± 0.1	0.3 ± 0.1	0.4 ± 0.1	0.3 ± 0.1	0.4 ± 0.1	0.4 ± 0.1	0.7 ± 0.1
20:3n3	0.5 ± 0.1	0.5 ± 0.1	0.5 ± 0.1	0.4 ± 0.2	0.1 ± 0.1	0.4 ± 0.1	0.2 ± 0.0
20:5n3 ^a	8.2 ± 1.4	7.2 ± 0.8	8.1 ± 1.0	6.6 ± 2.8	7.1 ± 2.3	8.4 ± 2.0	10.4 ± 2.5
22:0	0.5 ± 0.1	0.2 ± 0.0	0.3 ± 0.1	0.2 ± 0.1	0.3 ± 0.2	0.2 ± 0.0	0.3 ± 0.1
22:1n9	0.7 ± 0.9	0.8 ± 0.8	0.4 ± 0.5	3.2 ± 8.1	0.7 ± 0.5	0.4 ± 0.3	0.6 ± 0.3
nd4	0.1 ± 0.7	2.0 ± 0.9	1.1 ± 0.8	1.5 ± 3.0	0.9 ± 0.7	1.0 ± 0.5	0.5 ± 0.3
21:5n3 ^a	0.6 ± 0.2	0.6 ± 0.3	1.1 ± 0.3	1.0 ± 0.4	1.2 ± 0.6	1.0 ± 0.3	1.2 ± 0.4
22:5n6 ^a	0.8 ± 0.5	2.5 ± 0.8	1.0 ± 0.7	2.3 ± 6.0	1.0 ± 0.8	1.4 ± 0.8	0.8 ± 0.6
22:5n3 ^a	0.1 ± 0.1	0.1 ± 0.1	0.1 ± 0.1	–	0.5 ± 1.3	–	0.1 ± 0.1
24:0a	0.5 ± 0.2	0.3 ± 0.1	0.4 ± 0.1	0.4 ± 0.1	0.4 ± 0.2	0.3 ± 0.1	0.3 ± 0.1
22:6n3 ^a	6.2 ± 1.6	5.1 ± 1.9	8.4 ± 2.2	6.2 ± 2.4	7.4 ± 3.9	5.9 ± 2.4	8.0 ± 2.6
24:1n9	0.4 ± 0.4	0.6 ± 0.3	0.6 ± 0.4	0.8 ± 1.2	0.3 ± 0.2	0.6 ± 0.2	0.5 ± 0.3
FA ind. ⁻¹ (ng)	6.2 ± 1.3	11.8 ± 0.7	16.5 ± 3.6	40.1 ± 15	130 ± 50	260 ± 110	500 ± 200
Groups							
SFA	29.7 ± 2.0	23.5 ± 2.7	27.2 ± 2.7	31.5 ± 5.1	31 ± 6.7	30.4 ± 2.8	28.0 ± 4.7
MUFA	24.4 ± 2.8	18.4 ± 2.9	21.7 ± 3.0	26 ± 9.4	20.4 ± 4.3	21.7 ± 1.9	20.8 ± 3.7
PUFA	31.1 ± 2.8	35 ± 3.5	37 ± 3.8	30 ± 7.5	33 ± 5.9	33 ± 4.3	37.0 ± 4.4
n-3	20.7 ± 2.3	18.8 ± 2.4	26.4 ± 2.8	21.4 ± 4.2	25 ± 5.5	23.4 ± 3.8	29.3 ± 4.2
n-6	3.8 ± 0.8	5.9 ± 1.2	4.7 ± 1.6	4.0 ± 6.0	3.5 ± 1.1	4.1 ± 1.0	4.3 ± 0.8

^aFatty acids showing a significant difference (regression analysis: p < 0.05) between animals fed a standard compared to a limited food regime throughout the life cycle

Table D. Fatty acid composition of *Oikopleura dioica* fed a limited food regime. Animals were sampled every 24 h up to maturity. The major fatty acids are given as a percent of total composition with standard deviation. Total fatty acids per individual and percent proportion of 5 major groups of fatty acids (Groups) are also given. nd: identity not determined

Fatty acid	<i>Oikopleura dioica</i> : limited food regime						
	24 h	48 h	60 h	84 h	112 h	136 h	160 h
14:0 ^a	5.2 ± 1.0	4.0 ± 1.0	5.0 ± 1.5	4.3 ± 1.1	4.8 ± 0.8	3.9 ± 0.6	4.1 ± 0.9
14:1n5 ^a	0.3 ± 0.2	0.4 ± 0.2	0.3 ± 0.1	0.3 ± 0.1	0.2 ± 0.0	0.1 ± 0.0	0.2 ± 0.1
15:0 ^a	1.6 ± 0.2	1.4 ± 0.4	1.8 ± 0.5	1.7 ± 0.6	1.3 ± 0.3	1.0 ± 0.1	0.3 ± 0.3
nd1	1.0 ± 0.4	1.1 ± 0.7	1.1 ± 0.3	1.3 ± 0.6	1.2 ± 0.5	1.5 ± 0.5	1.3 ± 0.5
16:0 ^a	15.8 ± 1.5	15.0 ± 3.9	15.4 ± 3.2	16.9 ± 3.3	18.0 ± 3.5	12.4 ± 2.0	16.5 ± 2.7
16:1n9	–	–	–	–	–	–	–
16:1n7 ^a	16.0 ± 1.5	15.2 ± 4.0	15.6 ± 3.3	17.2 ± 3.3	18.3 ± 3.6	12.6 ± 2.1	16.8 ± 2.7
16:2n6 ^a	1.2 ± 0.5	1.4 ± 0.9	1.2 ± 0.5	1.1 ± 0.7	0.9 ± 0.8	1.6 ± 0.5	0.8 ± 0.5
17:0 ^a	0.6 ± 0.1	0.6 ± 0.2	0.6 ± 0.2	0.7 ± 0.3	0.6 ± 0.2	0.4 ± 0.1	0.6 ± 0.2
16:4n1	1.7 ± 0.7	2.0 ± 1.3	1.7 ± 0.5	1.9 ± 0.1	2.1 ± 1.1	2.7 ± 1.0	1.5 ± 0.8
18:0	5.1 ± 0.9	5.3 ± 2.0	4.7 ± 1.4	5.3 ± 2.2	6.7 ± 2.0	3.4 ± 0.6	5.2 ± 2.4
18:1n9	1.9 ± 0.8	2.1 ± 1.5	1.7 ± 0.9	2.5 ± 1.6	2.6 ± 1.2	4.5 ± 1.5	1.7 ± 1.1
18:1n7	2.1 ± 1.9	1.9 ± 1.8	3.0 ± 2.3	2.4 ± 2.5	2.8 ± 0.7	1.3 ± 0.9	2.8 ± 0.8
18:2n6 ^a	1.3 ± 0.3	1.0 ± 0.3	1.2 ± 0.3	1.2 ± 1.6	1.0 ± 0.3	1.1 ± 0.3	1.6 ± 0.6
18:2n4 ^a	1.4 ± 0.7	1.7 ± 1.1	1.4 ± 0.5	1.3 ± 0.8	1.6 ± 0.9	2.0 ± 0.7	0.6 ± 0.7
18:3n3 ^a	2.9 ± 0.6	1.2 ± 0.4	1.4 ± 0.5	1.0 ± 0.4	1.0 ± 0.3	1.5 ± 0.5	1.7 ± 0.9
18:4n3 ^a	2.4 ± 0.5	1.7 ± 0.7	2.8 ± 1.3	2.9 ± 1.6	3.2 ± 1.2	5.2 ± 1.7	5.5 ± 3.0
18:5n1	1.8 ± 0.8	2.2 ± 1.4	1.8 ± 0.7	1.9 ± 1.0	2.1 ± 1.0	2.6 ± 0.9	1.5 ± 0.8
20:0 ^a	0.5 ± 0.1	0.5 ± 0.1	0.5 ± 0.1	0.5 ± 0.2	0.6 ± 0.1	0.5 ± 0.1	0.8 ± 0.2
nd2	2.2 ± 1.2	2.5 ± 2.1	2.8 ± 2.5	3.6 ± 2.9	3.2 ± 2.3	5.9 ± 2.2	1.8 ± 1.4
20:1n9 ^a	1.1 ± 0.2	1.3 ± 0.4	1.1 ± 0.2	0.7 ± 0.4	0.9 ± 0.3	0.8 ± 0.2	1.2 ± 0.5
20:1n7	0.9 ± 0.6	0.9 ± 0.2	0.5 ± 0.1	0.5 ± 0.2	0.5 ± 0.2	0.3 ± 0.1	0.4 ± 0.2
20:2n6	0.1 ± 0.2	0.1 ± 0.1	0.1 ± 0.1	0.1 ± 0.1	–	0.1 ± 0.1	0.1 ± 0.1
PUFA	1.7 ± 0.8	2.2 ± 1.3	1.8 ± 0.7	1.8 ± 0.7	1.7 ± 0.7	2.3 ± 0.8	0.9 ± 0.8
20:4n6 ^a	0.4 ± 0.1	0.3 ± 0.1	0.1 ± 0.2	0.3 ± 0.1	0.3 ± 0.1	0.4 ± 0.1	0.6 ± 0.2
20:3n3	0.5 ± 0.1	0.4 ± 0.1	0.7 ± 0.3	0.7 ± 0.2	0.5 ± 0.2	0.4 ± 0.1	0.3 ± 0.1
20:5n3 ^a	8.2 ± 1.4	6.7 ± 3.1	6.8 ± 2.9	6.2 ± 2.1	5.3 ± 1.1	8.9 ± 1.1	7.7 ± 3.5
22:0	0.5 ± 0.1	0.4 ± 0.1	0.4 ± 0.1	0.3 ± 0.2	0.3 ± 0.1	0.3 ± 0.1	0.3 ± 0.1
22:1n9	0.7 ± 0.9	3.7 ± 6.3	0.7 ± 0.8	0.9 ± 1.2	0.1 ± 0.1	0.2 ± 0.2	0.5 ± 0.3
nd3	0.1 ± 0.7	2.1 ± 2.6	1.4 ± 0.5	1.2 ± 0.5	1.2 ± 0.5	1.6 ± 0.6	0.8 ± 0.6
21:5n3 ^a	0.6 ± 0.2	0.5 ± 0.2	0.6 ± 0.2	0.5 ± 0.3	0.4 ± 0.2	0.6 ± 0.2	0.7 ± 0.3
22:5n6 ^a	0.8 ± 0.5	0.6 ± 1.0	1.2 ± 0.6	1.2 ± 0.8	1.5 ± 0.8	2.3 ± 1.0	1.0 ± 0.9
22:5n3 ^a	0.1 ± 0.1	–	0.1 ± 0.1	–	0.1 ± 0.1	–	–
24:0 ^a	0.5 ± 0.2	0.5 ± 0.1	0.5 ± 0.1	0.5 ± 0.3	0.5 ± 0.2	0.3 ± 0.1	0.3 ± 0.1
22:6n3 ^a	6.2 ± 1.6	3.6 ± 1.6	5.0 ± 2.6	4.1 ± 2.4	2.6 ± 1.0	4.7 ± 1.9	5.4 ± 2.6
24:1n9	0.4 ± 0.4	0.6 ± 0.6	0.6 ± 0.3	0.5 ± 0.3	0.3 ± 0.1	0.7 ± 0.4	0.8 ± 0.6
FA ind. ⁻¹ (ng)	6.2 ± 1.3	7.9 ± 2.4	10.7 ± 2.4	30 ± 12	62 ± 16	216 ± 47	300 ± 100
Groups							
SFA	29.7 ± 2.0	27.6 ± 4.5	28.9 ± 3.8	30.4 ± 4.2	32.7 ± 4.1	22.1 ± 2.2	29.1 ± 3.7
MUFA	24.4 ± 2.8	26 ± 7.9	23.5 ± 4.2	24.9 ± 4.6	25.8 ± 3.9	20.6 ± 2.8	24.3 ± 3.1
PUFA	31.1 ± 2.8	26 ± 4.6	28 ± 4.4	26 ± 4.3	24.5 ± 3.0	36 ± 3.5	32.3 ± 7.7
n-3	20.7 ± 2.3	14.2 ± 3.6	27.4 ± 4.2	15.5 ± 3.6	13.2 ± 2.0	21.4 ± 2.8	21.0 ± 5.4
n-6	3.8 ± 0.8	3.4 ± 1.4	4.1 ± 0.9	3.9 ± 1.9	3.8 ± 1.2	5.4 ± 1.2	4.1 ± 1.2

^aFatty acids showing a significant difference (regression analysis: p < 0.05) between animals fed a limited compared to a standard food regime throughout the life cycle

Table E. Fatty acid compositions of *Oikopleura dioica* males and females under different dietary regimes. Total fatty acids per individual and percent proportion of 5 major groups of fatty acids (Groups) are also given. nd: identity not determined

Fatty acid	<i>Isochrysis</i> sp.		<i>Chaetoceros calcitrans</i>		Standard		Limited	
	Male	Female	Male	Female	Male	Female	Male	Female
14:0	9.2 ± 0.8	9.0 ± 0.7	6.4 ± 1.4	7.2 ± 1.8	8.1 ± 0.9	8.8 ± 0.9	7.6 ± 1.5	7.4 ± 0.3
14:1n5	0.2 ± 0.1 ^a	0.5 ± 0.1	0.5 ± 0.1 ^a	0.8 ± 0.2	0.4 ± 0.2	0.5 ± 0.1	0.5 ± 0.1 ^a	0.7 ± 0.1
nd1	4.3 ± 0.6 ^a	2.8 ± 0.2	5.7 ± 1.2	6.2 ± 1.9	4.6 ± 0.6	4.0 ± 0.2	4.8 ± 0.7	4.0 ± 0.7
nd2	2.5 ± 0.1 ^a	2.0 ± 0.2	2.3 ± 0.3	2.3 ± 0.5	2.2 ± 0.2	2.0 ± 0.1	2.4 ± 0.3	0.2 ± 0.1
15:0	0.8 ± 0.2	0.6 ± 0.1	0.9 ± 0.1	0.9 ± 0.2	^a 0.8 ± 0.0	0.6 ± 0.0	0.7 ± 0.1	0.7 ± 0.1
16:0	20.5 ± 0.9 ^a	14.2 ± 0.8	16.8 ± 2.2	14.3 ± 1.4	15.0 ± 1.7	13.7 ± 0.8	18.5 ± 1.8 ^a	14.7 ± 0.7
16:1n7	14.1 ± 1.1	13.3 ± 0.7	15.0 ± 3.4	15.3 ± 3.3	^a 13.6 ± 0.7	15.0 ± 1.1	15.3 ± 1.7	16.4 ± 1.0
16:2n6	0.3 ± 0.1 ^a	0.2 ± 0.1	0.5 ± 0.3	0.4 ± 0.3	^a 0.5 ± 0.2	0.2 ± 0.1	0.2 ± 0.0	0.2 ± 0.0
17:0	0.8 ± 0.1 ^a	0.6 ± 0.0	0.8 ± 0.2	0.7 ± 0.3	^a 0.8 ± 0.1	0.6 ± 0.0	0.7 ± 0.1	0.6 ± 0.0
nd3	0.5 ± 0.3	0.2 ± 0.1	0.9 ± 0.8	0.7 ± 0.6	^a 0.9 ± 0.4	0.2 ± 0.2	0.3 ± 0.1	0.2 ± 0.1
18:0	3.7 ± 1.0 ^a	1.9 ± 0.6	3.0 ± 1.0	2.3 ± 0.7	^a 2.6 ± 0.3	1.7 ± 0.2	2.3 ± 0.4 ^a	1.8 ± 0.3
18:1n9	0.5 ± 0.1 ^a	0.2 ± 0.0	1.2 ± 1.1	0.9 ± 0.6	^a 1.4 ± 0.7	0.5 ± 0.6	0.5 ± 0.2	0.3 ± 0.2
18:1n7	2.8 ± 0.3 ^a	2.0 ± 0.3	1.9 ± 0.4 ^a	1.3 ± 0.4	^a 1.9 ± 0.3	1.4 ± 0.1	1.8 ± 0.3 ^a	1.3 ± 0.3
18:2n6	1.5 ± 0.5 ^a	2.1 ± 0.1	1.2 ± 0.2	1.2 ± 0.2	^a 1.3 ± 0.2	1.7 ± 0.1	1.4 ± 0.1 ^a	1.6 ± 0.1
18:2n4	0.5 ± 0.3	0.2 ± 0.1	1.3 ± 1.2	0.7 ± 0.7	1.1 ± 0.6	0.3 ± 0.2	0.5 ± 0.2	0.3 ± 0.1
18:3n3	2.1 ± 0.5 ^a	3.3 ± 0.2	1.0 ± 0.3	1.2 ± 0.1	^a 2.1 ± 0.5	2.9 ± 0.2	1.7 ± 0.2 ^a	2.3 ± 0.3
18:4n3	6.1 ± 1.5 ^a	12.1 ± 1.0	3.9 ± 1.3	5.2 ± 0.9	^a 6.3 ± 1.4	11.0 ± 0.9	6.2 ± 1.0 ^a	9.1 ± 1.0
18:5n1	0.7 ± 0.4	0.3 ± 0.3	1.7 ± 1.5	0.9 ± 0.7	^a 1.6 ± 0.8	0.4 ± 0.4	0.7 ± 0.7	0.3 ± 0.2
20:0	0.6 ± 0.1	0.5 ± 0.1	0.4 ± 0.1	0.6 ± 0.2	0.4 ± 0.1	0.5 ± 0.0	0.4 ± 0.1 ^a	0.5 ± 0.0
nd4	0.5 ± 0.2	0.3 ± 0.1	2.6 ± 3.3	2.0 ± 1.2	4.0 ± 2.3	1.4 ± 2.4	0.4 ± 0.1	0.5 ± 0.5
20:1n9	0.6 ± 0.1 ^a	0.3 ± 0.1	0.5 ± 0.1 ^a	0.3 ± 0.1	0.4 ± 0.1	0.3 ± 0.1	0.4 ± 0.1	0.4 ± 0.2
20:1n7	0.1 ± 0.1 ^a	0.2 ± 0.0	0.1 ± 0.0	0.1 ± 0.0	^a 0.1 ± 0.0	0.2 ± 0.0	0.1 ± 0.0 ^a	0.2 ± 0.0
20:2n6	0.3 ± 0.1 ^a	0.1 ± 0.0	0.3 ± 0.0 ^a	0.1 ± 0.0 ^a	0.2 ± 0.0	0.1 ± 0.1	0.2 ± 0.1	0.1 ± 0.0
20:4n6	0.5 ± 0.1 ^a	0.8 ± 0.1	0.5 ± 0.1	0.5 ± 0.1	0.6 ± 0.1	0.7 ± 0.1	0.5 ± 0.0	0.6 ± 0.1
20:3n3	0.2 ± 0.1	0.2 ± 0.0	0.2 ± 0.1	0.1 ± 0.1	0.3 ± 0.1	0.2 ± 0.0	0.2 ± 0.0 ^a	0.1 ± 0.0
20:5n3	6.5 ± 1.5 ^a	9.9 ± 0.5	8.4 ± 1.5 ^a	11.4 ± 2.1	^a 8.1 ± 1.3	11.0 ± 1.3	10.1 ± 2.7	12.3 ± 1.1
22:0	0.1 ± 0.1 ^a	0.5 ± 0.1	0.2 ± 0.0 ^a	0.3 ± 0.1	^a 0.2 ± 0.1	0.4 ± 0.1	0.1 ± 0.1 ^a	0.4 ± 0.1
22:1n9	–	–	–	0.1 ± 0.1	–	–	–	–
21:5n3	0.4 ± 0.2	0.3 ± 0.1	1.0 ± 0.9	0.5 ± 0.4	^a 0.8 ± 0.4	0.3 ± 0.1	0.7 ± 0.7	0.2 ± 0.2
22:5n6	0.7 ± 0.2 ^a	1.4 ± 0.3	– ^a	0.1 ± 0.1	^a 0.6 ± 0.1	0.8 ± 0.1	0.2 ± 0.1 ^a	0.4 ± 0.1
22:5n3	0.4 ± 0.2	0.2 ± 0.1	0.7 ± 0.5	0.4 ± 0.3	0.6 ± 0.4	0.2 ± 0.1	0.4 ± 0.5	0.1 ± 0.1
24:0	0.2 ± 0.0	0.2 ± 0.0	0.2 ± 0.0 ^a	0.1 ± 0.0	0.2 ± 0.0	0.1 ± 0.0	0.2 ± 0.0 ^a	0.1 ± 0.0
22:6n3	4.5 ± 1.3 ^a	9.0 ± 1.4	3.5 ± 1.1 ^a	5.5 ± 1.2	^a 4.6 ± 1.1	7.5 ± 0.9	5.6 ± 0.9 ^a	7.6 ± 0.4
24:1n9	–	0.1 ± 0.0	–	0.1 ± 0.0	0.1 ± 0.1	0.1 ± 0.1	0.1 ± 0.0	0.1 ± 0.1
nd5	0.4 ± 0.1 ^a	0.1 ± 0.0	0.5 ± 0.4	0.4 ± 0.1	^a 0.6 ± 0.1	0.3 ± 0.1	0.5 ± 0.2	0.3 ± 0.2
nd6	0.1 ± 0.2 ^a	0.1 ± 0.1	0.3 ± 0.2	0.2 ± 0.2	^a 0.3 ± 0.2	0.1 ± 0.1	0.1 ± 0.2	–
Groups								
SFA	35.9 ± 1.6 ^a	27.4 ± 1.2	28.7 ± 2.8	26.5 ± 2.4	27.9 ± 2.0	26.3 ± 1.2	30.5 ± 2.4 ^a	26.3 ± 0.8
MUFA	18.3 ± 1.2 ^a	16.6 ± 0.8	19.3 ± 3.6	18.8 ± 3.4	17.9 ± 1.1	17.9 ± 1.3	18.6 ± 1.7	19.4 ± 1.1
PUFA	25.1 ± 2.7 ^a	40.2 ± 1.9	25 ± 3.2	28.8 ± 2.8	29.6 ± 2.6 ^a	37.4 ± 1.9	29.0 ± 3.2	35.7 ± 1.6
n-3	20.2 ± 2.6 ^a	34.9 ± 1.8	18.7 ± 2.5 ^a	24.3 ± 2.6	22.8 ± 2.3 ^a	32.9 ± 1.8	24.9 ± 3.1 ^a	31.8 ± 1.6
n-6	3.4 ± 0.6 ^a	4.6 ± 0.3	3.1 ± 0.4	3.5 ± 0.4	2.7 ± 0.3	2.9 ± 0.2	2.4 ± 0.2 ^a	2.3 ± 0.2

^aValues showing significant differences (*t*-test, *p* < 0.05) between males and females for a given food regime (shown beside male value only)

Table F. Fatty acid composition of *Oikopleura dioica* fecal pellets under different dietary regimes. The major fatty acids are given as a percent of total composition with standard deviation of the fecal pellets at the specified times. Total fatty acids per individual and percent proportion of 5 major groups of fatty acids (Groups) are also given. nd: identity not determined

Fatty acid	Qualitative diet				Fatty acid	Quantitative diet					
	<i>Isochrysis</i> sp.		<i>Chaetoceros calcitrans</i>			Standard		Limited			
	96 h	144 h	96 h	144 h	112 h	1 36 h	160 h	112 h	136 h	160 h	
14:0	5.7 ± 1.7	7.1 ± 0.8	4.2 ± 1.5	2.2 ± 0.6	14:0	4.4 ± 1.5	7.3 ± 2.6	4.4 ± 1.5	1.8 ± 0.6	2.7 ± 1.0	2.8 ± 0.8
14:1n5	0.7 ± 0.3	0.7 ± 0.4	1.2 ± 0.4	0.9 ± 0.6	14:1n5	0.3 ± 0.1	0.3 ± 0.1	0.3 ± 0.1	0.3 ± 0.1	0.3 ± 0.2	0.4 ± 0.2
nd1	0.8 ± 1.1	2.0 ± 0.6	0.3 ± 0.1	3.0 ± 1.1	15:0	1.2 ± 0.6	1.6 ± 0.2	1.8 ± 0.7	0.8 ± 0.4	1.4 ± 0.4	1.7 ± 0.6
nd2	2.4 ± 0.4	1.8 ± 0.4	2.5 ± 1.1	1.5 ± 0.5	nd1	1.7 ± 1.1	1.6 ± 0.9	3.4 ± 0.6	2.8 ± 0.4	2.0 ± 0.7	2.7 ± 0.4
15:0	2.3 ± 0.3	1.8 ± 0.4	1.9 ± 0.6	1.6 ± 0.7	16:0	15.2 ± 4.4	22.2 ± 3.9	16.7 ± 4.5	11.1 ± 3.1	16.5 ± 3.5	18.6 ± 3.5
16:0	25.2 ± 3.2	19.0 ± 2.2	19.9 ± 7.7	13.3 ± 4.8	16:1n9	–	–	–	–	–	–
16:1n9	–	–	–	–	16:1n7	10 ± 11	4.2 ± 2.1	3.1 ± 1.6	1.7 ± 0.8	15.4 ± 4.5	2.3 ± 1.7
16:1n7	3.4 ± 1.1	2.4 ± 0.6	4.7 ± 3.0	2.0 ± 0.7	16:2n6	0.5 ± 0.5	0.3 ± 0.6	2.4 ± 0.5	–	–	–
16:2n6	1.5 ± 0.6	1.1 ± 0.8	1.7 ± 0.9	0.9 ± 0.4	17:0	0.8 ± 0.2	1.1 ± 0.3	1.1 ± 0.3	0.7 ± 0.3	0.9 ± 0.3	1.2 ± 0.3
17:0	0.6 ± 0.4	0.5 ± 0.2	0.7 ± 0.3	0.4 ± 0.3	16:4n1	2.8 ± 2.1	1.8 ± 0.8	4.1 ± 1.1	4.7 ± 0.9	3.3 ± 1.4	2.8 ± 0.7
nd3	2.3 ± 0.5	3.2 ± 0.8	3.3 ± 1.9	4.5 ± 1.7	18:0	9.1 ± 2.3	14.4 ± 5.6	8.8 ± 1.9	8.1 ± 1.9	10.5 ± 2.4	13.4 ± 2.8
18:0	13.5 ± 1.0	10.4 ± 1.3	8.6 ± 3.0	10.2 ± 3.3	18:1n9	3.7 ± 1.8	2.6 ± 1.4	4.7 ± 1.5	6.5 ± 1.2	6.8 ± 1.8	3.4 ± 1.3
18:1n9	2.3 ± 0.9	1.8 ± 0.6	4.2 ± 2.6	3.5 ± 2.8	18:1n7	4.5 ± 1.3	3.9 ± 0.8	5.2 ± 1.5	2.2 ± 1.5	2.9 ± 2.2	5.8 ± 1.8
18:1n7	5.3 ± 3.0	5.3 ± 1.5	3.4 ± 3.7	3.9 ± 3.6	18:2n6	0.8 ± 0.2	0.3 ± 0.3	0.5 ± 0.2	0.2 ± 0.2	0.2 ± 0.2	0.3 ± 0.1
18:2n6	0.8 ± 0.4	0.6 ± 0.3	0.6 ± 0.3	0.7 ± 0.6	18:2n4	1.3 ± 1.6	0.4 ± 0.8	–	3.6 ± 0.7	2.8 ± 0.8	1.0 ± 1.4
18:2n4	2.2 ± 0.6	2.1 ± 0.5	3.3 ± 1.6	1.4 ± 0.9	18:3n3	0.6 ± 0.3	0.3 ± 0.1	0.3 ± 0.1	0.2 ± 0.1	0.2 ± 0.2	0.2 ± 0.2
18:3n3	0.5 ± 0.1	0.5 ± 0.2	0.3 ± 0.1	0.3 ± 0.1	18:4n3	1.5 ± 0.4	0.2 ± 0.2	–	0.1 ± 0.1	0.1 ± 0.2	0.2 ± 0.3
18:4n3	0.2 ± 0.3	1.3 ± 0.5	–	0.9 ± 0.3	18:5n1	2.8 ± 2.0	2.1 ± 0.8	4.6 ± 0.8	4.7 ± 1.2	3.6 ± 1.3	3.3 ± 1.1
18:5n1	2.8 ± 0.6	3.9 ± 1.0	3.8 ± 2.0	4.9 ± 1.8	20:0	0.5 ± 0.2	0.8 ± 0.2	1.0 ± 0.3	0.4 ± 0.1	0.6 ± 0.2	0.9 ± 0.2
20:0	0.7 ± 0.4	0.7 ± 0.7	0.6 ± 0.2	0.7 ± 0.9	nd2	5.1 ± 2.9	2.2 ± 1.5	7.7 ± 6.5	11.9 ± 3.3	7.7 ± 2.8	3.1 ± 1.5
nd4	2.5 ± 1.3	1.8 ± 0.9	5.4 ± 4.7	2.2 ± 1.2	20:1n9	1.5 ± 0.6	1.9 ± 1.0	0.9 ± 1.1	1.7 ± 0.5	1.9 ± 0.5	2.3 ± 0.5
20:1n9	2.1 ± 1.2	2.2 ± 1.0	2.0 ± 0.9	4.5 ± 3.4	20:1n7	0.8 ± 0.2	1.1 ± 1.5	1.0 ± 0.2	0.9 ± 0.3	1.0 ± 0.2	1.2 ± 0.2
20:1n7	0.6 ± 1.4	0.6 ± 0.6	0.1 ± 0.2	0.3 ± 0.4	20:2n6	–	–	2.1 ± 1.5	–	–	0.5 ± 1.1
20:2n6	–	–	–	–	nd3	1.5 ± 1.4	0.8 ± 1.1	–	3.6 ± 0.7	2.7 ± 0.9	1.6 ± 1.6
20:4n6	0.2 ± 0.2	0.1 ± 0.1	0.1 ± 0.1	–	20:4n6	0.1 ± 0.3	0.2 ± 0.2	0.2 ± 0.2	–	–	0.3 ± 0.4
20:3n3	0.6 ± 0.8	0.6 ± 0.3	0.3 ± 0.4	0.5 ± 0.3	20:3n3	0.7 ± 0.4	0.5 ± 0.7	–	0.8 ± 0.2	1.1 ± 0.2	0.4 ± 0.4
20:5n3	2.7 ± 0.8	3.1 ± 1.8	3.2 ± 1.8	4.9 ± 1.3	20:3n3	–	–	–	0.1 ± 0.1	–	–
22:0	–	0.4 ± 0.4	0.1 ± 0.2	0.4 ± 0.2	20:5n3	1.9 ± 1.9	1.1 ± 1.5	0.3 ± 0.4	4.4 ± 1.4	3.4 ± 1.0	2.2 ± 2.1
22:1n9	–	0.5 ± 0.9	0.2 ± 0.3	0.1 ± 0.1	22:0	0.3 ± 0.2	0.3 ± 0.4	0.1 ± 0.2	0.3 ± 1.0	0.5 ± 0.2	0.3 ± 0.3
21:5n3	–	1.1 ± 1.0	0.4 ± 0.9	0.7 ± 1.0	22:1n9	–	–	–	–	0.7 ± 1.5	–
22:5n6	–	0.1 ± 0.1	0.1 ± 0.2	0.2 ± 0.2	nd4	1.1 ± 1.2	0.6 ± 0.8	–	2.5 ± 0.8	2.0 ± 0.4	1.1 ± 1.2
22:5n3	–	1.4 ± 1.3	0.4 ± 1.0	1.2 ± 1.8	21:5n3	0.3 ± 0.2	0.5 ± 0.2	0.2 ± 0.4	0.2 ± 0.1	0.3 ± 0.2	0.4 ± 0.3
24:0	–	0.7 ± 0.9	0.1 ± 0.3	0.2 ± 0.3	22:5n6	1.4 ± 1.6	0.8 ± 1.0	0.1 ± 0.1	3.5 ± 1.3	2.6 ± 1.4	1.3 ± 1.4
22:6n3	1.1 ± 0.4	0.3 ± 0.3	0.6 ± 0.5	0.2 ± 0.2	22:5n3	0.1 ± 0.1	–	–	0.2 ± 0.2	–	0.1 ± 0.1
24:1n9	0.9 ± 0.3	0.9 ± 0.9	1.3 ± 1.4	1.0 ± 1.0	24:0	0.5 ± 0.4	0.4 ± 0.5	–	0.5 ± 0.3	0.8 ± 0.5	0.5 ± 0.5
nd5	–	1.0 ± 1.0	0.4 ± 1.0	–	22:6n3	0.9 ± 0.4	0.8 ± 0.6	3.3 ± 0.8	–	–	1.1 ± 1.5
nd6	–	1.2 ± 1.1	0.4 ± 0.8	1.0 ± 1.4	24:1n9	0.4 ± 0.3	0.1 ± 0.2	0.1 ± 0.2	0.9 ± 0.2	2.2 ± 1.0	1.2 ± 1.4
Groups											
SFA	48.1 ± 3.8	40.4 ± 3.0	36 ± 8.4	29 ± 6.0	SFA	32.1 ± 5.2	48 ± 7.3	33.9 ± 5.2	23.6 ± 3.9	33.9 ± 4.4	39.5 ± 4.6
MUFA	15.3 ± 3.8	14.4 ± 2.5	17 ± 5.7	16 ± 5.9	MUFA	26.7 ± 11.2	20 ± 3.2	15.4 ± 2.9	14.1 ± 2.2	18.2 ± 5.6	18.6 ± 3.2
PUFA	14.4 ± 1.7	17.0 ± 2.9	17 ± 3.6	18.4 ± 3.3	PUFA	17 ± 4.5	10.1 ± 2.8	18.1 ± 2.3	26.2 ± 2.7	20.3 ± 2.9	16 ± 4.1
n-3	5.1 ± 1.2	8.2 ± 2.5	5.2 ± 2.3	8.7 ± 2.5	n-3	6.0 ± 2.1	3.4 ± 1.8	4.2 ± 1.0	5.9 ± 1.4	5.2 ± 1.1	4.4 ± 2.7
n-6	2.5 ± 0.7	1.9 ± 0.9	2.6 ± 1.0	1.8 ± 0.7	n-6	2.8 ± 1.7	1.6 ± 1.2	5.2 ± 1.6	3.7 ± 1.3	2.8 ± 1.4	2.4 ± 1.8