Supplement S2.

Major fatty acids as % total FA and µg mg C-1) in algal prey and experimental copepods (mean ± SD where available, initial sample [day 0] and at the end of the feeding experiments [day 8]) in different temperature treatments. Carbon-specific mass has been estimated using average carbon values. Temperature stress experiment was held at 6°C for days 2-4, rising up to 12°C on days 6-8, with EPA and DHA values shown separately for the temperatures (all other FA are overall values). Values of >5% of total FA are emphasized in bold. Dash (-) and ‘tr’ indicate undetected and trace amounts (<1% of total FA), respectively.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fatty acid | Temperature | Heterocapsa triquetra (n = 11 at 6°C, n = 15 at 12°C) | | C. finmarchicus consuming H. triquetra | | | | Thalassiosira weissflogii (n = 14 at 6°C, n=13 at temp. stress) | | C. finmarchicus consuming T. weissflogii | | | |
|  |  | *% total FA* | *µg mg C-1* | *% total FA* | | *µg mg C-1* | | *% total FA* | *µg mg C-1* | *% total FA* | | *µg mg C-1* | |
|  |  |  |  | Initial | End (n = 3) | Initial | End (n = 3) |  |  | Initial | End (n = 3) | Initial | End (n = 3) |
| 14:0 | *6°C* | 4.9±1.2 | 11±3 | **6.6** | **6±0.2** | 8.6 | 6.4±0.8 | 4.9±1 | 25.3±11.3 | **8.5** | **8.3±1** | 12.5 | 18.2±4.3 |
|  | *12°C/temp. stress* | 4.2±0.5 | 8.6±2.6 | **6.6** | **7.8±0.3** | 5.7 | 16.2±1.3 | 5±1.4 | 15.7±9 | 4.6 | **6.4±0.3** | 6.8 | 16.8±3.1 |
| 16:0 | *6°C* | **12.3±1.3** | 27±5 | **16.4** | **10±0.7** | 21.6 | 10.7±1.7 | **19.1±2** | 94.3±33.1 | **9.7** | **12.9±0.5** | 14.2 | 28.2±3.1 |
|  | *12°C/temp. stress* | **11.8±1.4** | 23.9±6.4 | **14.6** | **9.1±0.3** | 12.4 | 19±1.1 | **15.6±3.7** | 53.2±34 | **19.1** | **8.1±0.2** | 28.1 | 21±3 |
| 16:1n-7 | *6°C* | tr | 1.9±1.3 | 1 | 1±0.4 | 1.3 | 1.1±0.6 | **18.3±4.2** | 95.6±35.1 | 1.1 | **13.8±1.1** | 1.6 | 30.3±5.8 |
|  | *12°C/temp. stress* | tr | 1.7±1 | - | - | 1.8 | 1.1±0.2 | **17.8±7.8** | 53±30.8 | 1.1 | **13.5±0.3** | 1.6 | 35±4 |
| 16:3n-4 | *6°C* | - | - | - | - | - | - | 2.7±0.9 | 14.3±7.2 | - | 1.7±0.2 | - | 3.1±0.4 |
|  | *12°C/temp. stress* | - | - | - | - | - | - | **9.2±5.6** | 24.5±8.9 | - | **11±0.6** | - | 28.3±3.5 |
| 18:0 | *6°C* | 4.8±1.2 | 10.8±3.6 | 5 | 3±0.4 | 6.5 | 3.3±0.7 | **6.2±1.4** | 29.1±11.6 | 3.4 | 2±0.1 | 5.1 | 4.2±0.3 |
|  | *12°C/temp. stress* | 4.2±1.2 | 8.4±3.4 | **6.9** | 3.7±0.5 | 5.8 | 7.8±0.7 | 4.7±2.8 | 17.6±14.5 | **8.6** | 1.7±0.2 | 12.7 | 4.3±0.9 |
| 18:1n-9 | *6°C* | 3.3±1.5 | 7.9±2.9 | 2.3 | 2.3±0.5 | 3 | 2.3±0.7 | **10.1±5.5** | 47.2±30.1 | 2.6 | 2.5±0.1 | 3.8 | 5.5±0.5 |
|  | *12°C/temp. stress* | **5.1±2.4** | 10.1±5.8 | 2.6 | 2.1±0.1 | 4.5 | 4.3±0.2 | **7.6±5.7** | 27.2±12.1 | 2.8 | 1.3±0.9 | 4.1 | 3.3±0.5 |
| 18:1n-7 | *6°C* | tr | 1.8±0.5 | - | - | - | - | **9.2±3** | 40.5±14.9 | tr | 1.2±0.2 | 0.8 | 2.7±0.3 |
|  | *12°C/temp. stress* | 4.9±3.2 | 9±5 | - | - | - | - | **10.1±7** | 34.8±17.1 | tr | tr | 0.1 | 1.1±0.1 |
| 18:4n-3 | *6°C* | **7.9±0.8** | 18±3.9 | **23.9** | **31.9±4.7** | 31.3 | 33.8±2.7 | - | - | **23** | **11.4±0.9** | 33.7 | 24.7±0.4 |
|  | *12°C/temp. stress* | **7.3±1.1** | 15±2.7 | **19.3** | **31.3±0.6** | 16.4 | 65.3±5.4 | - | - | **15** | 4.9±1.2 | 22.1 | 13±5.1 |
| 18:5n-3 | *6°C* | **17±2.3** | 38.2±7 | - | tr | - | 0.3±0.2 | - | - | - | - | - | - |
|  | *12°C/temp. stress* | **12.7±6.1** | 28.8±13.2 | tr | tr | 0.1 | 0.8±0.1 | - | - | - | - | - | - |
| 20:1n-9 | *6°C* | - | - | 3 | 1.7±1.2 | 4 | 1.7±1.2 | - | - | 3.7 | 2.9±0.3 | 5.6 | 6.3±1.3 |
|  | *12°C/temp. stress* | - | - | 3.4 | 3.7±0.8 | 3 | 7.8±2.1 | - | - | 1.3 | 1.1±0.2 | 1.9 | 2.9±0.9 |
| 20:5n-3 (EPA) | *6°C* | tr | 1.5 ± 0.2 | 2.5 | 3.4±0.1 | 3.3 | 3.7±0.4 | **5.7±1.7** | 29.8±13.0 | 4.3 | **8.6±0.3** | 6.2 | 18.7±1.3 |
|  | *12°C/temp. stress* | tr | 1.8 ± 0.6 | 3.6 | 2.8±0.1 | 3.1 | 5.9±0.4 | **6.5±3.5** 26.3±7.4  *(days 2-4 at 6°C, n=8)*  **11.9±5.4** 20.9±7.1  (*days 6-8 at 12°C, n=5)*  **8.8±4.8** 24.1±7.4  *(overall experiment, n=13)* | | **5.1** | **11.7±0.8** | 7.5 | 29.8±2.8 |
| 22:1n-11 | *6°C* | - | - | 3.2 | 2.8±0.5 | 4.2 | 3±0.4 | - | - | **6.4** | 4.2±0.6 | 9.4 | 9.3±2.3 |
|  | *12°C/temp. stress* | - | - | **5.9** | 4.3±0.5 | 5.2 | 9±1.2 | - | - | tr | 1.9±0.1 | 0.1 | 4.9±1.1 |
| 22:6n-3 (DHA) | *6°C* | **16.2±1.3** | 36.5 ± 6.5 | **7.7** | **9.2±0.9** | 10 | 9.8±0.1 | 1.3±0.4 | 6.6±3.1 | **12** | **9.8±1.7** | 17.5 | 21±2 |
|  | *12°C/temp. stress* | **13.8±3.1** | 28.7 ± 6.5 | **7.9** | **8.8±0.1** | 6.9 | 18.4±1.5 | 1.3±0.5 5.7±2.1  *(days 2-4 at 6°C, n=8)*  2.3±0.9 4±1  (*days 6-8* *at 12°C, n=5)*  1.6±0.8 5±1.9  *(overall experiment, n=13)* | | **16.4** | **5.5±0.7** | 24.1 | 13.9±0.8 |