

Cholesterol Oxidation is Increased and PUFA Decreased by Frozen Storage and Grilling of Atlantic Hake Fillets (*Merluccius hubbsi*)

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Erratum to: Lipids

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The original version of this article unfortunately contained several mistakes in Table 2.

Linoleic C18:2 ω 6 has to be changed to Linoleic 18:2 ω 6
Linoleic 18:3 ω 3 has to be changed to Linolenic 18:3 ω 3 and
 γ -linoleic 18:3 ω 6 has to be changed to γ -Linolenic 18:3 ω 6

Enclosed please find the correct version of Table 2.

The online version of the original article can be found under doi:[10.1007/s11745-007-3062-4](https://doi.org/10.1007/s11745-007-3062-4).

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Table 2 Fatty acids composition (g/100 g of oil) in raw and grilled Atlantic hake during 120 days of storage

| | Zero time | | 30 Days | | 60 Days | | 90 Days | | 120 Days | |
|-------------------------|--------------------------|--------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|--------------------------|
| | Raw | Grilled | Raw | Grilled | Raw | Grilled | Raw | Grilled | Raw | Grilled |
| | Lauric C12:0 | 0.64 ± 0.01 ^A | 0.53 ± 0.02 ^a | 0.61 ± 0.03 ^A | 0.52 ± 0.02 ^a | 0.60 ± 0.02 ^A | 0.51 ± 0.02 ^a | 0.59 ± 0.01 ^A | 0.51 ± 0.01 ^a | 0.58 ± 0.03 ^A |
| Myristic 14:0 | 4.20 ± 0.2 ^A | 3.86 ± 0.2 ^a | 4.17 ± 0.1 ^A | 3.75 ± 0.2 ^b | 4.18 ± 0.1 ^A | 3.69 ± 0.2 ^b | 4.16 ± 0.3 ^A | 3.93 ± 0.2 ^a | 4.15 ± 0.1 ^A | 3.86 ± 0.2 ^a |
| Pentadecic 15:0 | 0.95 ± 0.03 ^A | 0.77 ± 0.1 ^{ab} | 0.92 ± 0.04 ^A | 0.75 ± 0.03 ^b | 0.89 ± 0.01 ^A | 0.72 ± 0.1 ^b | 0.95 ± 0.05 ^A | 0.81 ± 0.05 ^a | 0.92 ± 0.02 ^A | 0.83 ± 0.01 ^a |
| Palmitic 16:0 | 13.98 ± 0.4 ^A | 13.25 ± 0.4 ^a | 13.89 ± 0.2 ^B | 13.04 ± 0.4 ^b | 13.81 ± 0.3 ^B | 13.00 ± 0.2 ^b | 13.89 ± 0.4 ^B | 13.15 ± 0.2 ^a | 13.85 ± 0.5 ^B | 13.00 ± 0.3 ^b |
| Margaric 17:0 | 0.24 ± 0.05 ^A | 0.19 ± 0.03 ^a | 0.22 ± 0.01 ^A | 0.16 ± 0.05 ^a | 0.23 ± 0.02 ^A | 0.17 ± 0.02 ^a | 0.27 ± 0.01 ^A | 0.22 ± 0.01 ^a | 0.25 ± 0.03 ^A | 0.19 ± 0.01 ^a |
| Stearic 18:0 | 1.86 ± 0.6 ^A | 1.67 ± 0.2 ^a | 1.83 ± 0.2 ^A | 1.61 ± 0.3 ^a | 1.84 ± 0.01 ^A | 1.59 ± 0.3 ^{ab} | 1.75 ± 0.2 ^{AB} | 1.55 ± 0.3 ^b | 1.88 ± 0.2 ^A | 1.62 ± 0.1 ^a |
| Arachidic 20:0 | 0.59 ± 0.02 ^A | 0.46 ± 0.03 ^a | 0.55 ± 0.01 ^{AB} | 0.45 ± 0.01 ^a | 0.56 ± 0.05 ^{AB} | 0.44 ± 0.02 ^a | 0.57 ± 0.01 ^A | 0.45 ± 0.01 ^A | 0.51 ± 0.01 ^B | 0.45 ± 0.01 ^A |
| Behenic 22:0 | 0.71 ± 0.05 ^A | 0.62 ± 0.01 ^a | 0.69 ± 0.02 ^a | 0.57 ± 0.02 ^a | 0.70 ± 0.01 ^A | 0.59 ± 0.01 ^a | 0.68 ± 0.02 ^A | 0.61 ± 0.02 ^a | 0.69 ± 0.03 ^A | 0.63 ± 0.01 ^a |
| Lignoceric 24:0 | 0.67 ± 0.08 ^A | 0.58 ± 0.02 ^a | 0.64 ± 0.01 ^A | 0.55 ± 0.01 ^a | 0.66 ± 0.02 ^A | 0.52 ± 0.02 ^a | 0.66 ± 0.01 ^A | 0.56 ± 0.01 ^A | 0.60 ± 0.02 ^A | 0.54 ± 0.02 ^A |
| Myristoleic 14:1 ω9 | 0.35 ± 0.01 ^A | 0.29 ± 0.02 ^a | 0.32 ± 0.01 ^A | 0.26 ± 0.03 ^b | 0.29 ± 0.01 ^{AB} | 0.21 ± 0.01 ^c | 0.27 ± 0.02 ^B | 0.20 ± 0.05 ^c | 0.25 ± 0.04 ^B | 0.18 ± 0.01 ^d |
| Palmitoleic 16:1 ω7 | 8.95 ± 0.8 ^A | 7.79 ± 0.6 ^a | 8.31 ± 0.7 ^B | 7.45 ± 0.6 ^b | 7.97 ± 0.8 ^C | 6.60 ± 0.6 ^c | 7.20 ± 0.5 ^D | 6.27 ± 0.5 ^d | 6.86 ± 0.3 ^E | 5.96 ± 0.7 ^e |
| Margaroleic 17:1 ω7 | 2.33 ± 0.4 ^A | 1.95 ± 0.1 ^a | 2.17 ± 0.4 ^{AB} | 1.56 ± 0.4 ^b | 2.04 ± 0.6 ^B | 1.35 ± 0.2 ^c | 1.72 ± 0.1 ^{BC} | 1.19 ± 0.02 ^d | 1.55 ± 0.5 ^C | 1.04 ± 0.05 ^e |
| Oleic 18:1 ω9 | 15.85 ± 1 ^A | 14.52 ± 1 ^a | 14.96 ± 0.9 ^B | 13.87 ± 0.5 ^b | 14.24 ± 0.8 ^C | 12.93 ± 0.7 ^c | 13.82 ± 1 ^D | 12.42 ± 0.9 ^d | 12.97 ± 0.8 ^E | 12.00 ± 1 ^e |
| Gadoleic 20:1 ω11 | 0.55 ± 0.02 ^A | 0.48 ± 0.03 ^a | 0.47 ± 0.01 ^{AB} | 0.36 ± 0.01 ^{ab} | 0.39 ± 0.02 ^B | 0.23 ± 0.02 ^{bc} | 0.35 ± 0.02 ^{BC} | 0.20 ± 0.01 ^c | 0.24 ± 0.05 ^{BC} | 0.16 ± 0.00 ^c |
| Erucic 22:1 ω9 | 0.47 ± 0.01 ^A | 0.34 ± 0.05 ^a | 0.36 ± 0.02 ^B | 0.29 ± 0.01 ^{ab} | 0.30 ± 0.01 ^{BC} | 0.21 ± 0.03 ^{bc} | 0.25 ± 0.01 ^C | 0.18 ± 0.02 ^{cd} | 0.22 ± 0.01 ^C | 0.15 ± 0.00 ^d |
| Nervonic 24:1 ω6 | 0.61 ± 0.02 ^A | 0.54 ± 0.02 ^a | 0.57 ± 0.02 ^{AB} | 0.42 ± 0.01 ^b | 0.50 ± 0.01 ^B | 0.39 ± 0.01 ^b | 0.42 ± 0.01 ^{BC} | 0.35 ± 0.01 ^{bc} | 0.40 ± 0.01 ^c | 0.30 ± 0.01 ^c |
| Linoleic 18:2 ω6 | 0.60 ± 0.00 ^A | 0.51 ± 0.00 ^a | 0.55 ± 0.00 ^A | 0.43 ± 0.00 ^b | 0.44 ± 0.00 ^B | 0.31 ± 0.00 ^c | 0.35 ± 0.00 ^C | 0.29 ± 0.00 ^c | 0.23 ± 0.00 ^D | 0.15 ± 0.00 ^d |
| Linolenic 18:3 ω3 | 0.28 ± 0.00 ^A | 0.20 ± 0.00 ^a | 0.24 ± 0.00 ^A | 0.14 ± 0.00 ^{ab} | 0.19 ± 0.00 ^{AB} | 0.10 ± 0.00 ^b | 0.13 ± 0.00 ^{BC} | 0.08 ± 0.00 ^b | 0.10 ± 0.00 ^C | 0.07 ± 0.00 ^b |
| γ-Linolenic 18:3 ω6 | 1.54 ± 0.3 ^A | 1.35 ± 0.1 ^a | 1.39 ± 0.4 ^B | 1.14 ± 0.1 ^b | 1.28 ± 0.3 ^c | 1.02 ± 0.2 ^c | 1.15 ± 0.4 ^D | 0.90 ± 0.1 ^d | 1.00 ± 0.2 ^E | 0.79 ± 0.1 ^e |
| Arachidonic 20:4 ω6 | 2.50 ± 0.05 ^A | 2.33 ± 0.01 ^a | 2.21 ± 0.02 ^B | 2.00 ± 0.01 ^b | 1.93 ± 0.02 ^C | 1.64 ± 0.02 ^c | 1.54 ± 0.05 ^D | 1.38 ± 0.01 ^d | 1.32 ± 0.02 ^E | 1.09 ± 0.01 ^e |
| EPA 20:5 ω3 | 6.17 ± 0.3 ^A | 4.92 ± 0.3 ^a | 5.74 ± 0.1 ^B | 4.35 ± 0.5 ^b | 5.12 ± 0.3 ^C | 3.89 ± 0.3 ^c | 4.75 ± 0.6 ^D | 3.26 ± 0.2 ^d | 3.97 ± 0.1 ^E | 2.43 ± 0.1 ^e |
| DHA C22:6 ω3 | 18.86 ± 0.8 ^A | 16.45 ± 0.7 ^a | 16.62 ± 0.5 ^B | 14.54 ± 0.6 ^b | 14.98 ± 0.4 ^C | 13.29 ± 0.8 ^c | 13.74 ± 0.7 ^D | 11.69 ± 0.3 ^d | 11.89 ± 0.1 ^E | 9.95 ± 0.2 ^e |
| Elaidic 18:1 tr ω9 | 0.29 ± 0.00 ^A | 0.36 ± 0.00 ^a | 0.25 ± 0.00 ^{AB} | 0.30 ± 0.00 ^{ab} | 0.18 ± 0.00 ^B | 0.25 ± 0.01 ^b | 0.13 ± 0.05 ^{BC} | 0.20 ± 0.01 ^{bc} | 0.11 ± 0.01 ^C | 0.17 ± 0.03 ^c |
| Linolelaidic 18:2 tr ω6 | 0.36 ± 0.02 ^A | 0.45 ± 0.01 ^a | 0.30 ± 0.03 ^A | 0.38 ± 0.01 ^{ab} | 0.26 ± 0.03 ^{AB} | 0.37 ± 0.01 ^{ab} | 0.23 ± 0.02 ^B | 0.30 ± 0.02 ^{bc} | 0.18 ± 0.02 ^B | 0.26 ± 0.01 ^c |
| Σ SFA | 23.84 | 21.93 | 23.52 | 21.40 | 23.47 | 21.23 | 23.52 | 21.69 | 23.43 | 21.62 |
| Σ MUFA | 29.21 | 25.51 | 27.16 | 24.21 | 25.73 | 21.92 | 24.03 | 20.81 | 22.49 | 19.79 |
| Σ PUFA | 29.87 | 25.76 | 26.75 | 22.60 | 23.94 | 20.25 | 21.18 | 17.60 | 18.51 | 14.48 |
| Σ FA | 82.92 | 73.20 | 77.43 | 68.21 | 73.14 | 63.40 | 68.74 | 60.10 | 64.43 | 55.89 |
| Σ ω6 | 5.25 | 4.73 | 4.72 | 3.99 | 4.15 | 3.36 | 3.46 | 2.92 | 2.95 | 2.33 |
| Σ ω3 | 25.31 | 21.57 | 22.60 | 19.03 | 20.29 | 17.28 | 18.62 | 15.03 | 15.96 | 12.45 |
| ω3/ω6 | 4.82 | 4.56 | 4.78 | 4.76 | 4.88 | 5.14 | 5.38 | 5.14 | 5.41 | 5.34 |
| Σ <i>trans</i> | 0.65 | 0.81 | 0.55 | 0.68 | 0.44 | 0.62 | 0.36 | 0.50 | 0.29 | 0.43 |
| PUFA/SFA | 1.25 | 1.17 | 1.13 | 1.05 | 1.02 | 0.95 | 0.90 | 0.81 | 0.79 | 0.67 |

Values are means ± standard deviation of the six analysis (two lots analyzed in triplicates). All the raw and grilled samples are significantly different ($P < 0.02$). Values bearing and different letters (capital letters) have significant differences ($P < 0.02$) at differing storage times in the raw samples. Values bearing different letters (small letters) have significant differences ($P < 0.02$) at various storage times in the grilled samples