

Regarding farmed Norwegian salmon

The Norwegian Seafood Council would like to refer to relevant sources regarding the statements and conclusions presented in this document.

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Nutrition in seafood and farmed salmon (fat fish)

Seafood is a good source of certain nutrients that we do not get much of from other types of food. Fish and other seafood are primarily a good source of high-quality proteins, and this applies to both lean and fatty fish.

Fat:

The most important component of the fat is the fatty acids. There are three main types:

- Saturated fatty acids
- Monounsaturated fatty acids
- Polyunsaturated fatty acids (Omega-3 and Omega-6)

Polyunsaturated fatty acids are found in several different types of food, especially vegetable oils and marine oils. There are two types of polyunsaturated fatty acids that our body cannot produce itself: linoleic acid, which is an omega-6 fatty acid, and alpha-linolenic acid, which is an omega-3 fatty acid. These are called essential fatty acids and must be added through our diet. Omega-3 in fish oil is called marine omega-3. Omega-3 in plants is called plant-based omega-3.

EPA and DHA are the most important omega-3 fatty acids and play the biggest part in preventing cardiovascular disease.

Data from a recent updated study from the Norwegian Scientific Committee for Food Safety (VKM), show that wild and farmed salmon contains roughly the same Omega-3 content, while farmed salmon contain higher concentrations of Omega-6, due to change in feed over the 10 last years.

Sources :

<http://nifes.no/en/research-topics/seafood-and-health/seafood-contains/fat/>

<http://nifes.no/en/research-topics/seafood-and-health/seafood-contains/omega-3-fatty-acids/>

<http://vkm.no/dav/0a646edc5e.pdf>

Vitamin D:

Vitamin D is a fat-soluble vitamin that is stored in the liver. Vitamin D is found in fat fish, fish liver and cod liver oil.

The content of vitamin D (as D3) is naturally highest in the fatty fish species.



The current vitamin D concentration (analysed as D3) in farmed Atlantic salmon is reported to be 7.5 µg/100 gram, and has not changed significantly over the last 10 years.

As per 2012 the daily recommended intake of Vitamin D was and is 10 µg/micrograms for persons up to the age of 75.

For persons above the age of 75, the recommended intake is 20 µg/micrograms per day.

Following this, a normal farmed salmon meal (150g fillet) will more than cover the daily intake.

Sources :

http://www.english.vkm.no/eway/default.aspx?pid=278&trg=Content_6444&Main_6359=6582:0:31,2566&Content_6444=6393:2104475::0:6596:1::0:0:

<http://vkm.no/dav/0a646edc5e.pdf>

Nordic Nutrition Recommendations 2012: <http://norden.diva-portal.org/smash/get/diva2:704251/FULLTEXT01.pdf>

Iodine

Iodine is found in seafood and dairy products and is added to certain types of table salt. Lean fish contains about twice as much iodine as fat fish. Iodine is important for normal energy conversion and growth. Iodine is also important for the development of the central nervous system in children.

The recommended intake of iodine for adults and children over the age of 10 is 150 micrograms per day. The recommended intake is slightly lower for younger children (50–120 micrograms) and slightly higher for pregnant women (175 micrograms) and breastfeeding women (200 micrograms). Too much iodine can also lead to health problems. The intake of iodine should not exceed 600 micrograms per day.

The current iodine concentration in farmed Atlantic salmon is reported to be 2-4 µg/micrograms per 100 gram.

As per 2012 the daily recommended intake of iodine is 150 µg/micrograms for adults.

In addition to the nutrients above, farmed salmon is a source for protein and selenium.

<http://nifes.no/en/research-topics/seafood-and-health/seafood-contains/iodine/>

Nordic Nutrition Recommendations 2012: <http://norden.diva-portal.org/smash/get/diva2:704251/FULLTEXT01.pdf>

<http://nifes.no/en/research-topics/seafood-and-health/seafood-contains/>



Norwegian farmed salmon is safe for raw consumption

Norwegian farmed salmon is safe for raw consumption and EFSA has lifted the freezing requirement for NOR farmed salmon intended for raw consumption.

A report from The European Food and Safety Authority concludes that farmed Atlantic salmon fed on dry feed is unlikely to contain live parasites, and the risk of parasites after consumption of raw unfrozen farmed salmon is therefore negligible. The report is based on monitoring data from several salmon producing countries, including Norway.

Based on EFSA's report, the Norwegian Food Safety Authorities (NFSA) consider it safe to eat raw farmed salmon, like sushi, without prior freezing.

The National Institute for Nutrition and Seafood Research follow this conclusion in their latest publication.

Sources :

http://www.mattilsynet.no/language/english/fish_and_aquaculture/low_risk_for_anisakis_parasites_in_farmed_atlantic_salmon.20059

<http://www.efsa.europa.eu/en/efsajournal/pub/1543>

<http://issuu.com/nifes-pdf/docs/sluttrapport-fhf-nifes-anisakis-i-oppdrettslaks-15-12-16/1?e=14823531/32137725>



Reduction of undesirable substances in farmed salmon

A recent updated study from the Norwegian Scientific Committee for Food Safety (VKM) concludes that there has been a reduction of contaminants in farmed salmon since 2006. Based on the last report, VKM also concludes that farmed salmon carry less contaminants than wild fatty fish.

Due to replacement of fish oil and fish protein with plant proteins and vegetable oils in farmed fish feed, the concentrations of dioxins and dioxin-like PCBs, and mercury have changed in farmed Atlantic salmon. VKM concludes that the current concentrations of dioxins and dl-PCBs, and mercury in farmed Atlantic salmon are reduced to about 30 and 50%, respectively, of the corresponding levels in 2006.

For new contaminants in fish feed like the pesticide endosulfan, polyaromatic hydrocarbon (PAHs) and mycotoxins, VKM is of the opinion that the concentrations in farmed fish in the Norwegian diet are likely not a food safety issue since the concentrations are very low and often not detectable even with sensitive analytical methods.

Sources:

http://www.english.vkm.no/eway/default.aspx?pid=278&trg=Content_6444&Main_6359=6582:0:31,2566&Content_6444=6393:2104475::0:6596:1:::0:0

<http://www.english.vkm.no/dav/7bbe3dbf57.pdf>

