

NORWEGIAN SEAFOOD COUNCIL

Regarding Norwegian farmed salmon and the different versions of the documentary called “Filet Oh! Fish”/ “Fillet Oh Fish” or “Fish: farming in Murky Waters” by Nicolas Daniel, Upside Distribution, Upside Television

Following the documentary *Fillet Oh Fish* by Nicolas Daniel, The Norwegian Seafood Council (NSC) would like to inform the viewers about incorrect and misleading information presented in the documentary. In the following, NSC would like to provide correct information regarding the claimed issues relating to Norwegian salmon farming. NSC is available to answer questions via the following e-mail address: mail@seafood.no

First of all, the documentary reflects a single point of view. The Norwegian aquaculture sector, authorities and other relevant institutions did not get the opportunity to speak, all though being the primary targets of the grave accusations put forward. In the documentary, Mr. Oddekalv is presented as one of Norway's most respected environmentalists. This is simply not true. His methods have been openly criticized by environmental organizations such as WWF Norway, Bellona and the Norwegian Society for the Conservation of Nature. Mr. Oddekalv is an activist whom for years have campaigned against productive aquaculture. Mr. Oddekalv is well known for using controversial methods and for having no qualms for willfully presenting wrong and inaccurate information to promote and substantiate his own opinions.

The Norwegian food safety system

The scientific food safety system is based on four principles:

1. **Providing knowledge:** only scientific reports are used.
2. **Risk assessment:** risk assessments are carried out by independent scientific institutions (European Food Safety Authority, The Norwegian Scientific Committee for food safety, or other institutions appointed by the Norwegian Government).

The Norwegian Scientific Committee for Food Safety

EFSA

3. **Risk management:** the Norwegian Food Safety Authority is the competent authority on food safety in Norway. Risk management can be implemented by new legislation (f. ex. Maximum limits or give warnings to the public).
4. **Monitoring system:** The food safety of Farmed Norwegian salmon is yearly monitored. The monitoring program, as required by European Union legislation (Directive 96/23) is one of the official controls of aquaculture production. The results of the yearly monitoring program, and any other official controls are publicly available.

National Institute of Nutrition and Seafood Research

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Regarding antibiotics

No medication or antibiotics are administered preventively or as a growth promoter in salmon feed. The use of antibiotics in Norwegian salmon farming has plummeted by 99% since the 1990s whereas salmon production over the same period has increased from 50,000 tons to more than one million tons.

In 2016, less than 0.5 percent of Norwegian salmon received veterinary treatment with antibiotics. The use of antibiotics is strictly monitored: all medicines have to be approved by relevant authorities, they may only be used when specific diseases are diagnosed, and all prescriptions are signed by certified veterinarians.

Treated salmon must be placed in quarantine before the salmon is allowed to be sold. The intention behind the quarantine is to give time for the organism to clear out all residues of the medicine, before being sold. Norwegian salmon is controlled according to EU regulations for veterinary residues. Recent results document that Norwegian salmon is perfectly safe and healthy to eat.

[Monitoring program antibiotics Norwegian Veterinary Institute](#)

[National Institute of Nutrition and Seafood Research](#)

Regarding flubenzuron

Diflubenzuron and teflubenzuron are occasionally used under strict limits and only as prescribed by a veterinary to treat salmon for sea lice. The use of flubenzuron has been approved by the EU for controlling sea lice in salmon farms.

The maximum level of residue allowed for diflubenzuron is 1000 µg/kg and for teflubenzuron 500 µg/kg. Since 1994 a major monitoring program of farmed fish has been conducted by the Norwegian Food Safety Authority, in accordance with EU regulations to ensure food safety. NIFES carries out 12 000-14 000 tests every year, and flubenzuron residues have never been detected in Norwegian farmed salmon.

Regarding endosulfan

The use of endosulfan as a pesticide is banned within the European Union and in Norway, and it is not applied in any way in salmon farming.

Due to the limited access to marine raw materials and the wish to find more sustainable feed resources, the aquaculture sector uses vegetable ingredients in the salmon feed. Pesticide residues in raw materials purchased in South American and Asian countries, where the use of endosulfan is not yet banned, can be found at trace levels in animal feeds used in the EU and Norway.

To assure that food levels are controlled, strict limits for feed are set by the food safety authorities. In EU a maximum limit of 0,1 mg/kg applies for endosulfan in agricultural feeds while a limit of 0,05 mg/kg applies for salmon feeds.

The EFSA (European Food Safety Authority) and the European Commission have concluded that the endosulfan in salmon feed is not a risk factor for human health or for animal welfare.

<http://www.efsa.europa.eu/en/efsajournal/pub/236>

Regarding ethoxyquin

Ethoxyquin (EQ) is an antioxidant, which is added to fishmeal during manufacture to retain the important omega-3 fatty acids that are present. The antioxidant prevents oxidation of these fats ensuring that they are available to farmed animals and farmed fish. Ethoxyquin is also by International Maritime Organization regulation, required to be added to fishmeal before transport by ship to avoid oxidation, self-heating and the possible risk of ignition. In Norway, NIFES monitors environmental toxins and other unwanted substances in fish feed and seafood. As of today, there is no data supporting any effects on humans in relation to the usage of EQ. Farmed salmon is documented as a safe and healthy fish . (see *linked resources* - NIFES). There is no upper limit (MRL) for ethoxyquin in fish, however, as a precaution, there is a limit set for *acceptable daily intake* (ADI). This ADI is set by The World Health Organization/FAO and its independent expert committee JMPR and is 0,005 mg per body weight kilo per day. Analyses of farmed salmon demonstrates that a large portion of salmon (300gram) contributes with no more than 15% of the acceptable daily intake. A risk-benefit review of the consumption of seafood by the Norwegian Scientific Committee for Food Safety (VKM) concluded that farmed fish is a healthy food and can be safely eaten by everyone, every day in the week. The positive effects far exceed the potential risk associated with environmental toxins and other substances, including ethoxyquin. In fish feed, the boundary limit of the total sum of the synthetic antioxidants (EQ, BHA, BHT, PG) is 150 mg per kilogram feed. The levels of ethoxyquin in fish feed is monitored by the Norwegian Food and Safety Authorities. The average values have the last ten years been declining significantly, and the monitoring program also show that average values are seven times lower than allowed dosage. This is mainly due to the reduction of fishmeal in the fish feed.

<https://www.nifes.no/en/ethoxyquin-in-fish-feed/>

Regarding pollutants

POP levels - including dioxins and PCBs - in Norwegian salmon are six times lower than the European limit values (less than 1 ng TEQ/kg for a limit value of 6,5 ng TEQ/kg. The Norwegian authorities control the entire supply chain to ensure compliance with the EU limits. The results of various tests are public and accessible on the NIFES (National Institute of Nutrition and Seafood Research website. NIFES carries out over eleven thousand tests a year on Norwegian salmon, and POP levels in Norwegian farmed salmon have never exceeded the European limit values. NIFES has confirmed that the POP levels found in Norwegian farmed salmon are steadily decreasing and have dropped by two thirds since 2004. In the study by Jerome Ruzzin allegedly establishes a link between consumption of Norwegian farmed salmon, obesity and diabetes. In the study this study, mice were fed exclusively with farmed salmon for eight weeks. The diet was pushed to the extreme to promote effects which could be studied further. If humans were to eat the same quantities as those used in this study, one would have to eat only salmon for every meal, every day for 2 months. No one should have such extreme or one-sided diet, and official dietary advice are in accordance with this. Co-authors of the study in question have stated that the conclusions of the study cannot be interpreted as establishing a link between farmed salmon and diabetes or obesity in humans.

<https://www.nifes.no/en/prosjekt/seafood-data/>

<https://www.nifes.no/report/overvaking-oppdrettsfisk-2016>

<https://www.nifes.no/diabetes-og-oppdrettslaks-ingen-pavist-sammenheng/>

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Official health advice

The advice from official health authorities state that we should eat fish for dinner two to three times a week. Official advice recommends 300-450 grams of pure fish a week, and at least 200 grams should be oily fish such as farmed salmon. The Scientific Committee for Food (VKM - final report from December 2014) states that the health benefits of eating fish outweigh the potential risks of eating salmon and other fish species related to pollutants and other known contaminants in fish. The salmon is also in a unique position because it eats carefully controlled feed. A survey (conducted by NIFES), shows that contaminants in salmon are well below the established limits in both Norway and the EU. The French Agency for Food, Environmental and Occupational Health & Safety (ANSES) also recommends eating fish at least twice a week, combining one Omega-3-rich fish, such as Norwegian farmed salmon, with a lean fish.

[VKM -Benefit and risk assessment of fish in the Norwegian diet](#)

Readers are welcome to contact The Norwegian Seafood Council regarding seafood related queries.

About the NSC

The Norwegian Seafood Council works with the Norwegian fishery and aquaculture industry to develop markets for Norwegian seafood through local market intelligence, market development and reputational risk management. The Seafood Council is headquartered in Tromsø and maintains local representatives in twelve of Norway's most important international markets. The Norwegian seafood industry finances the activities of the Norwegian Seafood Council via a tariff on all Norwegian seafood exports. The Norwegian Seafood Council is a public company owned by the Ministry of Trade, Industry and Fisheries.