

Fisheries and Oceans
CanadaPêches et Océans
Canada

Canada

[Home](#) > [Media Room](#) > [Archives](#) > [Backgrounders 2005](#)

Myths and Realities about Salmon Farming

June, 2005

Myth #1: Farmed salmon is not safe to eat.

Reality: Eating farmed salmon does not pose a health risk. [Claims](#) that eating farmed salmon can cause health risks such as cancer can unnecessarily frighten people and prevent them from enjoying the benefits of eating fish. Fish and seafood are an important part of a healthy and balanced diet.

Scientific [studies](#) indicate that trace amounts of PCBs (polychlorinated biphenyls) in both farmed and wild salmon are well within acceptable limits and similar to the amounts found throughout our food supply - in beef, chicken, pork and dairy products. PCBs and other contaminants are a legacy of industrial practices that find their way into the food chain in nearly all foods.

[Health Canada](#) and the [Canadian Food Inspection Agency](#) (CFIA) work together to ensure that our food supply is safe. For example, the CFIA conducts rigorous inspections of fish processing establishments across Canada and they analyze food samples for impurities, drug residues or disease-causing agents. Health Canada sets standards and policies for the safety of food and veterinary drugs sold in Canada.

Myth #2: Farmed salmon is not as nutritious as wild salmon.

Reality: Farmed salmon has just as much nutritional value as its wild counterpart. Each salmon species is genetically unique. There may be personal preferences in terms of texture or colour that may influence a person's impression of farmed and wild salmon.

Farmed and wild salmon carry the same health benefits when they are part of a balanced diet. For example, all salmon is rich in Omega-3 fatty acids - the "good fats" that help the body fight heart disease.

Myth #3: No one is supervising salmon farms.

Reality: DFO, other federal departments, and provincial governments monitor fish farms. It is mandatory that any coastal development - including salmon farms - undergo a lengthy environmental assessment and that appropriate conservation measures are adopted before applications are approved. Habitat Officers routinely review sites in order to prevent harmful alteration, disruption or destruction of the oceans and freshwater habitat. In fact, the [Fisheries Act](#) is one of the strongest pieces of environmental legislation in Canada.

Atlantic Salmon	
Nutrition Facts Valeur nutritive	
Per 1 Fillet (113 g) / Pour 1 filet (113 g)	
Amount Teneur	% Daily Value % valeur quotidienne
Calories / Calories	210
Fat / Lipides	12 g 19%
Saturated / saturés	4 g 20%
+ Trans / trans	0 g
Polyunsaturated / Polyinsaturés	4.5 g
Omega-6 / oméga-6	1 g
Omega-3 / oméga-3	2.5 g
Monounsaturated / Monoinsaturés	4 g
Cholesterol / Cholestérol	65 mg
Sodium / Sodium	60 mg 2%
Carbohydrate / Glucides	0 g 0%

<http://www.dfo-mpo.gc.ca/media/back-fiche/2005/salmon-eng.htm>

22/10/2009

DFO-30261

Loose Documents - Reports - From shelf over desk
Office of Heather James
Resource Management
DFO-NCR

CAN045946_0001

Provinces are also responsible for the monitoring and enforcement of salmon farm sites. For instance, British Columbia, a major farm salmon producer in Canada, conducts annual inspections and spot-audits of all active salmon farms to ensure they are following the rules. Click on the link to view [BC Compliance and Enforcement reports](#).

Myth #4: Salmon farms are bad for the environment.

Reality: Today, the salmon farming industry must meet rigorous federal, provincial and international environmental standards. Their practices are scrutinized by government agencies, food retailers, environmental advocacy groups and consumers.

DFO and the provinces regularly assess environmental risks associated with current salmon farming practices. [DFO's State-of-Knowledge Initiative](#) assists us with that ongoing analysis. Canada has a system of checks and balances that are vital to the management of the salmon farming industry: [Environmental Assessment](#); [The National Aquatic Animal Health Program](#); Canada's [National Code on Introductions and Transfers of Aquatic Organisms](#) ; and [monitoring](#) of aquaculture sites in BC.

Myth #5: Left-over food and feces from salmon farms pollutes the ocean.

Reality: All fish, wild and farmed, produce waste. The difference is that the environmental "footprint" from a salmon farm is limited to a small area. Over the past 15 years, farm operation techniques have improved and technological upgrades have been put into action. Improved site guidelines (where to locate the salmon farm), as well as mandatory environmental assessments, help to significantly reduce the amount of waste that reaches the ocean floor. Provinces also enforce strict standards to minimize waste.

Farmed salmon can convert food to energy very well, and feed produced today is easier to digest. Feed is monitored by underwater video cameras to minimize the amount of uneaten food from settling beneath the net pen. Seawater also has a large capacity to absorb organic materials, especially where there are strong ocean currents. Strategic location of salmon farms, combined with periods of inactivity, reverses the temporary environmental "footprint" on the ocean floor.

Myth #6: Farmed salmon are pumped full of hormones and antibiotics.

Reality: Farmed salmon are not fed or injected with growth hormones. Antibiotics, if they are required, are provided by veterinarians. [Health Canada has clear rules about drug use on food animals](#). Maximum residue limits for each drug are set and must be met through appropriate withdrawal times following treatment before the fish can be harvested. The CFIA monitors fish at federal processing plants to ensure they do not exceed the levels set by Health Canada.

When compared to land-based farmed animal production, salmon farming uses the least amount of antibiotics. In recent years, advances in vaccine development, similar to the practice used for raising livestock, have resulted in a significant reduction of antibiotic use.

Myth #7: Farmed salmon are full of additives to make it look like wild fish.

Reality: Farmed salmon are not injected with dye or artificial colours. Both wild and farmed salmon get their characteristic reddish colour from pigments in their food. These pigments are responsible for many of the natural red, orange and yellow hues in food products - think of beta-carotene in carrots. Salmon, like people, need these pigments for healthy growth and must get these nutrients through their diet.

Wild salmon hunt and eat small crustaceans like shrimp with high levels of natural pigments. Farmed fish rely on feed supplements which include two pigments (astaxanthin and canthaxanthin)

<http://www.dfo-mpo.gc.ca/media/back-fiche/2005/salmon-eng.htm>

22/10/2009

Loose Documents - Reports - From shelf over desk
Office of Heather James
Resource Management
DFO-NCR

CAN045946_0002

to provide them with the proper nutrition and colour. Their use has been approved in Canada by the CFIA for the last 15 years.

Myth #8: Escaped, farmed salmon are killing wild salmon stocks.

Reality: Stricter regulations and improvements to net cage technology have had a significant impact on reducing the number of escaped farmed fish. For example, only 40 fish were reported to have escaped in British Columbia in 2003. Fears that escaped Atlantic salmon farmed in BC would establish themselves in the wild and harm wild salmon stocks have never materialized.

Myth #9: Escaped Atlantic salmon have been mating with wild Pacific stocks.

Reality: Atlantic salmon (farmed or wild) cannot successfully mate with wild Pacific salmon.

DFO's Atlantic Salmon Watch Program does show that there have been cases of escaped farmed Atlantic salmon surviving and then breeding with other escaped salmon in BC streams. However, there is no evidence of established Atlantic salmon populations. Studies have shown that farmed salmon have a low survival rate in the wild because they are used to being fed. Throughout the 20th century, millions of Atlantic salmon were released throughout the west coast of the United States and Canada in an attempt to establish recreational and commercial fisheries. These attempts were not successful.

Myth #10: Farmed salmon spread disease to wild salmon.

Reality: Wild salmon have built up natural tolerances to the diseases and parasites with which they have naturally co-existed for centuries. Canada's National Aquatic Animal Health Program, which received additional funding of \$59 million with Budget 2005, helps to protect aquatic animals, wild or farmed, from the harmful effects of diseases. Additional federal and provincial regulations and programs ensure farmed salmon are healthy before they are harvested.

Farmed salmon have not always built up the same tolerances. Farmers take a number of measures to ensure the health of their fish: they scientifically manage nutrition and diet; they stabilize the number of fish raised in the pen to prevent the stress of overcrowding; and, they manage vaccination programs. When diseases are detected, they may administer environmentally responsible treatments. Veterinarians who treat farmed fish comply with regulations that control the use of all medicines used in the industry.

Myth #11: Sea lice from farmed salmon are destroying pink salmon stocks in BC.

Reality: There is no confirmed evidence that this is the case. Sea lice are a naturally occurring species. They are found naturally on wild salmon, sticklebacks, and herring. Pacific salmon species have lived with sea lice for centuries and have developed a natural tolerance to this parasite.

Sea lice production is influenced by many factors such as high water temperature and high salt content. The relationships of sea lice infections among farmed and wild salmon do require further study and, because of concerns, DFO has undertaken a number of research projects in the area.

Myth #12: Food fish are being taken away from wild stocks to feed farmed fish.

Reality: All salmon are carnivores. In the wild, they eat a varied diet of fish and other aquatic organisms. Feeding farmed salmon a diet which includes fish meal is natural. It only takes about 3 kg of wild fish to produce 1 kg of farmed salmon while it takes 10-15 kg of wild fish to produce the same amount of wild salmon.

As well, fish farmers help to ensure that the fishery remains healthy and abundant by reducing their use of wild fish up to nearly 40 per cent in the last five years. They have done so by using more vegetable-based protein in the diets given to salmon. In fact, the salmon farming industry uses only about one-third of available fish meal and fish oil; the rest is used in animal feeds, pet food and in fertilizers.

Myth 13: The Science on the aquaculture issue seems confusing.

Reality: Our scientific research is rigorously peer-reviewed and reported openly by being posted on our Web Sites. Since the 1980s, DFO research has had a positive impact on the improvement of the aquaculture industry. Since 2000, much of our research has been coordinated through the [Aquaculture Collaborative Research and Development Program](#). Under this program, DFO has joined forces with universities and colleges, other federal and provincial ministries as well as industry to work on various aquaculture projects including the development of "green" technologies and production practices for the aquaculture industry.

Myth #14: DFO supports the development of "Frankenfish".

Reality: There are no genetically engineered (GE) fish currently allowed for commercial use or release in Canada nor has any federal department received an application to import or grow GE fish. The import and manufacture of genetically engineered aquatic animals are regulated under the [Canadian Environmental Protection Act](#). DFO is carrying-out risk assessment research in secure, land-based facilities to assist Environment Canada and Health Canada determine whether genetically-engineered (GE) fish are safe before an application to grow such fish is granted.

Myth #15: Only closed-containment or land-based systems should be used to farm salmon.

Reality: A closed containment system (large tubs) is not a practical alternative right now to the existing net-cage design because there are currently no closed systems designed for affordable, commercial use. To farm salmon on land, large amounts of sea water would have to be pumped in. Because of the lack of hydroelectric power in remote locations, this would require the use of diesel-electric generators, using large amounts of fossil fuel. There is also the issue of how to deal with the waste resulting from a closed system in a remote location.

DFO has carried out its own studies with closed containment systems and encourages the research of innovative technologies that could assist the salmon farming industry. A few Canadian companies have experimented with different types of containment systems based on the "open" design currently used. One company in BC has been successful using a "bag" system, but it is not a true closed-containment system. It is open at the bottom and best suited for use in unique, sheltered sites.

Myth #16: Salmon farming is a small-scale experiment and has no future in helping ensure a global source of protein or local jobs.

Reality: Aquaculture, including farmed salmon, has emerged as an increasingly important contributor to supply the global demand for fish and seafood over the last 15 years. The Food and Agriculture Organization (FAO) of the United Nations says the world's population and growing wealth will significantly increase the demand for fish and seafood by 2030. The global aquaculture industry currently represents 29 per cent of the volume and 38 per cent of the value of global fish landings. Canada ranks 22nd among aquaculture producing nations and accounts for less than one-third of one per cent of global farmed fish and seafood production.

In 2003, farmed fish and seafood production in Canada was valued at \$586 million comprising approximately one fifth of all Canadian seafood production. It currently employs about 6,000 people. Within the next 15 years, it is projected that the Canadian aquaculture sector, growing at

10 to 15 per cent annually, could generate in excess of \$2.8 billion annually, providing year-round employment for people in coastal, rural and Aboriginal communities. Canada has the potential to be in the top three global competitors in aquaculture production.

Date Modified: 2007-07-19

<http://www.dfo-mpo.gc.ca/media/back-fiche/2005/salmon-eng.htm>

22/10/2009

Loose Documents - Reports - From shelf over desk
Office of Heather James
Resource Management
DFO-NCR

CAN045946_0005