

Farm-Raised Salmon: Food Safety Issues

The salmon war:
An environmentalist concoction
that is bad for consumers.

Few foods have the potential to do so much good in the diet as salmon. While the dramatic reduction in coronary heart disease (CHD) is the primary benefit, there are others that surface every day. Best of all, eating salmon is something that is not a nutritional chore. It's not something people have to eat because it is good for them, it is something they eat because they like it.

But all of that is threatened in the name of wild salmon. Not by the wild salmon industry, who for the most part promote their product on its own merits as they strive to carve out a premium priced niche in the market. It's done

mostly by environmentalists, who, after failing to make their case with regulators and consumers on environmental grounds, but still hating farmed salmon with a passion that has now outstripped any logical fault of the fish or producers, are throwing food safety and nutrition misinformation about on every possible front.

Worse yet, we see the tales that the farmed salmon foes flood the internet with being repeated by others without scrutiny. Sorting out the truth doesn't take much—a simple trip to the USDA website will tell you that farmed salmon has more omega-3 fatty acids than wild salmon. Or querying the FDA will tell you that farmed salmon PCB levels are almost 100 times below the FDA tolerance. Other examples abound.

Who gets hurt by all of this? Consumers. All of them, but especially those who cannot afford \$15-a-pound wild salmon—either on a regular basis or even once in a while—and may be scared away from \$5-a-pound farmed salmon, which is every bit as good. Unfortunately, these middle class consumers get heart disease too. And even the wealthy salmon buyers who don't blink at the price, won't find fresh wild salmon eight months of the year. But the saddest fact is that since most consumers cannot tell wild from farmed, they may stay away from salmon all together.



PCBs

A recent report about farmed salmon by the Environmental Working Group (EWG) has resulted in concern about the acceptable levels of PCBs in farmed salmon. While, overall, PCBs in the environment are a concern, food safety experts agree that the low levels found in farmed salmon do not warrant any change in salmon consumption patterns and the benefits of salmon greatly outweigh any unproven risks.

The genesis of the report was a sample of 10 fish done by the EWG which showed an average PCB level of 27 parts per billion (ppb) which is 99 percent under the tolerance of 2,000 ppb (2.0 parts per million) set by the U.S. Food and Drug Administration (FDA). The EWG report has been heavily criticized by many independent scientists because of its lack of scientific methodology and its conclusions.

While the levels are far below the FDA tolerance, the EWG finds fault with them. Rather than the FDA tolerance, they want to use guidelines set by the Environmental Protection Agency (EPA) for sport and subsistence fishermen who repeatedly fish the same heavily contaminated waters. The implication by the EWG is that since the EPA guidelines are lower, they must be the ones to follow. That is not the case, however, since these guidelines are for a different purpose. The EPA guidelines do not represent new findings, nor new methodology.

The EWG view is at odds with not just the FDA, which has issued a statement reaffirming their tolerance (they reviewed it in 2000, specifically with regard to this issue), but also with the stated positions of the National Cancer Institute regarding the cancer risk of PCBs at the low levels found in salmon, the National Academy of Sciences (which completed a review of this topic just six months ago) and a host of other reputable, independent scientists. Much of what is in the report has been quoted in the media without much (or any) analysis of the facts.

The report acknowledges the benefits of omega-3 fatty acids in salmon and urges consumers to choose wild salmon to gain these benefits. It did not include any analysis of wild salmon in the testing and ignores studies that show levels of PCB several times greater in wild salmon than in farmed.

It is important to note that this report is neither a study nor research, in the accepted use of the word. It is largely undocumented, has not undergone peer review, and lacks the scientific rigor and unbiased analysis to give it meaning. Most of all, it has no bearing on the safety of farmed salmon. Below are a few of the statements made about the study by responsible, independent scientists and organizations.

Robert Lawrence, Professor, Johns Hopkins Bloomberg School of Public Health

"The benefits of eating fish rich in fatty acids are more clearly proven than the risk of PCB exposure. Omega-3 fatty acids protect against heart disease, reduce hypertension and ease joint pain and arthritis."

Lawrence led a National Academy of Sciences panel on the health implications of PCBs and similar compounds that issued a report in June. The panel decided against changing the current federal recommendation to consume two servings of fish a week.

Terry Troxell, Director, FDA Office of Plant and Dairy Foods and Beverages

"Part of our equation is looking at the overall picture, the positives in nutrition versus the trace levels of PCBs that may be remaining in our environment."

FDA officials began a review of their standards for dioxins and dioxin-like substances, such as PCBs, in 2000, including an examination of farm-grown and wild salmon. The FDA continues to recommend eating salmon and other fish because of the health benefits.

Charles Santerre, Professor of Food and Nutrition at Purdue University

"If the public listened to this, our health would be negatively affected. Any small additional risk of cancer is far outweighed by the benefits of fatty acids in the fish."

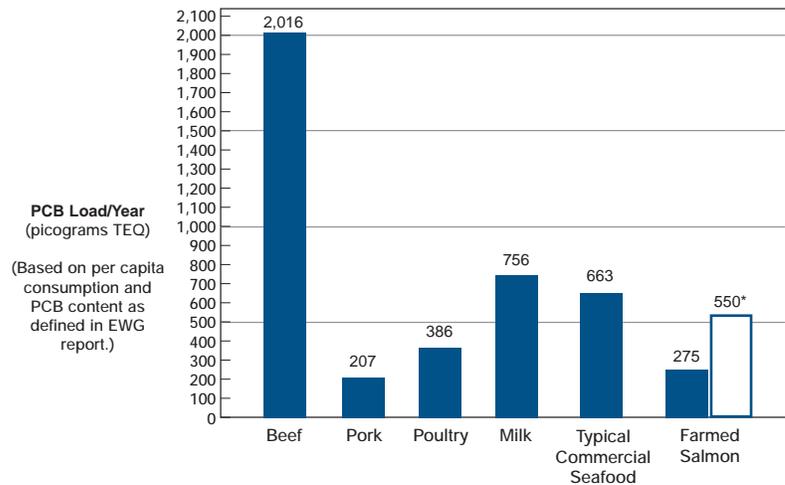
The Risk In Perspective: Salmon Compared to Other Food

Unfortunately, PCBs are found throughout the environment and they end up in many of the foods we eat. Salmon farmers aggressively deal with this in many ways and have been successful at lowering PCB levels over the years, as is evidenced by the current levels, which are far below the existing tolerance and continue to decline.

To get a perspective on PCBs in the environment and how misleading the EWG report is if you simply read their headlines, consider the graph on the right. It represents the PCB intake based on per capita consumption of various foods referenced in the EWG report using their PCB numbers.

What it clearly shows is that salmon is not the source of most of the PCB load, and that even if per capita consumption of salmon were to double, it would be a fraction of what it is in beef. Note that the per capita consumption of milk means it is 507 glasses of milk a year, far below what most growing children drink. If the same standards as the EWG wants applied to salmon for limiting consumption to one serving a month were

Annual Per Capita Load of PCBs by Food
(Based on Environmental Working Group report of July 30, 2003)



* Salmon at twice the current per capita consumption level.

applied to milk, it would mean that people could only drink a single 6-ounce glass of milk every other day.

This is not to indict any other food, or to dismiss the PCB levels in salmon as unimportant, but it does call the logic and motivation of the EWG report into question.

Mercury

Mercury, which has been found to be a troublesome problem in some fish, prompting the FDA to recommend some individuals limit their intake, is not a problem in farm-raised (or wild) salmon. In fact, in ongoing testing conducted by the FDA, salmon is consistently rated as among the fish with the very lowest mercury levels, most often at no detectable levels.

Farmed vs. Wild

As you view these facts you will find we often make comparisons to wild salmon. This is not to imply wild salmon are inferior, but simply because many of the misstatements compare farmed to wild. So to make what we say clear, we need to refer to the comparison.

From a health and nutrition perspective it is much better for consumers to know that all salmon are good for them, rather than splitting hairs about the nutritive value of wild vs. farmed salmon.



Antibiotics and Hormones

Antibiotic Residues

Antibiotics are used in salmon feed from time to time for the treatment of specific disease conditions which occur in both farmed and wild salmon. Antibiotics are not used for growth promotion or for low level prophylactic treatment, and overall antibiotic use in salmon is a fraction of what is used in poultry and livestock operations. In Canada, for instance, less than 3 percent of the feed is medicated, and some farms use no medication at all.

Antibiotics are administered under the direct supervision of a licensed veterinarian and for salmon sold in the United States, only drugs approved by the United States Food and Drug Administration (FDA) are permitted to be used.

There are strict withdrawal periods which are monitored by government agencies, including the FDA, for salmon produced or consumed in the United States. These are designed to ensure that antibiotics in salmon harvested for food do not exceed permissible limits.

Hormones

Hormones are not used in salmon grown for human consumption.

An Interesting Fact About Wild Salmon

About 30 percent of the wild salmon caught start their lives in hatcheries operated to “enhance” the wild catch. Here they receive the same antibiotics as farm-raised salmon. Most also receive astaxanthin at this time as it is shown to increase growth and survival.

Color

The nutrients that impart the pink flesh color are included in the feed of farm-raised salmon. One of these nutrients, astaxanthin, is identical to the astaxanthin that salmon which swim in the wild ingest when they feed on other marine organisms, such as krill and small shrimp. Astaxanthin is a naturally occurring carotenoid—in the same family of nutrients as vitamin A—and has a vital nutritional function as well as providing color to the flesh of wild and farmed salmon.

All living organisms require carotenoids in one form or another for proper growth and development. Beta-carotene—the pigment that makes carrots orange—is the most familiar carotenoid; however, these carotenoids are found almost everywhere in both plants and animals.

The level of astaxanthin found in the flesh of both wild and farm-raised salmon is essentially the same, although some highly pigmented wild salmon may have higher levels. Additionally, astaxanthin has been

approved for use by the FDA of the United States and by numerous food regulatory bodies around the world for use in a wide variety of food products. However, unlike in most other foods, in salmon astaxanthin is not added to the fish, but is provided in the feed. Hatchery-raised salmon destined for release to enhance wild stocks also receive astaxanthin as a nutritional supplement in their feed.

The other carotenoid used in salmon feed, canthaxanthin, which is used in place of or with astaxanthin, is found naturally in trout, mushrooms and other foods. It too is approved by the FDA and numerous regulatory bodies around the world and is currently added directly to a wide variety of foods.

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