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Report Cites Health Risks of Farm-Raised Salmon

■ Levels of contaminants are higher than in wild fish. Industry officials dispute conclusions.

By Kenneth R. Weiss, Times Staff Writer

Salmon raised in ocean feedlots, the main source of supply for American consumers, contains such high levels of PCBs, dioxins and other toxic chemicals that people should not eat it more than once a month, according to an extensive study reported today in the journal Science.

The study, which has triggered heated protests from the industry, focused on commercially raised salmon in both the Atlantic and Pacific. It found roughly 10 times more PCBs, dioxins and pesticide residues in farmed salmon than in the wild variety. The amount of contamination exceeded some federal guidelines, although officials of the Food and Drug Administration said that the levels of PCBs detected in the fish are not high enough to justify the limit on consumption.

Researchers say the culprit is salmon feed: pellets of ground up small fish, which are rich in fish oil, that help farmed salmon grow fat fast but also contain concentrated amounts of pesticide residues and industrial byproducts that have spread widely in the environment.

Analyzing more than two tons of fish bought in the U.S., Canada and Europe, a team of scientists found that amounts of PCBs, or polychlorinated biphenyls, were the highest in fish from offshore farms in Scotland, Norway and the Faroe Islands, located between Iceland and Norway. Amounts were not quite as high in salmon raised in British Columbia, Washington state and Chile.

None of the high levels exceed standards set in 1984 by the Food and Drug Administration for

commercially sold fish. But they are higher than the guidelines set by the Environmental Protection Agency in 1999 for recreationally caught fish, which are 40 times more restrictive.

"Just because the contaminants we found do not exceed FDA levels, that doesn't mean they are safe for consumers to eat them," said Dr. David O. Carpenter, a study coauthor and a professor of environmental health and toxicology at the State University of New York at Albany.

The health warning in the study that is more restrictive than the FDA's has sparked a sharp reaction from the booming salmon-farming industry, which now produces most of the fresh salmon sold worldwide and supplies more than 80% of America's third most popular seafood, after shrimp and canned tuna.

Charles Santerre, a food toxicologist at Purdue University and an industry consultant, called the study flawed because it failed to take into account the nutritional benefits of eating salmon. He said any slightly elevated risk of cancer pales in comparison with the advantages of consuming salmon rich with omega-3 fatty acids, which help prevent heart attacks.

Even an increase in farmed salmon consumption, he said, is a worthwhile trade-off in the flight against heart disease, American's No. 1 killer. "I would calculate 6,000 people getting cancer over their lifetime, that's an approximation, versus potentially saving the lives of 100,000 individuals every year."

Furthermore, Santerre said, the levels of contaminants detected in the study show salmon to be perfectly safe, as is recognized by the FDA.

The study's team of six scientists doesn't dispute the benefits of omega-3 fatty acids, but says consumers should opt for wild salmon or other sources, such as canola and flax oil.

The team also took issue with the FDA's standards, which Carpenter said are outdated and focus too much on the economic implications of restrictions and not enough on the long-term health effects of PCBs and dioxins, which build up in body fat and linger there for decades.

Aside from a slightly elevated cancer risk from these potential carcinogens, he said, the chief concern is that pregnant women can pass on these contaminants to their fetuses, impairing mental development and immune-system function.

He said women and girls should limit their consumption of salmon raised in feedlots to less than once a month.

"It's never possible to draw a clear line between safe and unsafe," Carpenter said. "Our recommendations are that women and girls should reduce their consumption of farmed salmon and other contaminated fish until they are through reproductive age."

The study also calls for labeling whether the salmon is wild or farm-raised. No law requires such labeling, although Atlantic salmon almost always comes from a farm because wild Atlantic salmon is extremely rare due to overfishing.

For its part, the FDA says it is not completely satisfied with the status quo.

"We do think that the levels [in farmed salmon] should be lowered," said Terry Troxell, an FDA office director and toxicologist. "However, we don't believe there is a public health concern with the levels seen here…. Our message to consumers is not to alter their consumption of wild or farmed salmon."

EPA officials take a different view. In a statement, the agency said it "stands by its guidance" and is reviewing the study to make sure there were no errors in applying the guidance.

Linda Birnbaum, the EPA's chief of experimental toxicology, told Science magazine that the study gives consumers valuable information: "I think we can begin to make informed choices about what kind of fish to eat."

The salmon industry and study authors found common ground on one point. Both want the FDA to revisit its standards of these contaminants in salmon and collaborate with the EPA to end consumer confusion.

But FDA officials said they preferred to focus on current efforts to lower levels of dioxins and other contaminants in all food sources, rather than diverting their attention to updating their standards for farmed fish.

The study draws attention to the different approach to health advisories by the different agencies. While the EPA only considers human health risks, the FDA is required by law to consider a range of factors, including the economic impacts of its standards on the food production system.

This was the fourth study to compare levels of PCBs and other contaminants in wild and farmed salmon.

The first three studies involved a tiny sampling, examining PCBs and dioxins in 10 fish or fewer because of the high costs of testing each fish. Their results were dismissed by the industry as shoddy work or too small to be meaningful.

Two years ago, the Pew Charitable Trusts awarded $2.5 million to the team of university scientists for a more definitive study, which tested 700 fish bought from markets across Europe and North America — including Los

Angeles — and from wholesalers selling for all major producers.

Industry representatives question Pew's motivation for the study.

They point out that Pew previously financed projects by environmental groups to scrutinize problems associated with salmon farming, including the spread of pollution, disease and the depletion of wild fish stocks used to feed carnivorous fish grown in pens.

"They found they cannot get rid of salmon farming, so they're trying to scare consumers away," said Alex Trent, executive director of Salmon of the Americas, an industry group.

It's a charge denied by both Pew and the scientists, who said Pew had no influence over their results.

Testing farmed and wild salmon for 50 contaminants, the scientists noted a big difference in 13 of 14 organochlorine pollutants, including banned pesticides, PCBs and dioxins.

Farmed salmon from Scotland and the Faroe Islands were the most contaminated. The study recommends less than one-half meal a month of these fish.

Salmon grown in British Columbia and Washington were cleaner, but the least contaminated were from farms in Chile. The researchers said these fish can be eaten once a month without exceeding EPA guidelines.

The difference, the researchers confirmed, is the feed. Testing fish oil and meal used to feed penned salmon, the researchers found that the oil from fish caught in the South Pacific, far away from the industrialized north, was the cleanest.

None of this is news to salmon farmers. "Our farmers routinely test salmon for PCBs and other contaminants," Trent said.

"We used to be much higher. And every year it comes down. …. We're getting cleaner fish oil and meal." Ultimately, Trent said, the industry hopes to figure out how to switch from fish oil to soybean or canola oil, which will wipe out the contaminant issue.