

Safe to Eat Fishery Products in Marketplace Now

Radionuclides Accumulation Seen Having Only Limited Effects on Fish

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The Fisheries Agency of the Government of Japan says it is safe to consume fishery products being sold in markets in Japan. There are no fishery activities under way currently in the sea area near the Fukushima Daiichi nuclear plant, according to the Agency's website (http://www.jfa.maff.go.jp/e/q_a/index.html). "In the sea areas of the other prefectures adjacent to Fukushima Prefecture, fishery activities will be resumed only after relevant prefectural governments confirm safety for human consumption through inspections on radionuclides," says the Q&A page of the site.

As for the accumulation of radionuclides in the fish body in the sea, it is expected that radioactive nucleotides in the ocean have only a limited effect on fish. This is because the concentration of such materials will remain low due to the huge volume of seawater and the effect of oceanic current, according to the website.

Fisheries Agency Briefing

Meanwhile, Dr. Ichiro Nakayama, Counselor in the Fisheries Agency's Resources Enhancement Promotion Department, gave Tokyo-based foreign media a detailed briefing on the above and other issues at the Prime Minister's Office on April 7. Following are excerpts of the briefing:

The first is the bio-accumulation or bio-concentration of radionuclides through the food chain. Please refer to page 1 (see the attachment). We have the concentration factor, which is the ratio between the concentration in the fish body and the concentration in seawater. So we try to determine the degree of concentration. Values are given for cesium, iodine, uranium, plutonium, mercury, DDT and PCB referring science reports. And cesium and iodine, which are currently measured, are at very low levels when it comes to the concentration factor, as compared to DDT, for example. From 1959, 59 types of fish, as well as seashells and various marine products, and 230 samples had been monitored every year for more than 50 years. Page 1 shows DDT has a high value of 12,000. When it comes to cesium and iodine, it would be as low as 5 to 100, or 10.

The chart on page 2 shows iodine-131 has a half-life times of 8 days.

Cesium, does not accumulate in a specific organ of these organisms, however, the mechanism within the organism is not fully elucidated. Cesium-137 has a half-life times of 30 years and cesium-134 about a half-life times of two years.

On page 3 is shown how marine fishes would excrete salt. Marine fishes drink a lot of seawater, containing that cesium, chloride, potassium, etc. Once they are taken inside body, they are excreted through the gills and urine. Thus, over a short period of time Cesium is excreted ex vivo. Therefore it does not accumulate in fish. That is why the concentration factor is very low, like iodine being 10.

Page 4 shows the relationship between the Cesium-137 concentration in seawater and in fish body.

From 1990, environmental radionuclide had gradually decreased. Simultaneously with reduction in the cesium level in seawater, the cesium level in the fish body had been decreasing. Thus, the Cesium-137 level in the fish body depends on that in seawater.

On page 5, we have the data taken from the experiment, and Cesium-137 is shown to the right. It has a biological half-life times of about 50 days. This means it takes 50 days to be reduced to half the level after it goes into the organism. What about the natural biological half-life times in natural condition? That is shown in the bar chart below. This is from 1985, and in 1986 the accident in Chernobyl took place and so there was a spike here. Cesium-137 is shown here, and after the Chernobyl accident this came down quite dramatically, which means that the metabolism of Cesium-137 is very rapid. Also, like in the experimental value, in the natural condition, Cesium-137 is excreted quickly. The source of this information comes from data compiled by the Fisheries Research Agency.