

Professor: Cesium in wild mushrooms not caused by Fukushima accident

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By SEIKO SADAKUNI/ Staff Writer

When high levels of radioactive cesium were detected in wild mushrooms in Towada, Aomori Prefecture, a restaurant owner pointed her finger at the Fukushima No. 1 nuclear plant.

The government slapped a ban on shipping wild mushrooms for 10 prefectures, including Aomori, Nagano, Shizuoka and Yamanashi.

The 70-year-old woman was forced to stop using wild mushrooms in the stew and vinegared dishes served at her restaurant in Towada, 350 kilometers from the crippled nuclear plant. She now buys screened mushrooms from a vegetable stand.

She still asks, "How can the mushrooms be contaminated when the city is so far away from the nuclear power plant?"

Gakushuin University professor Yasuyuki Muramatsu, an expert on radioecology, has an answer: The high radioactivity levels in the mushrooms were not caused by the Fukushima disaster, but by events much farther away.

If the Towada "chichitake" mushrooms had been contaminated by the Fukushima accident, then two types of radioactive cesium--cesium-134 and cesium-137--would have been detected in roughly equal amounts, he said.

Cesium-137, which has a half-life of 30 years, was detected at a level of 120 becquerels, exceeding the government-mandated safe level of 100 becquerels per kilogram. But no cesium-134, which has a half-life of two years, was found in the mushrooms.

Similarly, in "sakura shimeji" mushrooms from the city of Aomori, cesium-137 was measured in late October at 107 becquerels, while almost no cesium-134 was found.

"The fact that no cesium-134 has been detected proves that the contamination happened prior to the Fukushima nuclear accident," Muramatsu, 62, said. "It is from nuclear weapons tests conducted by the Soviet Union and China from the late 1940s to the late 1960s, and from the Chernobyl accident in 1986."

In the 1990s, after the Chernobyl disaster, Muramatsu and his research team studied the effects on wild mushrooms in Japan. They found radioactive cesium exceeding 100 becquerels, mainly in northern Japan.

Some of the mushrooms topped 1,000 becquerels, and when dried, some had readings that were over 10,000 becquerels.

At that time, the Japanese government did not have any restrictions on shipping.

According to the Ministry of Health, Labor and Welfare, a study of wild mushrooms in Fukushima Prefecture following the nuclear accident found some within the safety limits, while radioactive cesium topping 10,000 becquerels was detected in others.

Muramatsu said many mushrooms in and around Fukushima Prefecture have clearly been contaminated by the nearby accident, but some had already been affected by other causes, such as nuclear weapons tests.

Mushrooms have fungal filaments called hyphae, which extend into the ground and act like roots. A hypha easily absorbs radioactive cesium in the soil of forests, making wild mushrooms more likely to build up cesium than vegetables. The absorption rate differs among mushroom types.

"The ones on the market are fine since they're being screened, but people should avoid eating too many mushrooms that they pick themselves in places at risk of contamination," Muramatsu said.

According to a statement from the health ministry's inspection and safety division, "We need to observe changes over the long term, and we want to work with relevant organizations to study (this issue)."

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