



Dump Fukushima Radioactive Water in the Sea Not in Our Backyard

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Dear Editor-in-Chief

Recently, Japan is preparing to release radioactive water containing contaminants into the Pacific Ocean. This water consists of a mixture of groundwater, seawater, and water used for cooling the reactors in the Fukushima nuclear accident (1). This action has raised concerns among neighboring countries. In South Korea, people are panic-buying salt (2).

Although IESE claimed that discharging the radioactive water into the sea might be safe, there is no clear answer regarding the long-term accumulation and enrichment of radionuclides and how they will affect the marine ecological environment, food safety, and public health.

In reality, removing radioactive material and minimizing the environmental impact of a nuclear plant accident is an extremely challenging task. The radioactive water can disperse throughout the entire Pacific and potentially contaminate the food chain, ultimately affecting human beings. A study has reported elevated radiation levels on the west coast of Vancouver Island shortly after the Fukushima incident (3).

The lack of transparency regarding these matters has caused people to worry that this action could result in another man-made ecological disaster. For instance, the level of Tritium (which has a half-life of approximately 12 years) exceeds the

national standard, even though the water is filtered for most radioactive isotopes (4). Models estimating the transport and dispersion of Tritium from the radioactive water of Fukushima suggest that radioactive seawater will reach the Pacific coast of North America within 4 to 5 years (5).

Another concern is Cs137, which has a half-life of approximately 30 years and can significantly increase cancer incidences, as demonstrated by a cohort study focused on the Chernobyl nuclear power plant accident in Sweden (6). The release rate of Cs137 has remained constant for 2 years at about 1.8% of the inventory per year, indicating ongoing dissolution of the fuel debris (7). Through bioaccumulation and bioconcentration, Cs137 can enter the human food chain (8, 9). For instance, in Fukushima prefecture, Japan, the levels of Cs137 found in boars during the governmental food monitoring campaign were 7900 Bq/kg (9). The persistence of radiocesium in boars appears to be greater than expected based on the constantly decreasing Cs137 inventory observed in the soil, suggesting a highly retentive food source or other radioecological anomalies that are not yet fully understood (9).

Considering the proximity, neighboring countries have the right to express their concerns and re-



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quest that the Japanese authorities develop an appropriate discharge plan based on scientific and technological considerations. Additional detailed analysis and checks are necessary. Fukushima radiation already created a unique test of marine life's hardiness (10). Without convincing evidence from external third-party environmental evaluations, especially from countries that may potentially be affected, discharging radioactive water into the Pacific, our backyard, will harm the environment.

Conflict of Interest

The authors declare that there is no conflict of interests.

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