

Mountains limited spread of fallout from Fukushima

14 November 2011, By MALCOLM RITTER , AP Science Writer

A map of radioactive contamination across Japan from the Fukushima power plant disaster confirms high levels in eastern and northeastern areas but finds much lower levels in the western part of the country, thanks to mountain ranges, researchers say.

The mountains sheltered northwestern and western parts of Japan as radioactive cesium-137 emerged from the power plant and blew downwind, the scientists said.

Cesium-137 is just one of the [radioactive materials](#) that came out of the plant, but researchers focused on that because it's particularly worrisome. It lasts for decades in soils, emitting radiation and potentially contaminating crops and other agricultural products.

The research, published online Monday by the [Proceedings of the National Academy of Sciences](#), shows estimated levels of contamination. It did not investigate implications for health.

The researchers, from Japan, Norway and the United States, said the levels they estimated would severely restrict food production in eastern Fukushima Prefecture and hinder agriculture in neighboring provinces. That outcome is already recognized in Japan, where regulators monitor food products from those areas for contamination before they are cleared for shipment.

The Fukushima Dai-ichi plant, 140 miles (225 kilometers) northeast of Tokyo, was heavily damaged in March when it was swamped by a tsunami triggered by an earthquake.

A second report, from a separate group of Japanese scientists, investigated levels of [radioactive cesium](#), iodine and [tellurium](#) on the surface in east-central Japan. Such materials are airborne after a [nuclear accident](#) and fall to the ground when it rains. While the power plant

incident began on March 11, the study linked ground contamination in the Fukushima prefecture to a March 15 rainfall, and contamination in Tokyo and some other areas to a March 21 rain.

Soil contamination in Tokyo has already made officials ban shipment of tea leaves grown there, and some elementary schools in Tokyo and nearby have taken decontamination steps like removing topsoil. In addition, there is growing concern about radioactive "hotspots" found in Tokyo and elsewhere outside Fukushima. The Japanese government has taken responsibility for decontamination.

More information: "Cesium-137 deposition and contamination of Japanese soils due to the Fukushima nuclear accident," by Teppei J. Yasunari et al. *PNAS* (2011).

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