

USDA Foreign Agricultural Service

GAIN Report

Global Agricultural Information Network

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How the GOJ is Protecting the Domestic Meat Supply from Radionuclide

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Agricultural Situation

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Report Highlights:

This report discusses the measures the Japanese Ministry of Agriculture, Forestry and Fisheries (MAFF) is taking to ensure in the aftermath of the release of radiological material from the Fukushima nuclear plant that domestically produced beef, pork and poultry entering commerce are safe for human consumption.

General Information:

MAFF and prefectural authorities under MAFF direction have instructed all livestock producers in the areas affected by the Fukushima plant to keep their animals inside shelters, to not allow the animals to graze, nor to drink from surface water sources in order to minimize radiological contamination.

More specifically, using increasingly detailed maps of where radioactive contamination has been distributed by the Fukushima Nuclear plant, MAFF has identified areas of high and medium ground contamination. Within each of these zones the location of livestock production units is known and MAFF has been working with those producers to minimize the contact that their animals have with radiological contamination. The main sources of possible contamination are from water and feed. Livestock producers within the affected zones are visited by prefectural officials and questioned about their husbandry practices. In cases where producers were not able to minimize possible contamination through the measures mentioned above their animals are not marketed.

Officials have sought to help move the cattle and pigs out of the radiation affected zones. This ensures that the animals are not subjected to continued recontamination, and allows the levels of radioactive isotopes that the animals may have internalized to dissipate. The effective half-life of even Cesium-134 and Cesium-137 in cattle and hogs is reported at between 20 – 60 days.* It is worth noting that there are reportedly not many livestock producers in the area of highest contamination. There are, for example, only three beef cattle producers in this zone.

The risks of contamination are also greatly reduced by the fact that most livestock operations in Japan utilize imported feed, primarily from the United States. Because of the lack of pasturage, most operations keep their animals indoors rather than in fields.

Using the methods above, MAFF has a high level of confidence in the safety of meat products. MAFF reports that some 250 samples of meat bound for commercial distribution from these areas have been tested to date and none of these samples has been found to be in violation of the 500 Becquerel/kilogram set by the Ministry of Health.

*All radionuclides have both a physical and a biological half-life. The physical half-life is the one related to radioactive decay. For I-131, it is 8 days, Cs-134 about 2.5 years and 30 years for Cs-137. They each also have a biological half-life which is the time it takes for half the radioactivity to be eliminated from the body due to normal metabolic/excretory processes. The terms are used to calculate the total radiation dose to an organism when it internalizes radioactivity. The combination of the physical and biological half lives is called the effective half life; the combination of the two is shorter than each one individually. The formula is: $T(1/2)_{\text{effective}} = ((T(1/2)_{\text{phys}}) \times (T(1/2)_{\text{biol}})) \div (T(1/2)_{\text{phys}} + T(1/2)_{\text{biol}})$