

Personal Radiation Disclosure to our Friends and Colleagues Visiting Western Japan

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It has been more than 7 month since 3.11, the Fukushima day. I have written this note as a potential resource for those who are planning a visit to western Japan in evaluating various factors and deciding whether to go ahead with the visit or not. The note is not a rehash of information released by the "official" sources such as the national and local governments and their contractors. Rather, it is basically how I view the situation personally based on all the information I have come across. I cannot validate most of the information professionally myself, as my expertise is not in these areas related to radioactivity and its medical or biological effects. Therefore, please consider this as my personal advice to friends and colleagues abroad. However, I am releasing this note via my laboratory web site, because I am in a position (like many of my colleagues here) to invite foreign scientists in an official capacity for seminars and conferences. I do not believe that it is sufficient to convey the official information only, as released from the national and local governments. And I do get asked anyway about "the real situation" or "what I think" during the course of my work. So, here it is. Please note that none of the information and statements made in this note is officially endorsed by Osaka University or its departments, let alone the municipal or the Japanese government. [I do not believe it will happen, but just as a precaution: If this document quietly disappears from my lab web site, please consider it censored.]

Summary:

1. Environmental radioactivity

Radioactive emissions from damaged nuclear reactors still continue, but the reactors (or their remnants) appear to be in a relatively stable condition. The danger from atmospheric spread of particulate radioactive fallout, and resulting ground and soil contaminations are negligible in central- to western Japan. I am completely comfortable visiting Nagano, Gifu, Toyama, Ishikawa, Fukui, Aichi (Nagoya), Mie, and all Kansai prefectures including Shiga, Osaka, Kyoto, Nara, Hyogo (Kobe), and Wakayama (and all those further west). For example, data from Kyoto measurement stations (see the link below) indicate essentially the same unchanged level of radioactivity (at 1-3 meters from ground) before and after 3.11.

Kyoto prefecture telemetry data:

http://www.aris.pref.kyoto.jp/map_7.html

2. Radioactive contamination of food

Radioactive contamination of food is, in my opinion, a much more serious problem in areas where ground and soil are not contaminated directly. Most of western Japan is in this category. The Japanese government has set a provisional limit on the radioactivity allowed in most food items. Currently, it is set at 500Bq/kg for meat, fish, rice, vegetables, and fruit, etc. Based on sampling measurements, batches of crops and produce will not be shipped from the affected areas if the contamination level exceeds the criterion. At grocery stores, most food items show labels indicating the originating prefecture (for fish, the prefecture in which the catch was unloaded). For consumption at home, we and many other families tend to avoid groceries from these areas. Reputable hotels and restaurants generally follow the same practice.

Personally, I consider the limit of 500Bq/kg inappropriate and too high, since the current limit in European countries is about 1/10 of that value. However, most items sold at markets, even in Tohoku (northern Japan) area contain quite less than the above limit. Please see sampling data released by Greenpeace below (There is no equivalent official data released by the governments based on random sampling at the end of the distribution chain). The government does not require farmers and markets to display actual values of the measured radioactivity levels on the products themselves. Just the fact that they passed the sampling test is marked, or food is assumed to have gone through the sampling test if not marked individually. Therefore, consumers have been forced to choose products based only on the prefecture of origin in an effort to minimize the chance of encountering unlucky items. Unfortunately, this is the extent of what we can do individually, if we wish to minimize the radioactive intake.

Measurements by Greenpeace (in Japanese) -- [sampled September 4 ~ October 7, 2011]

http://www.greenpeace.org/japan/Global/japan/pdf/20111020_SUSEA_Result.pdf

English Summary:

<http://www.greenpeace.org/international/en/news/Blogs/nuclear-reaction/japans-radioactive-seafood-problem/blog/37450/>

These bar graphs (in the Japanese PDF document) indicate Bq/kg values (Cs134+Cs137) for fish and seaweed they purchased at relatively well-known supermarket chains in Miyagi, Iwate, Fukushima, Ibaraki, Tochigi, Chiba and Tokyo. Up until 3.11, nearly all of the items had at most 1 Bq/kg -- the bars would have been nearly invisible. (To anyone reading this note: If you know of better data, please let me know.)

We will of course try to take you only to reputable restaurants and hotels. However, it is nearly impossible to back-trace the origin of all items we eat, especially when you travel. Although the average level of contamination of produce out of Fukushima and immediate surrounding areas is nowhere near the limit of 500Bq/kg, and typically is probably like the Greenpeace data, they are being shipped out nonetheless, and are probably being used in processed food and at budget restaurants. They are certainly not being dumped. Therefore, they must be getting into food products or being served to customers somewhere. My conclusion is that nobody can avoid taking in at least some radioactivity as a matter of practicality.

I have publicly but personally expressed my concern and opposition to the current practice by the government. Many others are trying to change the policy but are having a hard time. In any case, this is the current situation in Japan as I see it. This is how most of us live everyday, but there is no reason that you have to do the same. That is why I wrote this. I obviously cannot promise that the situation will be better any time soon in the near future. However, since your stay is going to be relatively short, the total intake is not going to be that large, but it is going to be higher than what it used to be for certain.

Bon Voyage!

Izumi

P.S. [added 2011-10-26]

If you are interested in everything related to nuclear reactors, radioactive leaks and contaminations, policies, TEPCO, compensations, people's lives, medical consequences, etc., there is a new comprehensive site that came on-line in mid-October in English:

<http://fukushimaupdate.com/>

I am impressed with the extent of coverage here. As always, I am not necessarily endorsing everything the site carries. Please judge that yourself. From its "About" page:

"FukushimaUpdate.com went online on October 16, 2011. It is dedicated to providing news and information related to the nuclear crisis at the Fukushima Daiichi nuclear power plant in northeastern Japan. With neither a pro- nor anti-nuclear agenda and no axes to grind, Fukushima Update aims to be a one-stop source for reliable, fact-based reporting about the Fukushima situation."