

## **Start of monitoring test for water purifier utilizing radioactive cesium capturing material**

The Japan Atomic Energy Agency (JAEA) started the monitoring test of water purifiers for drinking water in Kawauchi Village, Futaba District, Fukushima Prefecture. In the purifiers, material that captures radioactive cesium is filled. The water purifiers were installed in 13 private houses in the village to check the performance of the capturing material for one year. This capturing material, which can adsorb and remove radioactive cesium dissolved in water, was developed jointly by JAEA and Kurashiki Textile Manufacturing Co., Ltd., (Kurabo Group). Well water and stream water are daily used as drinking water in Kawauchi Village. By the results of inspection of drinking water, it has already been made clear that the cesium levels are all below the detection limit.

"The 3rd Ground Water Summit" was held on November 10, 2012 organized by the Liaison Council for Safe, Secure and Delicious Groundwater, comprised of 10 municipalities which utilize underground water and stream water for drinking and other domestic use. Having conducted Decontamination Model Verification Project and provided support such as internal exposure testing for village residents in Kawauchi Village, the JAEA participated in this summit as a cooperation group and introduced this water purifier model (Topics Fukushima, No. 10).

The JAEA subsequently consulted with officials of Kawauchi Village on the monitoring test of the water purifiers in the village. The director of the Restoration Division of the village gave willing consent to the JAEA's proposal. He said: "Since the declaration by the mayor urging residents to return their homes in the village, decontamination and infrastructure building in the village have proceeded, and villagers have been returning gradually. Due to water inspection we already know our drinking water is safe, but still this project with water purifiers will contribute to allaying fear of village residents concerning water."

Ninety percent of the private residences in Kawauchi Village use well water, and the remaining ten percent use stream water. Until now inspection of drinking water has been completed about 1,150 houses, and results were all below the detection limit. The monitoring project gained the cooperation of 13 houses among them.

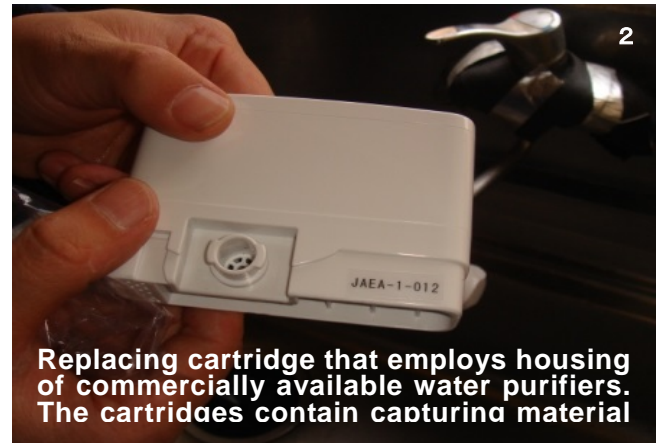
JAEA installed the water purifiers at the faucets in the kitchens of cooperating houses on March 13<sup>th</sup> and 14<sup>th</sup>, and explained the contents of the monitor test and gave instructions on



**Water purifier mounted on kitchen faucet in a private house in Kawauchimura**

how to use the purifier to the residents of each house. The monitoring test will be conducted for a period of one year, and the cartridges attached to the water purifiers will be replaced every two months to see how much ability to capture radioactive cesium remains. Also, feedbacks from the residents about the installed water purifiers will be solicited during this time.

The water purifier for drinking water (Photo 1) can adsorb and remove even minute quantities of radioactive cesium. As the cartridge (Photo 2) is equipped with an activated charcoal filter, it has also the ordinary purifying function just like the commercially available types.



**Replacing cartridge that employs housing of commercially available water purifiers. The cartridges contain capturing material**

The Kawauchi Highland Agricultural Products Factory was opened to the public on April 4. This is a hydroponic farm that grows plants in a completely closed off environment, using artificial light and safe ground water. As the plants are grown in an environment shutting out outside air, the safety of the products is demonstrated to consumers. Also, the fact that the factory is equipped with radioactivity measurement instruments and all the plants are inspected provides reassurance.

This facility equipped with the latest technologies and equipment was built in order to revitalize the agriculture industry, which is the main industry of Kawauchi Village. Also the factory is expected to help establish the village as a production center that focuses on safe food and stable supply, as well as expand the local employment and revitalize the local economy.

The factory is operated by a company jointly established by Kawauchi Village and a private company. This is the first attempt in Japan as a project of a plant factory where an administrative body is involved.

The factory produces 8,000 heads of leaf vegetables such as lettuce per day. They are grown in clean rooms. While fluorescent lighting used at conventional vegetable factories is used in two rooms, LED lighting is used in the other two rooms. Thus the best lighting can be selected according to the type of plant cultivated.

When entering the clean room, you will immediately notice the red and blue LED lighting. Crop growth can be speeded up by changing ratio of the two colors according to type of plant. This is the latest technology for plant cultivation.

The factory opened on April 26. Leaf vegetables will soon closely line up in the places called beds under LED lighting (Photo 3). Then the vegetables will be delivered nationwide as the products from Kawauchi Village. We are looking forward to it.



**Lettuce cultivation using LED light source (provided by Showa Denko K.K.)**