

Radioactive fallout from Fukushima nuclear meltdowns caused abnormalities in Japan's butterflies

Wednesday 19 September 2012, by [Jiji Press](#) (Date first published: 12 September 2012).

Radioactive fallout from the nuclear disaster in Fukushima Prefecture created abnormalities among the nation's butterflies, according to a team of researchers.

"We conclude that artificial radionuclides from the Fukushima (No. 1) nuclear power plant caused physiological and genetic damage" to pale grass blue butterflies, a common species in Japan, a recent article in Scientific Reports, one of on-line journals of the Nature Publishing Group, said.

Radiation exposure harmed butterflies' genes, and the damage could well be passed on to future generations, the article stated.

"Sensitivity (to irradiation) varies between species, so research should be conducted on other animals," said Joji Otaki, a team member and associate professor at the University of the Ryukyus in Okinawa.

"Humans are totally different from butterflies and they should be far more resistant" to the health effects of radiation, Otaki noted.

The researchers collected 121 adult pale grass blue butterflies in and outside Fukushima Prefecture in May 2011, two months after the nuclear crisis started.

Abnormalities such as unusually small wings were found in 12 percent of the total. But the rate rose to 18 percent in a second generation produced through mating among the butterflies collected and some even died before reaching adulthood.

When second generation butterflies with abnormal traits mated with healthy ones, the rate of abnormalities rose to 34 percent in the third generation, according to the article.

The team collected another 238 butterflies last September and determined that the abnormality rate stood at 28 percent. However, it nearly doubled to 52 percent among a second generation born to the original butterflies caught.

The researchers said the butterflies collected in May were heavily exposed to radiation as larvae. The impact was apparently more severe on the second generation, as well as on the butterflies collected in September, because they suffered heavy exposure at a far earlier stage while they were still fertilized eggs or just reproduction cells, according to the team.

The impact of artificial radiation exposure on the species was also investigated using larvae collected in Okinawa, one of the prefectures least affected by fallout from the nuclear disaster.

After the larvae were exposed to radiation and fed with leaves contaminated with radioactive materials, similar rates of abnormalities and premature deaths were observed, the article said.

P.S.

* Jiji, Aug. 12, 2012

<http://www.japantimes.co.jp/text/nn20120812a2.html>