PE-3 Organochlorine pesticides and herbicide (Diuron) in the coral reef ecosystems around the Ryukyu Islands, Japan

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Organochlorine pesticides (OCPs) are chlorine-containing compounds which are found in the environment as a result of human activities. Herbicide (Diuron) is a systematic substituted phenyl urea herbicide which is a broad spectrum herbicide used for weed, grass and bush control and it stops photosynthesis which in turn causes plants to stop growing. OCPs and Herbicide (Diuron) are known for their environmental persistence and global concern. Both have detrimental effects on the environment as well as humans. This paper evaluates the current and future status of contamination of OCPs (Organochlorine pesticides) and Herbicide (Diuron) in the coral reef ecosystems around the Ryukyu Islands. The Aja River, Asato River, Houtoku River, Kokuba River located in Okinawa mainland were selected for the OCPs and some rivers in Ishigaki and Miyako Islands were selected for Diuron study.

The concentration of the total organochlorine pesticides were in the ranges of 1.02-60.2 ngL^{-1} in river water. Among the OCPs, ΣHCB of α-BHC and Aldrin were the common detected compounds in river water. Various contamination patterns between the selected river water were observed. All rivers were contaminated with α,β- BHC, Aldrin and Dieldrin. The OCPs levels in all rivers were generally below guideline values in Japan, but some sites displayed levels which exceeded the EC and WHO Standards for Aldrin and α-BHC. For Diuron, current data revealed the density (kg/km^2) usage increased in Ishigaki Island and Miyako Island which reflects high concentration. The total amount usage of Diuron in the Ryukyu Islands is 17.508 tons each year. Our preliminary discussion for Diuron will be presented in this paper.

Keywords: organochlorine pesticides, diuron, Ryukyu Islands