

Influence of metal mine waste water on Zn and Fe concentration of seaweed in the Kanayama bay, Japan

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¹Wakayama University, Wakayama 640-8500, Japan,
(hiro@center.wakayama-u.ac.jp)

High Zn and Fe concentration seaweed

The highest Zn and Fe concentration seaweed was found in the Kanayama bay, center of the Japan. Although the Kanayama bay is a small with 100 m in length and 50 m in width, the high concentration of Fe and Zn for seaweed was found. The small closed Kanayama mine for Pb was facing the bay and Fe and Zn loads from mine waste reached 10 ton per year. Then, the bay can keep unusual condition with a lot of Fe oxide particle and sea animals eating floating plankton and attached algae such as oyster, barnacle, sea anemone, sea urchin and shell were not found in the bay. However, rocks in the bay were widely and always covered with seaweed, although species were limited comparing species outside the bay. Figure1 shows that Zn concentrations of seaweed at dry condition reached several %. Fe concentration reached 10%. Fe and Zn concentration for green seaweed was relatively higher than those of brown and red seaweeds. Some seaweed was attached with small Fe oxide particles after washing by seawater in the field. Zn was soluble style in sea water and then Zn in seaweed was thought to be contained in seaweed body. In the bay, some fish was also observed and influence of Fe and Zn on fish and other animals was problems.

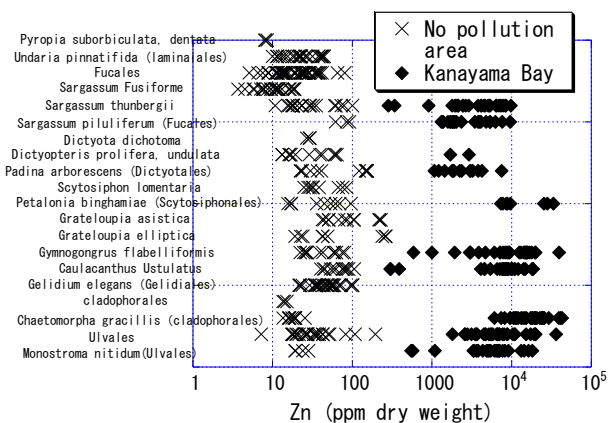


Fig.1 Zn concentrations (dry weight) of seaweed sampled at Kanayama Bay and other areas in Japan