BASIC EXPERIMENTS OF CS UPTAKE CAPABILITY FOR
Eleocharis acicularis

Akinari Takehara[1], Masayuki Sakakibara[1], Yasushi Sato[1], and Sakae Sano[2]

[1] Graduate School of Science & Engineering, Ehime University;
[2] Faculty of Education, Ehime University
e-mail : 1411akinari@gmail.com

ABSTRACT

Soil in the Fukushima area has been polluted with the radioactive contaminants such as Cs by the accident of Fukushima Daiichi nuclear power plant in March 2011. Remediation of soil contaminated with radioactive Cs remains one of the most important problems. Phytoremediation is an environmental remediation technique that takes advantage of plant physiology and metabolism to remove radioactive contaminants. *Eleocharis acicularis* is well known as heavy metal hyperaccumulator aquatic plant and expected as the strong candidate for application to Phytoremediation of polluted water and soil. In this study, a laboratory experiment was carried out to investigate the potential of *E.acicularis* for Phytoremediation of radioactive Cs contaminated site.The plants were grown hydroponically and placed in solutions containing Cs and K at different concentration (Cs concentration: 5 mg/L, K concentration: 0, 0.2, 2, 5, 50, 100 mg/L) in a period of 21days.In the experimental results, the highest concentration of Cs was 1560 mg/kg-DW in *E. acicularis* after 21 days. The concentration of Cs in plants decreased with the increasing initial concentration of K in the solution. This results indicate that *E. acicularis* has the ability to accumulate radioactive Cs from radioactive Cs contaminated soil and water, making it a good candidate species for radioactive Cs Phytoremediation.

Key words : Fukushima, *Eleocharis acicularis*, phytoremediation, Cs