Daya serap tanaman enceng gondok (Eichhornia crassipes L.) sebagai salah satu alternatif fitoremediator 137 Cs

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Abstrak

The accident accident of a nuclear reactors have a possibility to release radioactive substance to the surrounding environment so that the environment can be contaminated. One of the radionuclides which will be released to the environment is cesium-17 (137 Cs) which has half life 30 years. If the 137 Cs enters the human body, it will be distributed evenly throughout the body so that the critical organ of the 137 Cs is the whole body.

Phytoremediation is a means of restoring the contaminated environment using plants. Eichhornia crassipes are a harmful water plants which can grow fast and easily everywhere, and have the ability to absorb the various elements found in water unselectively. Therefore Eichhornia crassipes was chosen as the object of this research. By analyzed the absorption ability of Eichhornia crassipes, it can be recognized whether this plant can be used as phytoremediator for 137 Cs or not. After acclimated, Eichhornia crassipes was given 133 CsNO3 solution of variation of concentration as much as 5, 10, and 15 mg/l. On the fourth, eighth, twelveth, and sixteenth day after plants was given Cs, Eicchornia crassipes was taken and analyzed by neutron activation analysis.

The result of this research show that 133 CsNO3 absorbed is mostly accumulated on the root of the Eicchornia crassipes, that is (15.367 ± 0.126) mg/ (g dry roots). The largest of total absorption during this research is (9.308 ± 0.995).