

# ASPECTS ON PHYTO-REMEDICATION OF RADIONUCLIDES FROM WASTE DEPOSITS

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## **Abstract**

There are several waste dumps containing radioactive material such as tailings from uranium mining, ashes from forest industries wastes from gypsum industries etc. One type which has not been considered in this aspect is waste from glass factories. There are a large number of such waste deposits in Sweden. Radioactive elements such as Uranium have been used for making yellow/green glass. Such uranium was often depleted uranium i.e. uranium after extraction of <sup>235</sup>U after fabrication of nuclear fuel or nuclear weapons. Thorium uses for special glass such as lenses to improve quality. Thorium oxide is highly refractive and low dispersion; this translated into cheaper high-quality glass by allowing manufacturers to make lenses of lesser curvature. From nuclear tests and the Chernobyl accident <sup>137</sup>Cs has been deposited also on the waste dumps. Generally large areas following the Chernobyl and Fukushima accidents have been contaminated. Other natural radioactive elements such as <sup>210</sup>Pb, <sup>40</sup>K are either present in the raw materials or deposited from the atmosphere. Remediation will be necessary and it is also of interest to recover metals from economical point of view. Such recycling might result in new tailings containing higher concentrations of some elements. Phytoremediation is an attractive method which might also be effective for radioactive elements. The Indian mustard (*Brassica juncea*) has shown to take up U. Red maple (*Acer rubrum*) has been used for decontamination of <sup>137</sup>Cs, <sup>90</sup>Sr and Pu. Hemp (*Canabissativa L.*) is proving to be one of the best phytoremediative plants. There are specie of hemp with less toxins and allowed to plant. Tobacco (*N tabacum L.*) has been used for cleaning of U in mine tailings.

## **Keywords**

Phytoremediation, radioactive elements, <sup>137</sup>Cs, U.