

ABSORPTION BEHAVIOR OF TECHNETIUM AND RHENIUM THROUGH PLANT ROOTS

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The absorption behavior of technetium (Tc) and rhenium (Re) through plant roots was studied using nutrient solution culture. Radish samples, grown in culture solutions for 20-30 days in a green house, were transferred into plastic vessels containing nutrient solutions contaminated with multitracer solutions including Tc-95m and Re-183. The plant samples were grown individually for 1-7 days under laboratory conditions. The activities of radionuclides in nutrient solutions and oven-dried plant parts (roots, fleshy roots and leaves) were measured with Ge detecting systems. The concentrations of Tc-95m and Re-183 in the nutrient solutions after harvesting the plants were almost the same as those in the initial solution. Possibly, the radionuclides were taken up with water through plant roots. The distributions of Tc and Re in the plants showed no differences, thus, soluble Tc and Re absorption by plant samples were the same. It is suggested that Re could be used as a geochemical tracer of Tc in the soil environment.