

A Study of ^{222}Rn Concentration of Salty Underground Water and Spring Water in Jeju, Korea

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In the present study radon (^{222}Rn) concentrations in salty underground water (Lava seawater) and spring water (Yongcheonsoo) in Jeju Island was performed by using RAD H₂O of RAD7. Salty underground water samples were collected from two sites from March to June 2019. And spring water samples were collected 28 sites from March to June 2019. The activities of ^{222}Rn in LS1 and LS2 salty underground water were in the range of 0.40~3.77 (average (n=45): 2.33 ± 0.90 Bq/L) and 0.78~3.57 Bq/L (average (n=45): 2.04 ± 0.90 Bq/L), respectively. The activities of ^{222}Rn in spring water (28 sites) were in the range of 0.65~20.65 Bq/L (average: 5.64 ± 4.46 Bq/L). The radon concentration was higher in spring water in southern Jeju Island than in other regions. Overall, the higher the altitude, the lower the concentration of radon. It shows that radon has some relation with altitude. The effective dose due to intake of ^{222}Rn from LS1 salty underground water varied from 2.89 ~ 27.57 $\mu\text{Sv/y}$ with an average value of 17.02 $\mu\text{Sv/y}$. And the effective doses of spring water were in the range of 4.75 ~ 150.72 $\mu\text{Sv/y}$ (average: 41.14 ± 32.53 $\mu\text{Sv/y}$). In the present study, the effective dose from radon due to intake of drinking water is less than the recommended value of 100 $\mu\text{Sv/y}$, therefore, the contribution to the dose can be neglected. However, at S3 spring water, it showed a rather high value.

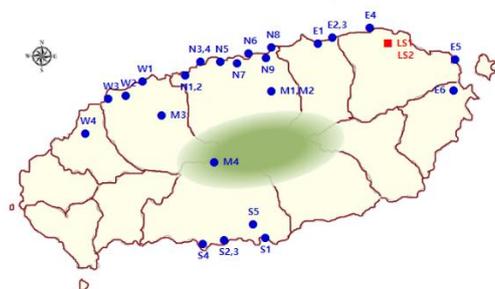


Fig. 1. Sampling sites of water.

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