Using Methods of Phytoremediation to Decrease Levels of Radon-222 in Soil Samples

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The main objective of this experiment was to determine whether methods of phytoremediation could decrease the levels of radon found in different soil samples. Phytoremediation techniques use biomass and their microorganisms to decrease the amount of contamination found in soil, water, and air samples. Radon-222 is the second leading cause of lung cancer in the United States, first leading cause amongst non-smokers. Radon-222 is found mostly in soil samples. When radioactive levels are higher than 4.0 picoCurries/ Liter, the surrounding area is at a higher risk for illnesses related to radioactivity. The experiment tested whether phytovolitization techniques are effective in decreasing levels of Radon-222 radioactivity in soil. The sample soil was tested with an average of 3.9 to 4.0 picoCurries/ Liter of Radon-222. Additionally, each plant was tested to see the amount of radon-222 it was infested with. Ambrosia artemisiifolia tested with an average of 0.02 picoCurries/ Liter. Melilotus officinalis tested with an average of 0.04 picoCurries/Liter. Phalaris arundinacea tested with 0.02 picoCurries/Liter of radon-222. At the end of the experiment, the pot's soil with Ambrosia artemisiifolia tested with 2.1 picoCurries/ Liter. Melilotus offcinalis tested with 3.7 picocurries/ Liter and the soil with Phalaris arundinacea tested with 1.9 picoCurries/ Liter. At the end of the experiment, the plants were also tested. The most effective was Ambrosia artemisiifolia collecting 1.7 picoCurries/ Liter and Phalaris arundinacea collecting 1.9 picoCurries/ Liter.

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