

Hannah Lenz
Filtering: Nature's Way

The purpose of this experiment was to determine what type of soil filters water better. Equal amounts of five types of soil were placed in containers designed by the experimenter to hold the soil in, but let water out. Then three cups of distilled water were poured into each soil and the sample then sat for 24 hours. The drainage water was collected. This was done to see how many nitrates were in the soil already. Next, Liquid 32-0-0 fertilizer was mixed with distilled water at a 1% rate to contaminate the water. Two cups of contaminated water was poured into each soil. These samples sat for 24 hours and the drainage liquid was collected. It was hypothesized that the caliche would filter better because it has the smallest particles and holds the most water and that the gravel would be the worst filter because it has rocks and bigger particles and these would not filter the nitrates. The water samples were tested using a nitrate testing kit that produces shades of color indicating the level of nitrate in the prepared sample. The loamy sand soil filtered the best followed by the loamy clay, and gravel third. Gravely silt soil was fourth, and caliche filtered the least contaminant. This determination was made on the least difference in the nitrate level between the distilled water and the contaminated water. Based on the nitrate test, the loamy sand filtered more of the contaminant. The data obtained rejected the original hypothesis.