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Getting to the Root of Groundwater Pollution

Groundwater pollution in landfills is a growing concern. With a simple clay and dirt landfill cover, precipitation can more easily pass through the cover, into the waste, and from there into the groundwater, contributing to groundwater pollution. Fortunately, there is at least one solution: evapotranspiration covers. These are composed of plants, soil, and rocks. The plants' roots soak up all, or most of the precipitation before it can leach into the groundwater. This experiment tested whether using plants with different root lengths would have an effect on the amount of leachate that occurred. The experiment was set up with four containers on a slight incline. A hole was drilled in the lower right corner of each container to allow water to drain out. One container had plants with long roots; one had plants with short roots; one had plants with both long and short roots; and one (the control) didn't have any plants at all. The hypothesis stated that the container with both short and long roots would be the most effective design, and this proved to be correct. There were a few unplanned variables, but the main one was the container with long roots cracking during the simulated storm at the end. This caused it to lose some extra water, but not too much. The experiment proved that using different lengths of roots is a more effective design in preventing groundwater pollution.