

What happens to soil in the winter?

By, Liz Schneider

I hear all the time about how winters around here aren't like they used to be, how we don't really get as much snow as we used to back in the good old days. Since, I wasn't around during the good old days, I don't notice as much of a difference. We recently had a pretty big snow storm that recovered all of the ground that had finally melted from the winter's buildup of snow, and it made me reflect on what's happening within the soil during the winter. Let's dig a little deeper and talk about a few winter facts.

As the winter temperature remains below 32 degrees F the top layer of the soil begins to freeze, because there are small pockets of water in-between the soil particles. Now, this may seem like an instantaneous occurrence for the soil to freeze, but it does take a little time for the frost layer to develop in a given soil. Generally, in this area it's the upper most layer of the soil, the actual depth of how far the frost layer has so many variables that can impact the depth of the frost layer.

So what happens to the soil microorganisms that live in the soil during the chilly months? It's probably pretty easy to think that they die, they hibernate or they just disappear, but all of these assumptions are incorrect. The microorganisms keep thriving and breaking down organic matter in the soil. Although they are active at slower rates compared to the summer months, they are still active and working to benefit the soil. They live in the pockets of water in between soil particles. Population sizes change with the availability, temperature, aeration and other soil factors. Bacteria are generally the most abundant microorganisms in the soil, bacteria favor the most organic rich portions of the soil, the top soil and the rhizosphere. The top soil is composed of crop residues and often times composted materials. The rhizosphere is the area around plant roots within the soil, the rhizosphere's size and chemistry is influenced by the plants growth, nutrient availability and respiration. Soil profile depth can also have an influence on the amount of water that is in the soil.

Next time you are looking out your window during the cold winter months and feel like everything around you is dead, remember that the soil is still alive and thriving with microorganisms.

Expertanswer. "Microorganisms in the ground don't slack off in winter." ScienceDaily. ScienceDaily, 20 November 2010. <www.sciencedaily.com/releases/2010/11/101116093827.htm>.