



# Soil Health Through the Winter

by Kris Hart

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Now that winter has set in, it's a great time to start preparing your garden space for future plants. As nature does, it's ideal to fertilize in the winter. Soil requires macro and

micro-nutrients. The three main macro-nutrients that our garden plants depend on are Nitrogen (N), Phosphorus (P), and Potassium (K). When you see a commercial fertilizer that says its nutrient base is 10-10-10 (NPK), that means that there is 10% (by weight) Nitrogen – 10% Phosphorus – 10% Potassium. The things we need to be mindful of in the winter are our soil's beneficial Rhizobacteria and Mycorrhiza fungi. Although most of our plants are dead through the winter, these other components are still alive. Our gardens won't do well without them, so we need to make sure they survive and thrive through the winter.

When planning our garden bed preparation, it's important to know how to, but also why. We know that adding a layer of organic matter topped with a layer of mulch is excellent for your soil health and garden plants, but why? This method works so well because it feeds your soil's Rhizobacteria as well. Your plants' root systems require macro-nutrients (NPK) and the bacteria require glucose to thrive. Coincidentally, Rhizobacteria break down the glucose into Nitrogen, Phosphorus, and Potassium, making these macro-nutrients bio-available for your garden plants. In return, your garden plants produce glucose that the soil bacteria need to survive. The Rhizobacteria also produces an enzyme that actually protects your plant's root system from pathogenic bacteria, keeping it safe from disease! Nature is awesome, isn't it?

Now let's not forget about Mycorrhiza. The Rhizobacteria do an excellent job of making available the macro-nutrients your plants need, but they don't move. They cannot reach much beyond the roots of your plants. This is where Mycorrhiza fungi comes into play. This fungus creates a network of thread-like growth spanning from within the plant out into the micropores of the soil where most water and nutrients are. This increases absorption out seven times farther than the plant's roots are able to reach. Just like the relationship with Rhizobacteria, the plant trades glucose for the reach and the absorption the Mycorrhiza provides.

Providing your garden beds with compost and mulch does so much for the life and vitality in your garden. I hope this encourages you to not only think about kitchen gardening, but also beauty gardening. I hope you get out there and get your hands dirty! Please feel free to share your experience and tips on my Instagram or Facebook page @BottomViewFarmIL.

Kris Hart lives in Litchfield and has a small hobby farm making strides towards sustainable living and organic/heirloom gardening. Contact her at kris.hart17@yahoo.com or find Bottom View Farm on Facebook and Instagram.

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