

Compost Magazine

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How Biochar Can Help Improve Compost Speed and Quality

Biochar is under-used in compost, but there's some promising research suggesting that it can help with everything from helping us to create faster, better compost to helping the environment. In this article, we'll take a science-backed look at how biochar can help speed up the composting process, and what the benefits and drawbacks of using biochar in compost are.

Using biochar to speed up and improve the composting process

Biochar can increase aeration in compost – possibly because it acts as a bulking agent to create free air spaces. This can help create an ideal environment for the microorganisms in compost to thrive, thus speeding up the composting process. In fact, one study by M. Sánchez-García et al found that adding 3% biochar can improve the speed of creating compost by 20%.

Using biochar in compost has other advantages too. In addition to speeding up the composting process, research by Nguyen et al has shown biochar can reduce odors released from compost and increase the speed at which your compost matures. Biochar can also reduce nutrient leaking from compost. The surface of biochar is negatively charged, which helps it retain potassium, calcium and magnesium.

Finally, biochar has also been shown to improve the final nutrient value of compost. One study argued that the main way it achieves this is by increasing the pH of the compost. This also had the additional benefit of reducing the availability of heavy metals.

How to use biochar in your compost

When using biochar in compost, it is important to ensure that it is added in the correct proportion.

Generally, 2-4% of the compost's weight should be made up of biochar. This will ensure that the compost doesn't become too acidic, which could have a detrimental effect on your compost.

Benefits of using biochar compost

Biochar compost can help to improve soil structure. This in turn helps to increase aeration and drainage, which can be essential for keeping your plants healthy. Another benefit of using biochar compost is increased nutrient retention. The porous nature of biochar helps to absorb and hold onto nutrients, making them available for your plants to use. This means that you can use less fertilizer, as your plants will be able to make better use of the nutrients already in the soil. Finally, biochar compost has been found to improve soil water retention. This is especially useful for gardens in dry or arid climates, as it helps to hold onto moisture for longer.

Potential drawbacks to using biochar compost

Biochar can increase the alkalinity of your soil. While that should be a positive for acidic soil, you should be careful about adding significant amounts of high-alkaline biochar or biochar compost to alkaline soils.

Not all biochar is alkaline, though, and an alternative is to use a biochar with neutral pH.

Wrapping up

In summary, there's increasing evidence that biochar can help improve both the composting process and the final quality of the compost.