

Full Circle Mushrooms

Fungal Soil Conditioner

We have put together this guide with just some of the research and references we have used. Read all the way through to find out the how, when, why, to know what's next and ways to share your experience.

Why is soil so important?

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change. The most recent report from the IPCC confirms the fact that one of the most effective ways to combat catastrophic changes to the Earth's climate is to regenerate and care for soil. Healthy soils and healthy plants have a positive effect on the heat and water dynamics of the climate.¹ By caring for your soil, you are helping to cool the planet! Supporting the organic matter in your soil can also improve water infiltration and crop yields, and reduce the need for chemical pesticides and herbicides.

What is a Fungal Soil Conditioner?

We are excited to offer a new product for all kinds of growers called Full Circle Mushrooms (FCM) Fungal Soil Conditioner that is produced from our mushroom growing medium. Our mushrooms grow on a substrate which is a mixture of woody materials that are high in carbon. After the mushroom harvest, this material is called Spent Mushroom Substrate (SMS). SMS is very high in live fungal mycelium (mycelium is analogous to the "roots" of the mushroom). We homogenize the material and hydrate it to encourage the mycelium to continue to decompose the wood along with native bacteria, fungi and critters. The resulting material is a moist, mulch-like product that is full of active organic matter.

What is the composition of FCM Fungal Soil Conditioner?

A lab analysis has determined that the Carbon to Nitrogen ratio of our Fungal Soil Conditioner is approximately 40:1, with 0.5% Nitrogen N, 0.21 % Phosphorus P205, and

¹ <https://www.ipcc.ch/> The Intergovernmental Panel on Climate Change.

0.83% Potassium K2O. We hydrate the material to approximately 60% humidity. The material contains a combination of fungal mycelium from our cultivated species such as: *Hericium erinaceus* (Lion's Mane), *Lentinula edodes* (Shiitake), *Pleurotus ostreatus* (Oyster). Through exposure to the air, the material also becomes a medium for a variety of other plant beneficial fungus and bacteria, such as the endophyte *Trichoderma*, which not only protects plant roots against pathogenic fungus but it also stimulates plant growth and nutrient uptake.²

How do I use FCM Fungal Soil Conditioner?

We recommend the following uses:

- 1) Soil Reclamation: application to compacted, degraded, sandy or otherwise poor soils to prepare the area for planting in a future season.
- 2) Soil Rejuvenation: apply to soil after harvest where beds or fields are resting to cover the soil and retain organic matter.
- 3) Mulch: Use a mulch for established plants where the soil lacks organic matter.
- 4) Fertilizer: Incorporation into first 2-3 inches of topsoil at 5-20% .

Why should I use FCM Fungal Soil Conditioner?

Depending on the type of application, FSC can help:

- Increase organic matter.
- Improve water holding capacity.
- Improve soil texture

What results should I expect?

At Full Circle Mushrooms, we are passionate about supporting growers as we learn to apply soil health principles established by the New Mexico Healthy Soil Working Group. ³ Through our research we are confident that Full Circle Mushrooms Fungal Soil Conditioner has the potential to increase organic matter in the soil, increase biodiversity in the soil, and encourage the establishment of cover crops. Fungal Soil Conditioner can be a great way to cover your soil!

Mycoremediation of soils is very quickly developing more focus in scientific research. We are performing ongoing trials with our product to learn more about the best ways to use it and exactly how seeds and plants respond to soils amended

² <https://www.frontiersin.org/articles/10.3389/fpls.2020.573670/full> An Endophytic *Trichoderma* Strain Promotes Growth of Its Hosts and Defends Against Pathogen Attack

³ <https://www.nmhealthysoil.org/category/soil-health-principles/>

with Fungal Soil Conditioner. We are excited to share this information with you as we gather it. Unfortunately, we cannot guarantee any specific results in terms of yields or plant behavior.

We hope that you will partner with us to help care for the soils in the region, and will share your experiences and results with us! please reach out to:

compostfairy@fullcirclemushrooms.com for questions, suggestions and to share your results. Social media is also a great way to share pictures, videos and progress.

Find us as fullcircle.mushrooms on instagram and Full Circle Mushrooms on Facebook.

What's on our pipeline?

Coming soon....

Premium mushroom compost- Greatly balanced, nitrogen rich compost . We partner with local growers and businesses to intercept nitrogen rich additives from the waste stream in our community such as pea shoots, coffee grounds, food scraps, etc.

Green mulch-At Full Circle Mushrooms, we strive for excellence but we know perfection is a myth. Occasionally, we have a batch of mushrooms that doesn't grow as expected. Sometimes a fungal species called Trichoderma takes up shop before our intended mushroom species can grow out their mycelium. While this substrate is no longer suitable to grow our culinary species, it is highly suitable as a garden mulch. Trichoderma has been shown to improve plant growth, root health, and can be used as a weed suppressant top dressing for beds and houseplants