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IBI is a non-profit organization supporting researchers, commercial entities, policy makers, farmers & gardeners, development agents and others committed to sustainable biochar production and use. [Find Out More](#)

Help put the Earth **Back in the Black**

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WHAT IS BIOCHAR?

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Biochar Is a Valuable Soil Amendment

Biochar is a solid material obtained from the carbonisation of biomass. Biochar may be added to soils with the intention to improve soil functions and to reduce emissions from biomass that would otherwise naturally degrade to greenhouse gases. Biochar also has appreciable carbon sequestration value. These properties are measurable and verifiable in a characterisation scheme, or in a carbon emission offset protocol.

This 2,000 year-old practice converts agricultural waste into a soil enhancer that can hold carbon, boost food security and discourage deforestation. The process creates a fine-grained, highly porous charcoal that helps soils retain nutrients and water.

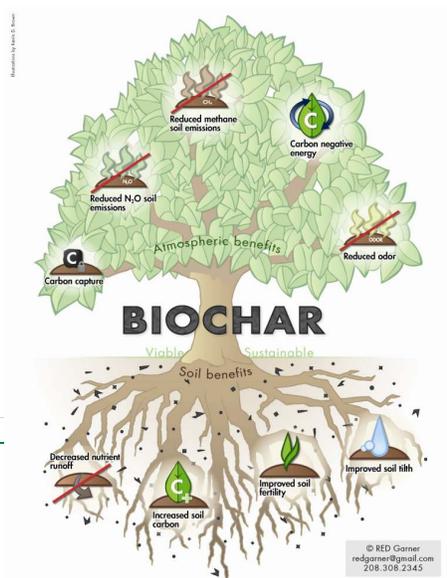
Biochar is found in soils around the world as a result of vegetation fires and historic soil management practices. Intensive study of biochar-rich dark earths in the Amazon (terra preta), has led to a wider appreciation of biochar's unique properties as a soil enhancer.

Biochar can be an important tool to increase food security and cropland diversity in areas with severely depleted soils, scarce organic resources, and inadequate water and chemical fertilizer supplies.

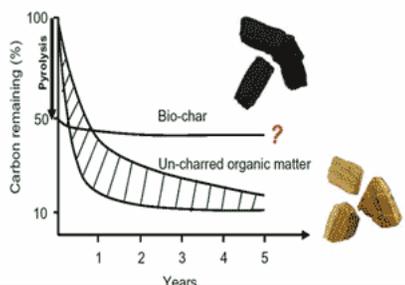
Biochar also improves water quality and quantity by increasing soil retention of nutrients and agrochemicals for plant and crop utilization. More nutrients stay in the soil instead of leaching into groundwater and causing pollution.

Biochar is a Powerfully Simple Tool to Combat Climate Change

The carbon in biochar resists degradation and can hold carbon in soils for hundreds to thousands of years. Biochar is produced through pyrolysis or gasification — processes that heat biomass in the absence (or under reduction) of oxygen.



The essential stability of bio-char



Lehmann et al., 2006, *Mitigation and Adaptation Strategies for Global Change* 11, 403-427



In addition to creating a soil enhancer, sustainable biochar practices can produce oil and gas byproducts that can be used as fuel, providing clean, renewable energy. When the biochar is buried in the ground as a soil enhancer, the system can become "carbon negative."

Biochar and bioenergy co-production can help combat global climate change by displacing fossil fuel use and by sequestering carbon in stable soil carbon pools. It may also reduce emissions of nitrous oxide.

We can use this simple, yet powerful, technology to store 2.2 gigatons of carbon annually by 2050. It's one of the few technologies that is relatively inexpensive, widely applicable, and quickly scalable. We really can't afford not to pursue it.