



What is Biochar & Why It Works

What is Biochar?

- A carbon-rich material made from biomass via pyrolysis.
- Looks like charcoal, acts like a soil superhero.

1 ton of biochar = up to 3 tons of CO₂ removed from the atmosphere



Top 3 Benefits

Soil Health

Charged biochar—biochar that's been pre-loaded with nutrients or microbial life—acts like a sponge and a shelter for soil ecosystems.

- Improves nutrient retention: Holds onto fertilizers and minerals, reducing leaching and making nutrients more available to plants.
- Boosts microbial activity: Provides habitat for beneficial microbes that enhance soil fertility and plant resilience.
- Enhances water retention: Increases the soil's ability to hold moisture, especially in sandy or degraded soils.
- Balances pH and reduces toxins: Helps buffer acidic soils and adsorb harmful compounds.

Biochar creates a stable habitat for beneficial microbes, enhancing soil fertility over time. It increases water retention, helping soil stay moist longer, especially valuable in drought-prone regions.

Carbon Removal

Biochar sequesters carbon by locking it into a stable form that resists decomposition

- Locks carbon in solid form: Converts biomass into stable carbon through pyrolysis, preventing it from decomposing and releasing CO₂.
- Long-term storage: Remains in soil for hundreds to thousands of years, acting as a durable carbon sink.
- Reduces atmospheric CO₂: Removes carbon from the natural cycle and stores it underground, helping mitigate climate change.
- Supports carbon credit markets: Verified biochar applications can generate tradable carbon removal credits.

Biomass converted into biochar contains carbon that is chemically stable and can remain in soil for hundreds to thousands of years—effectively removing CO₂ from the atmosphere and storing it in the ground.

Wildfire Prevention

Biochar is a proactive land management tool that turns risk into resilience.

- Removes excess biomass: Converts flammable forest residues, crop waste, and brush into stable biochar, reducing fuel loads that feed wildfires.
- Creates defensible space: Mobile biochar units can be deployed in fire-prone areas to clear vegetation and create firebreaks.
- Supports land management: Offers a productive alternative to open burning or pile-and-decay methods, which can spark uncontrolled fires.
- Improves soil post-fire: Biochar can be applied to scorched land to restore soil health and reduce erosion after wildfires.

Traditional slash pile burning can spark uncontrolled fires and release pollutants. On-site biochar production offer safer, low-emission alternatives that also produce a valuable soil amendment

Want to learn how biochar can boost your farm or business? Let's talk