

What is biochar?

Biochar is a stable form of carbon made by heating organic materials in a low-oxygen environment.

How is it made?



Biomass

Biogenic material that is produced by living organisms.



Pyrolysis/ Gasification

Processes that convert the biomass into stable carbon.



Biochar

The carbon in the biomass, which was absorbed from the atmosphere during the life of the living organism, gets locked into the biochar.

Uses for biochar



Agriculture

It can be applied on soil surface or tilled in to root zone, annual or perennial crops, rangelands, etc.



Water filtration

It absorbs contaminants and improves water quality.



Construction

It is commonly used in cement and asphalt, as well as for insulation and humidity control in buildings.



Industrial uses

It is versatile, functioning as an additive in the production of plastics, paper, and textiles, and as a substitute for coke in the steel industry.

Benefits of biochar

Economics

1 Enhancement of soil health

Biochar improves long-term soil health and productivity, which can raise the overall value of agricultural and forestry land.

2 Decrease in input cost

Because biochar improves nutrient retention and reduces nutrient losses, production systems that incorporate biochar often require less synthetic fertilizer and can lower overall input costs.

3 Increase in crop yield

Better soil structure, moisture retention, and nutrient availability can lead to measurable yield gains across multiple crop types.

4 Soil amendment program

In the US, producers can receive financial support through NRCS Code 336 (EQUIP, USDA), which reimburses biochar application as a conservation practice.

In agriculture

- Improves soil structure and water retention
- Enhances nutrient availability and fertilizer efficiency
- Reduces soil acidity and greenhouse gas emissions
- Supports healthier root development and higher productivity
- Reduces wildfire risk by removing excess biomass
- Creates new revenue streams from carbon removal credits

In construction

- Enhances material strength
- Improves thermal and acoustic insulation
- Supports insulation and humidity control
- Reduces cement use and embodied carbon
- Enables carbon-negative building materials
- Lightens materials while maintaining performance
- Improves moisture regulation and durability