

Biochar, a Sustainable Triple Winner

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The Amazonian Indian tribes discovered thousands of years ago the soil improving characteristics of charcoal. They created the Terra Preta Indian black earths by charcoal additions to soil. These Terra Preta soils possess thousands of years later still their fertility and water holding capacity and hence their high cropping yields. Modern thermal biorefineries produce bio-oils, syngas and char. These chars can be applied as organic soil improver like the Amazonian Indians have done thousands of years ago.

Organic industrial, urban and agricultural residues can be used as raw material for a Carbon Capture and Storage (CCS) strategy based upon thermal conversion of biomass. Carbon in organic material can be carbonized by thermal conversion technologies like torrefaction or pyrolysis. The carbon is transformed by thermal conversion from biological degradable material into biological inert material and consequently can be stored permanently.

Biochar improves soil stability, soil quality, soil fertility and increases water holding capacity. Biochar also increases soil biodiversity and hence increases soil resilience to soil borne diseases. Biochar has positive agronomic effects and increases in a sustainable way crop yields. Biochar remains stable in soils for centuries.

Biochar creates a triple win scenario for simultaneously producing bioenergy, permanently sequestering carbon, while increasing crop yields by improving soil and water quality.