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Biochar production is inspired after a process that begun thousands of years ago in the Amazon Basin, where islands of rich, fertile soils called terra preta (“black earth”) were utilised by indigenous people.

Whether they were man-made (incomplete combustion of wood) or nature made (volcanoes) is still unknown, but the truth is that nowadays these soils continue to “hold” carbon and remain so nutrient rich that they are sold as potting soil in Brazilian markets.

What do we mean with biochar?

Biochar can be defined as a **form of charcoal** that is produced by exposing organic waste matter (e.g. wood chips, crop residue or manure) to heat in a low-oxygen environment and that is used as a **soil amendment**. Literature has shown that biochar amendment significantly **enhances the nutrient** availability and nutrient retention of a wide range of soils.

The **soil fertility amelioration** is achieved through improving soil *physical, chemical, and biological properties*. The capacity of biochar to provide or **enhance soil available nutrients**, however, is determined by the feedstock and production conditions of the biochar. Biochar’s produced from nutrient-rich feedstocks contain comparatively higher readily available nutrients.

In general, biochar amendment **improves soil fertility**, yet the effect is more apparent for poor (e.g., acidic, highly leached) soils than for originally fertile soils. The impacts of biochar amendment on crop growth are largely positive, with mixed results dependent on application rate, soil type, and crop species.

Effect and use of biochar amendment.

In terms of its use, one of the key characteristics of biochar is its capacity for increasing the amount of water held in the soil. The porous structure gives it that capacity. This structure also provides a perfect substrate for bacterial and fungal growth essential for **healthy soil**.

Soluble soil nutrients and minerals dissolved in the water are also held in the soil longer. Leaching from the soil is decreased. Also plant root hairs can penetrate the biochar structure and **absorb nutrients more efficiently**. Biochar also **decreases acidity**.

Biochar in conjunction with good land management, help produce a soil that is sustainable and productive.

It is very important that biochar is prepared properly before application. This is done by adding the dry biochar to a mixture of water and nutrients, then soaking it for a suitable period. This is referred to as '*charging*'.

The addition of **charged biochar** at suitable application rates (e.g. applying 5 and 20 tons per hectare equivalent) rapidly increases soil fertility. *Soil flora* and hence *fauna* will thrive over time and establish a **healthy productive stabilized soil**.

Another advantage of **adding carbon/biochar** to the soil is to reduce atmospheric carbon and reduce greenhouse gases, helping to **attenuate climate change**.

Biochar is an intelligent way of making use of your crop residues (straws, husks etc.) to recycle the matter while increasing the farm productivity, which actually the aim of **[sustainable and organic farming](#)**.