

Introducing Bamboo Biochar Organic Fertiliser

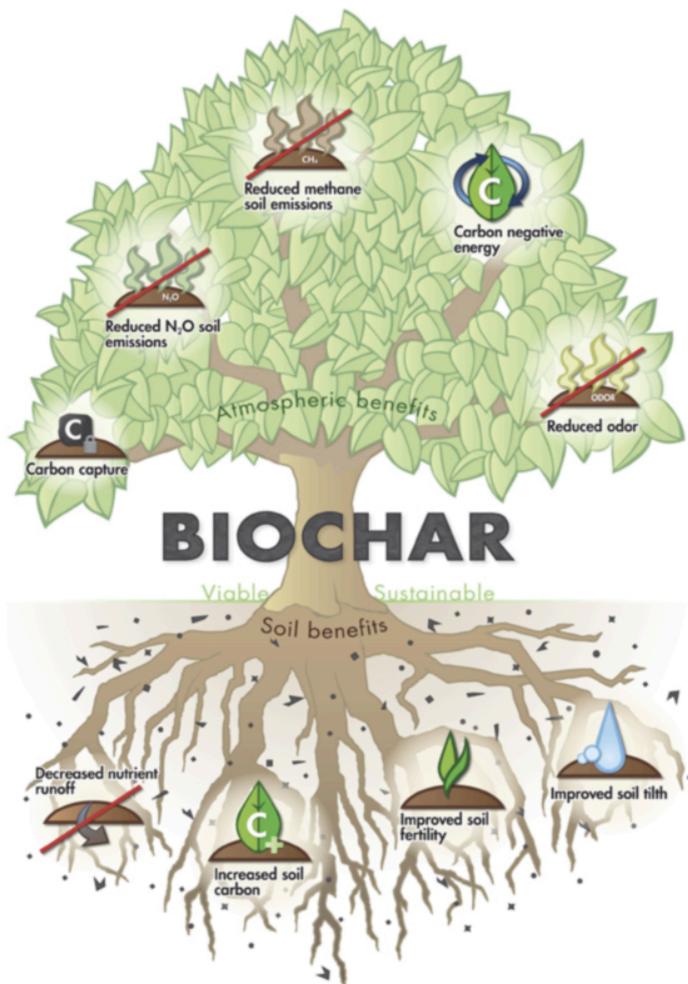


The ultimate objective of Bamboo Biochar Organic Fertilisers is to contribute to sustainable regenerative agriculture by increasing the long term fertility of soils and their capacity for growing nutritious healthy food. We believe that food growing systems should meet the needs of the present without harming future generations, with this objective in mind we form strategic alliances with small holder farmers, cooperatives, commercial growers, businesses, NGOs and governments to promote the distribution of Biochar Organic Fertiliser, thus focusing on the long term improvement of soil health, plant health and human health.

Benefits of Bamboo Biochar:

1. Easy to use
2. Improves soil structure
3. Enhances soil nutrient retention
4. Increases plant nutrient uptake
5. Increases microbial activity in the soil
6. Maximises plant performance
7. Absorbs & conserves water
8. Organic, sustainable and regenerative
9. Long lasting
10. Increase cation exchange in your soil

Appearance:



Correct soil acidity:

Due to continuous use of chemical fertilisers most soils turn acidic, some even below pH 4.

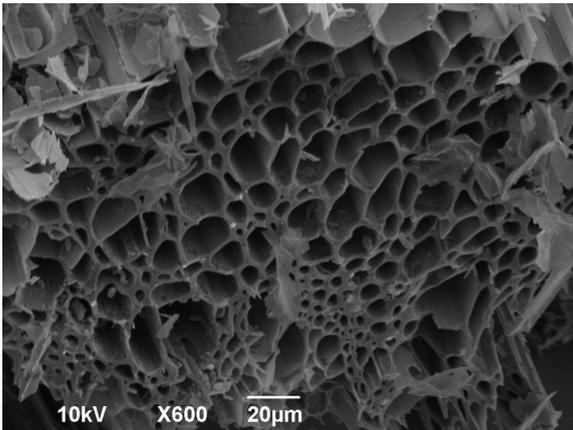
High acidity levels impair the assimilation of nutrients by the crops leading to poor growth and development.

Farmers therefore find themselves spending more money to buy more chemical fertilisers in order to try and achieve better results.

SEEK Biochar organic fertiliser helps correct acidity in soils and adds organic matter resulting in efficient assimilation and uptake of nutrients into the plant, which can dramatically increase yields from the first application.

Important Characteristics of Bamboo Biochar Organic Fertiliser:

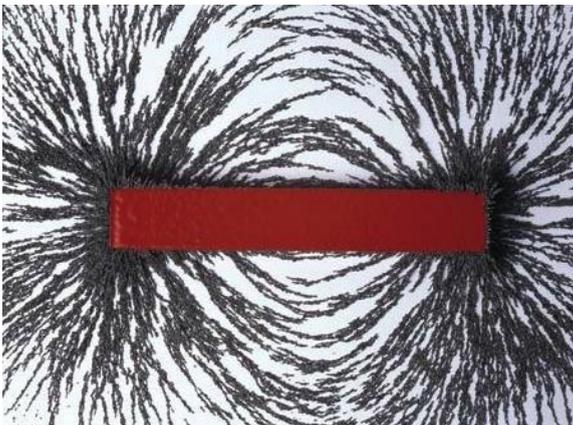
Big surface area



Perfect home for beneficial microbes



Magnet to attract nutrients



Sponge to absorb water



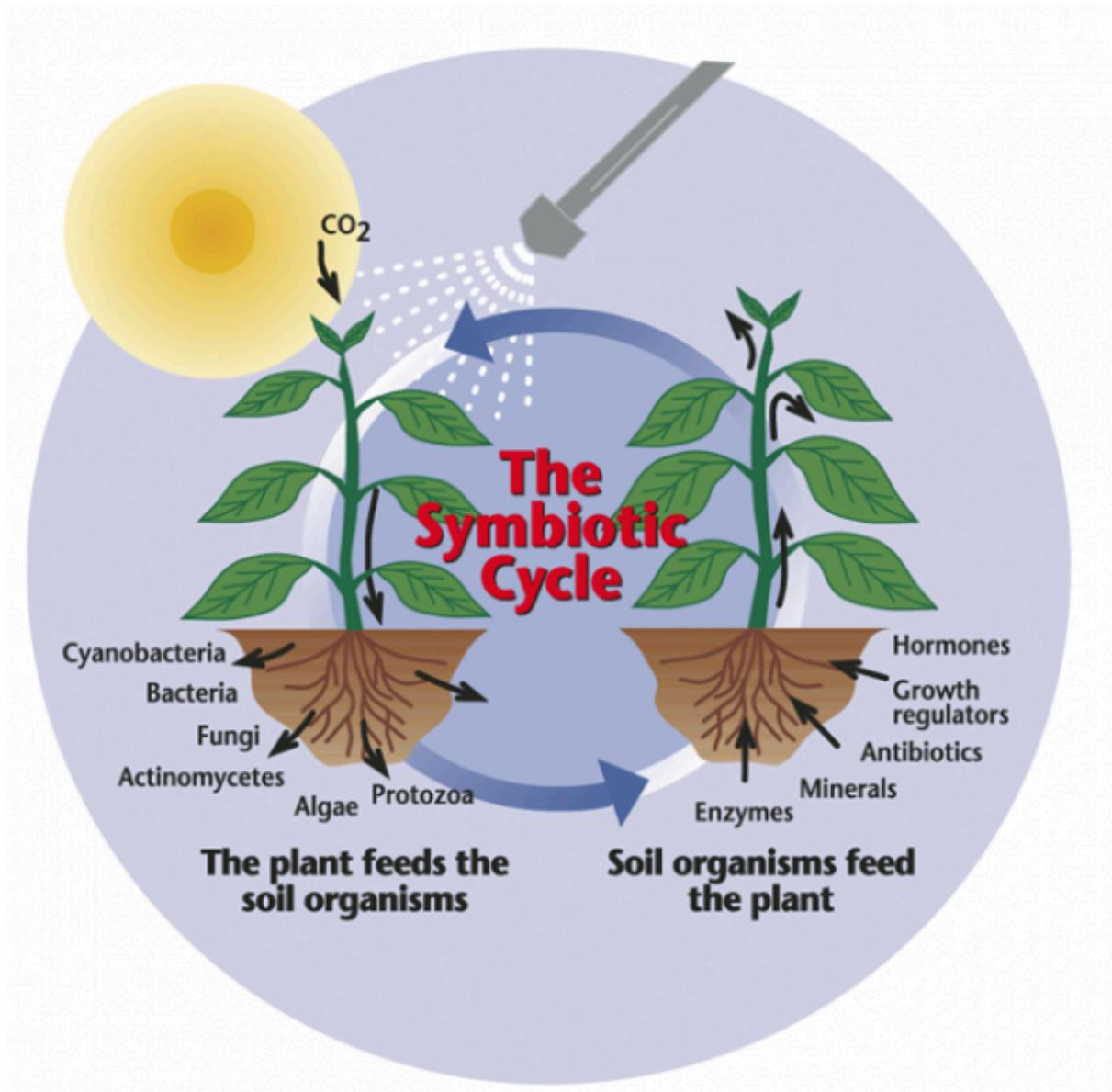
Bamboo Biochar improves The Symbiotic Cycle, thus helping coffee and cocoa plants thrive:

All plants that grow in soils develop an intimate relationship between the roots and the organisms that populate the root zone. The billions of bacteria, fungi, algae, cyanobacteria, protozoa, and other organisms that grow along the root surfaces—the rhizosphere—are much more plentiful than in the bulk of the soil. This is because roots feed the organisms with dead root epidermal cells as well as compounds exuded from the roots themselves. The plant may inject up to 25% or more of its energy, fixed in the leaves as carbohydrates, amino acids, and other compounds, into the root zone to feed these organisms, for a very good purpose.

The microorganisms which feed on these exuded carbon compounds along the root surfaces benefit the plant in many ways, a beautiful symbiotic relationship.

The plant feeds the bacteria, fungi, algae, and other microbial species in the rhizosphere, which in turn secrete enzymes, organic acids, antibiotics, growth regulators, hormones, and other substrates which are absorbed by the roots and transported to the leaves. The acids help dissolve essential minerals, and reduced iron releases anionic elements.

By improving the environment around the plants' roots, Bamboo Biochar Organic Fertiliser can dramatically improve The Symbiotic Cycle, which can promote plant health and yield in profound ways.



This product is certified organic under European, North American and Japanese organic standards. It is used in both organic and inorganic (conventional) growing. Inorganic growers use Bamboo Biochar to increase yields as well as for the additional benefit of reducing chemical fertiliser and pesticide costs.

Benefits of biochar:

- increase soil carbon content
- increase soil fertility (especially in acidic soils)
- increase yield and productivity (especially in poor soil)
- reduce nutrient runoff - improve nutrient content and availability of soil
- improve water retention in soil
- improve disease resistance (especially protect against soil borne diseases)

Evidence of soil and crop benefits

The efficacy of our Bamboo Biochar technology has been demonstrated through hundreds of experiments and R&D trials, across 6 continents, over 10 years. The benefits of the biochar-based technology has been demonstrated both internally and with external independent third-party researchers and universities.

Rather than making claims with limited evidence, we are bringing our products to market by following the traditional, proven path used successfully by other successful agricultural products, namely:

1. Deep internal scientific trials to refine and advance technology and understanding of mechanisms
2. University and private research trials to prove efficacy
3. Distribution and grower trials/demos to demonstrate value
4. Partnerships developed with Industry Distribution and Technology Partners with wide-ranging capabilities

Below are some photos from a few of these trials, however the best way to get to know it's efficacy is to test it yourself.

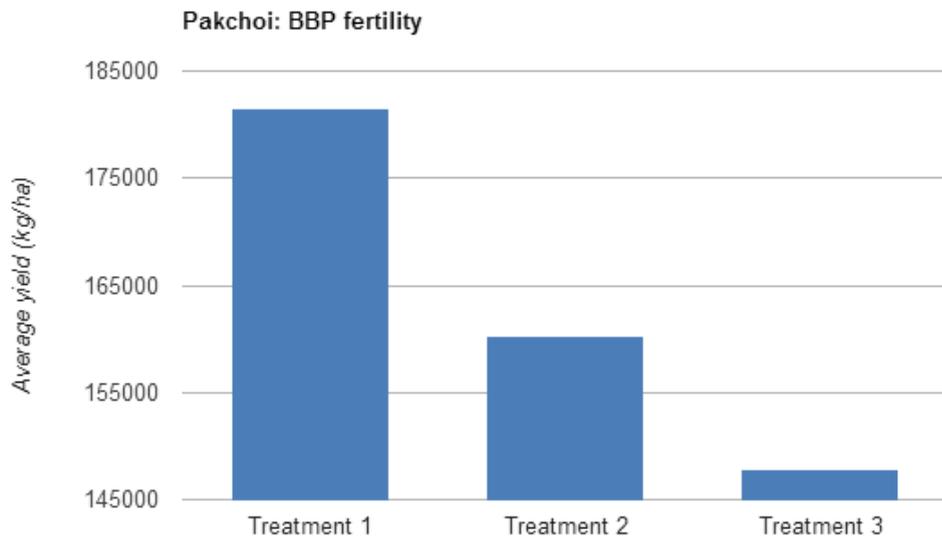
Pepper:

Increase size of plant, increased leaf size, improve disease resistance, increased yield.



Lettuce / pakchoi

Increases yield, increases size of each plant, less disease (prevents root nematodes).



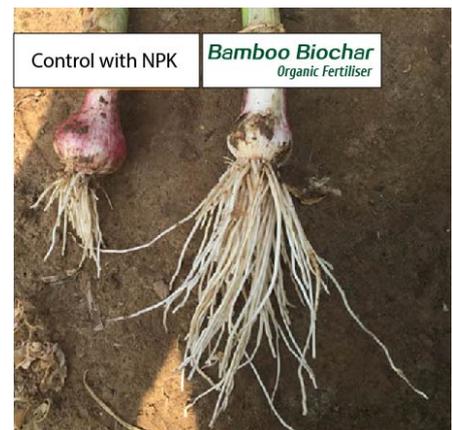
Treatment 1 - NPK (15-15-15) (90kg/hectare) + BBP Fertility (2250kg/hectare)

Treatment 2 - NPK (15-15-15) (300kg/hectare)

Treatment 3 - Control (no fertiliser)

Garlic

- increases root growth
- more resilient crops
- less susceptible to disease
- more drought resistant



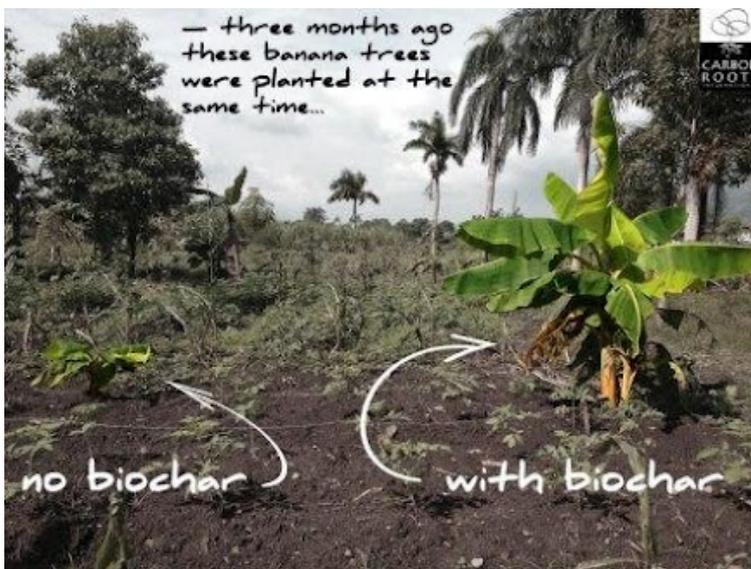
Potato



Increase plant size and vitality of leaves, early sprouting of leaves, improve disease resistance (especially fungi), and increases yield.

Biochar is great for crops like potatoes that grow underground.

Banana



Biochar applied to banana plants at the time of planting can increase yields by 40% by increasing disease resistance, increasing water holding capacity of the soil, making nutrients available to the plant, and improving the microbial ecosystem in the soil.

Application rate and technique for maize, wheat, sesame seeds and other field crops:

Prior to sowing, all fields are ploughed and harrowed to a fine tilth. The Biochar Organic Fertiliser is surface applied by hand or tractor before seed sowing and immediately incorporated into the soil to a depth of 0-15 cm.



The recommended application rate is 6000kg/hectare. This is expected to show an increasing benefit for the first three years after its application and will remain beneficial in the soil for centuries (75% of the carbon content in the biochar will still be present in the soil after 1,000 years!).

Biochar additions while growing sesame seeds have been shown to significantly improve the soil properties of:

- % soil moisture content
- bulk density and soil structure
- % porosity
- % soil water-filled pore space
- total N, K, Mg and CEC
- Increased pH
- Increased seed weight
- Increased yield compared to the control by around 30%

Biochar used as a soil amendment, can boost soil fertility and improve soil quality by reducing soil acidity, increasing moisture holding capacity, attracting more beneficial fungi and microbes, improving cation exchange capacity (CEC), and retaining nutrients in soil. It is also reported that biochar enhances the water retention capacity of soils, thus improving dry or sandy soils and reducing irrigation requirements. In clay soils biochar can reduce soil compaction and increase aeration.

Biochar application for field crops and for large scale soil regeneration:



Coffee, tea, avocado, mango, banana, cacao, citrus:

Biochar Organic Fertiliser addition to plantations demonstrates the following benefits:

- increases the number of new leaves
- increases plant growth (stem and leaf biomass)
- increases the rate of photosynthesis
- increases plant root biomass
- increases soil nutrient contents and fertility
- improves soil enzyme activity
- improves the soil microbial community diversity, richness and biomass
- contributes to an early harvest
- increases soil pH in overly acidic soils
- produces full flavour fruits, seeds and nuts

Application rates for tea, banana, avocado, mango, citrus, cacao and coffee:

When planting a new tea, avocado, banana, mango, coffee or cocoa plantation, you will require a minimum of 100/120kg per acre. The minimum amount of bamboo biochar that is needed per plant is 0.25kg, however we recommend 1kg per plant.

Techniques for using Bamboo Biochar with plants like Tea, Banana, Avocado, Mango and Coffee



When planting a new plantation or transplanting seedlings to the field, use between 0.25kg-1kg of Bamboo Biochar in the hole (depending on the size of your plants). Place the roots of your plant directly onto the biochar and cover with soil. You can also mix the biochar with compost for additional benefit. A symbiotic relationship will develop between beneficial bacteria and fungi in the biochar and the roots of your plant. This leads to dramatically increased planting success rates, reduction in disease, drought resistance and increased yields. One time application leads to long term benefits. It is like an insurance policy for your plants, protecting it against disease and increasing yield.

If your plantation is already established, you can use the 'ring' technique to add the Biochar. This ensures that the Biochar incorporates into the soil where the root tips of the plant are growing, for maximum effect.



Bamboo Biochar works by improving the biological, chemical and physical properties of your soil, thus unlocking its full potential and benefiting your plants in multiple ways.



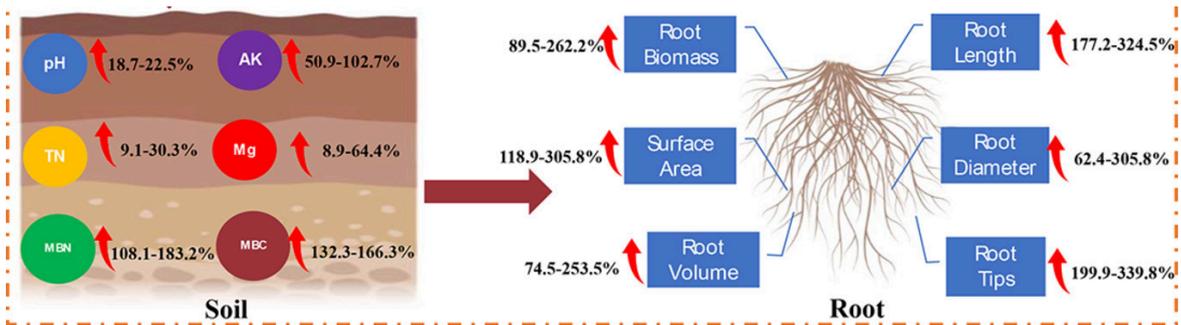
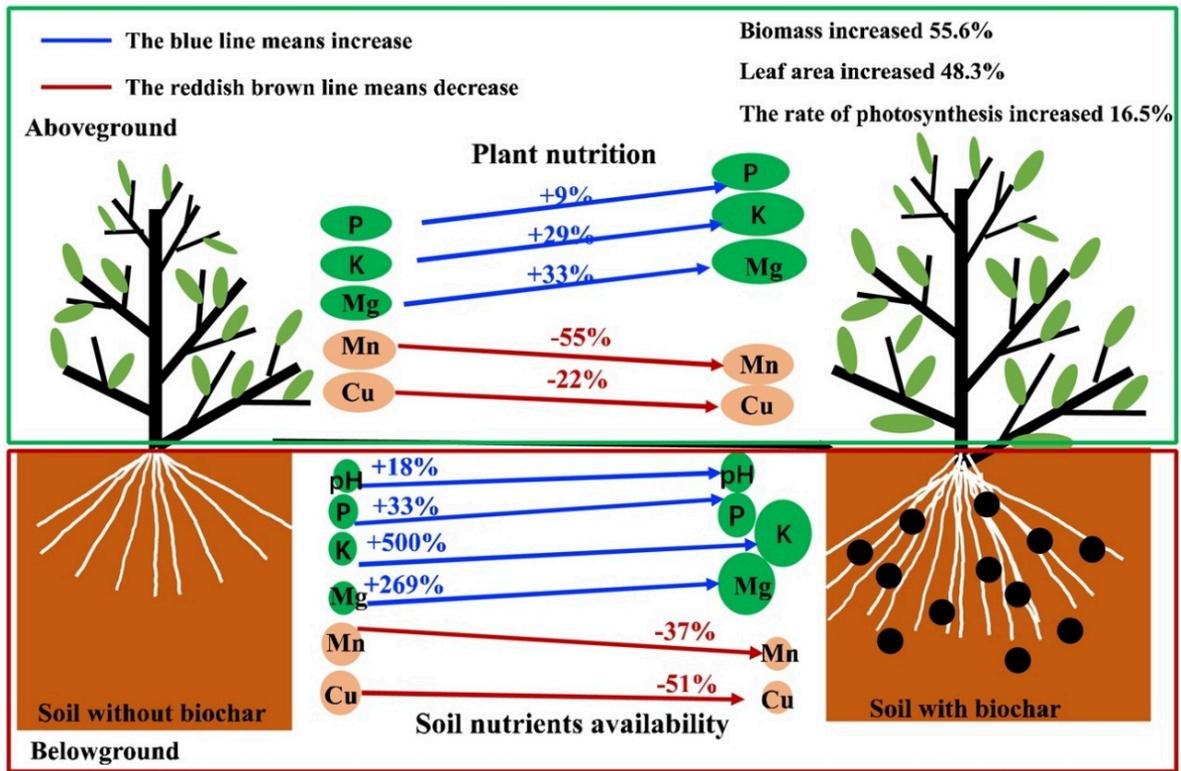
Bamboo Biochar is a durable, porous, organic material designed and engineered to improve soil quality by having a good ionic exchange capacity, increasing water and nutrient retention, and providing a positive environment for microbial growth.

Tea

Application of Biochar to a mature tea plantation using the 'trench' technique:



Biochar stimulates tea growth by improving the nutrients in acidic soil



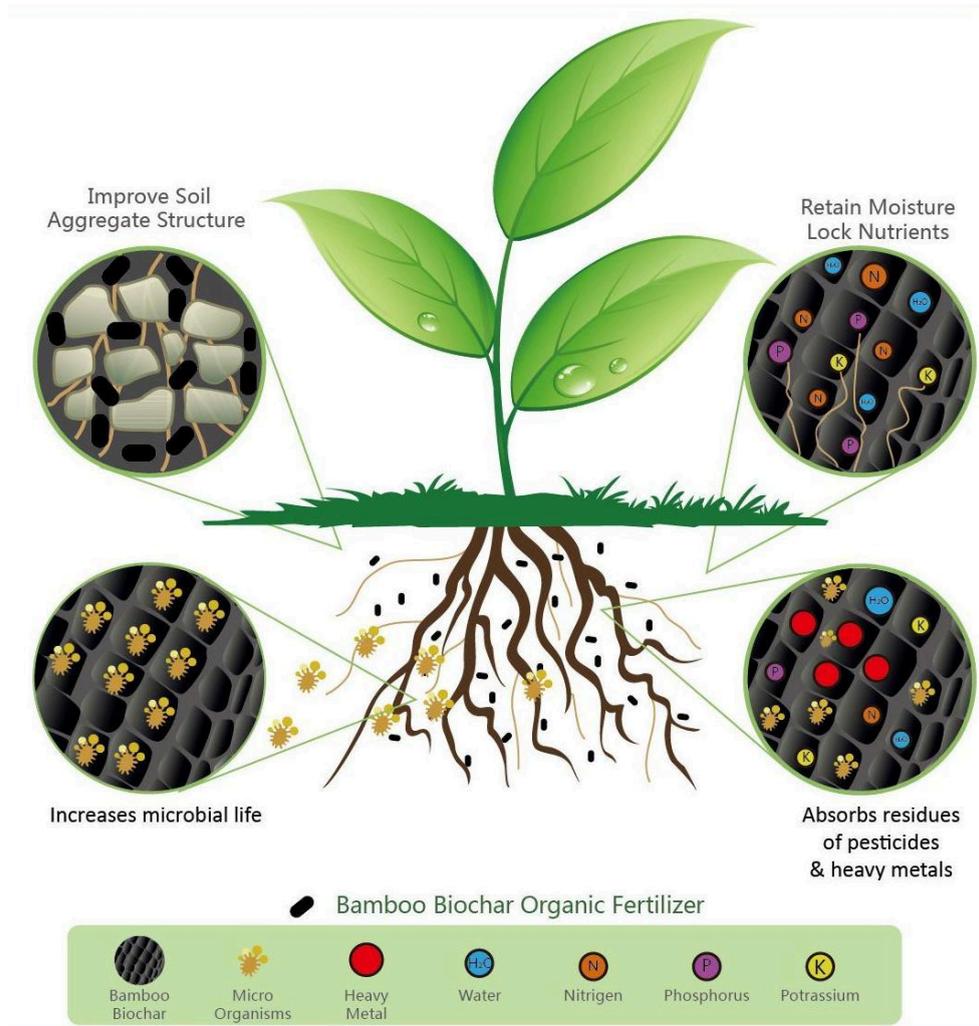
Biochar is used in nurseries (10% biochar to 90% soil) to give seedlings the best possible start and increase the % of successful transplants to the field:



Benefits of biochar: increase soil carbon content, increase soil fertility in acidic soils, increase yield and productivity – especially in poor soil, reduce nutrient runoff, improve water retention in soil, while also protecting against soil borne diseases.



Here is a diagram showing how the Biochar Organic Fertiliser will benefit your plants:



Thank you for your interest in this new product that is pioneering regenerative organic agriculture around the world. We look forward to collaborating with you in this worthwhile endeavour.

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