

BIOCHAR A BIT OF MYTH BUSTING



In Association with SVCH-Technologii, Moscow (Russia)
ISO 9001:2015 | ISO 14001:2015 | ISO 45001:2018

ABOUT US

KERONE is now renowned for serving the specialized needs of customers with the best quality and economical process of Heating /cooling and drying products, manufactured in a high-quality environment by a trained and qualified workforce (special purpose machinery)

-  48+ Years Manufacturing Excellence
-  Great Sale Support
-  Highly Customized Product
-  Adherence to Standards
-  Sound Infrastructure
-  Team of experts Delivering Quality
-  Timely Delivery
-  Cost Effective Solutions



KERONE is a pioneer in application and implementation engineering with its vast experience and team of professionals.



KERONE is devoteded to serve the industry to optimize its operations both economically and environmentally with its specialized heating and drying solutions.



KERONE is having immense expertise in manufacturing and implementing various types of engineering solutions.



KERONE is possessing employee strength of more than 280+ experts continuously putting efforts for happy industrial engineering solutions.

WHY CHOOSE US

With decades of expertise, cutting-edge technology, and a customer-centric approach, Kerone Engineering offers tailor-made heating solutions that prioritize quality, flexibility, and cost-effectiveness. Benefit from our commitment to excellence, post-sales support, and innovative solutions for your unique heating needs. Choose Kerone Engineering for reliability, performance, and unmatched value.

MISSION

- ✓ To enhance the value of customer operation through our customer need centric engineering solution
- ✓ We are committed to provide our customers, unique and best in class products in Industrial heating drying and cooling segment with strategic tie-up for the technical know-how with renowned leader in the industry specific segment

VISION

- ✓ Turn into a world leader in providing specialized, top-notch quality and ecological industrial heating, cooling, and drying solutions across the globe.
- ✓ To attain global recognition as the best of quality and environment-friendly engineering solution company.

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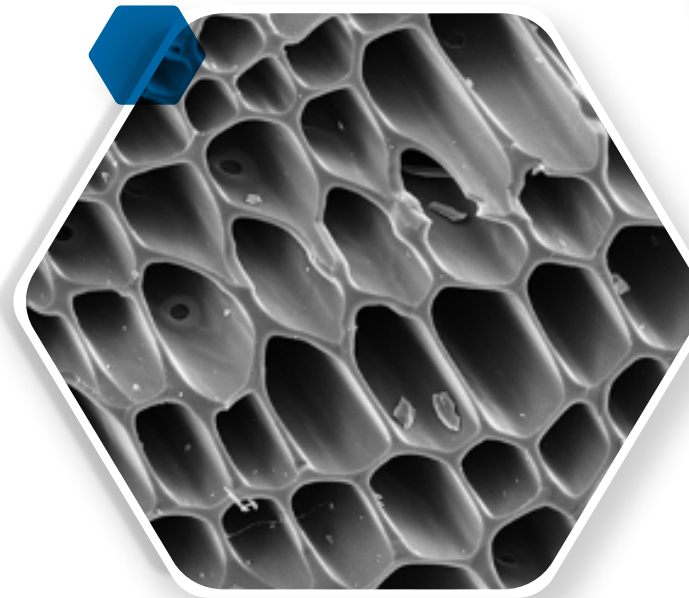
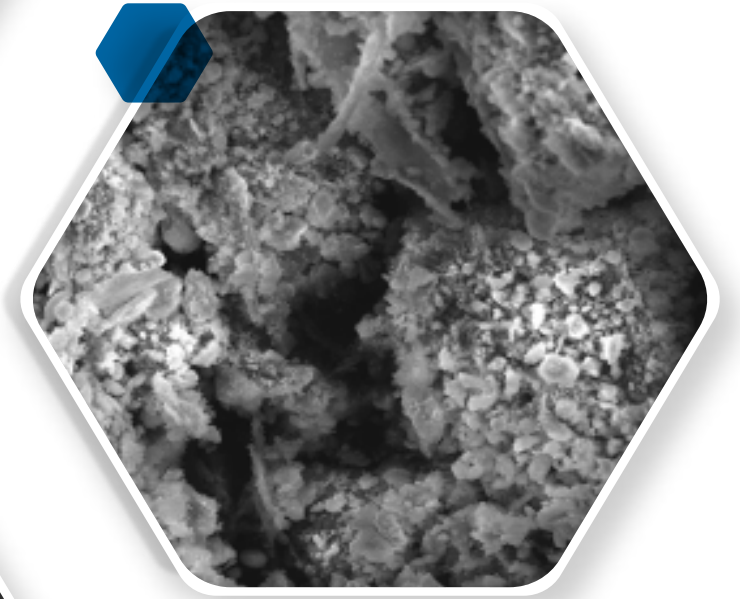
Enhance the value of customer operation through our customer need centric engineering solution.

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What is Biochar and how is it made?

Biochar is a type of charcoal made from organic materials like wood chips or agricultural waste through a process called pyrolysis, which involves heating biomass in the absence of oxygen. It's used to improve soil fertility, water retention, and carbon sequestration, and has applications in environmental remediation and renewable energy.





Biochar and Terra Preta

Biochar is a form of charcoal produced through pyrolysis of organic materials. Terra Preta, meaning "black earth" in Portuguese, refers to highly fertile soils enriched with biochar, organic matter, and nutrients. These soils, found in the Amazon rainforest, demonstrate the long-term benefits of biochar in enhancing soil fertility and carbon storage. Utilizing biochar and emulating Terra Preta practices can improve soil quality, agricultural productivity, and carbon sequestration worldwide.

Pyrolysis is an engineering term

“energy and Biochar can be produced”

You're correct. Pyrolysis is indeed an engineering term referring to the thermal decomposition of organic materials in the absence of oxygen. It's a process widely used to produce biochar, along with other valuable products such as biofuels and syngas, with various applications in waste management, energy production, and environmental remediation.



Why pyrolyse biomass

- Biosecurity
- Odour
- Concentration of C and nutrients
- Transport costs
- Beneficial agricultural reuse
- Renewable energy

Overall, biomass pyrolysis offers a versatile and sustainable approach for converting renewable biomass resources into valuable products, contributing to resource conservation, environmental protection, and sustainable development.



Biochar is carbon that is going to last for hundreds of years

Biomass Carbon
100%

Energy
Production

100 Year

Biomass Carbon
100%

Bio-char Carbon
50%

Biomass Carbon
0%

Bio-char Carbon
>40%



Agronomic trials

Over 350 plots being managed as part of the Richmond Landcare collaborative project

Key soil constraints on ferrosols

- Declining C
- Low pH
- Low CEC
- Immobilisation of P
- High Al saturation

Addressing these soil constraints on Ferrosols may require targeted soil management practices, including soil amendment with lime or organic matter to improve pH and fertility, implementation of drainage systems to mitigate waterlogging, adoption of conservation tillage techniques to reduce erosion, and selection of appropriate crop species and varieties adapted to the specific soil conditions. Additionally, soil testing and monitoring are essential for assessing soil fertility and identifying nutrient deficiencies or imbalances.



Biochar “can” significantly improve soil fertility and crop production



Long-term field sites testing Biochar



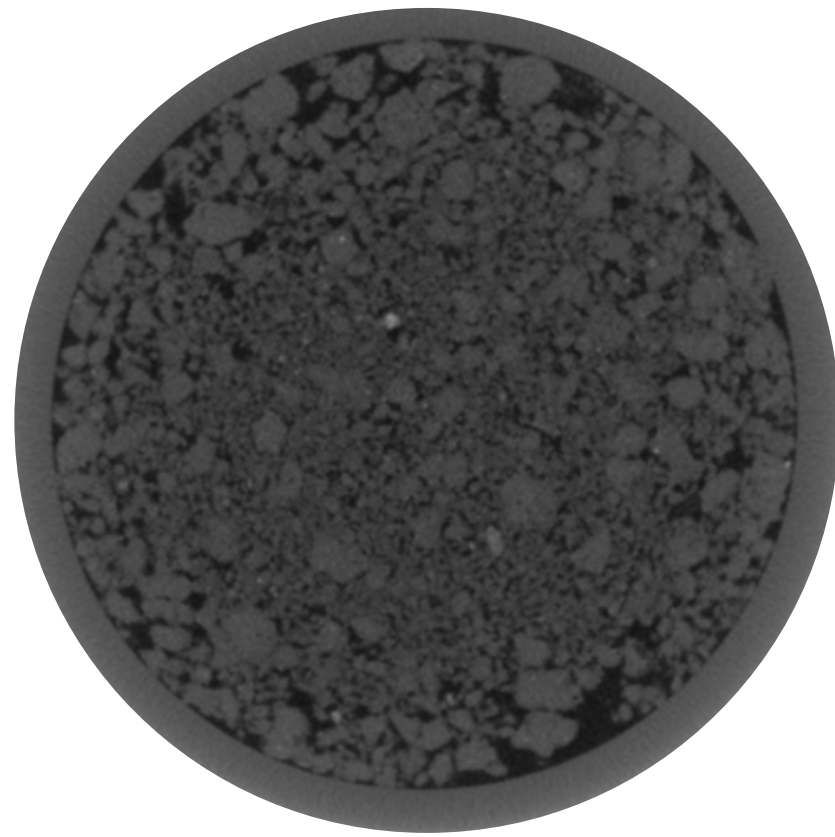
Trials in a macadamia orchard



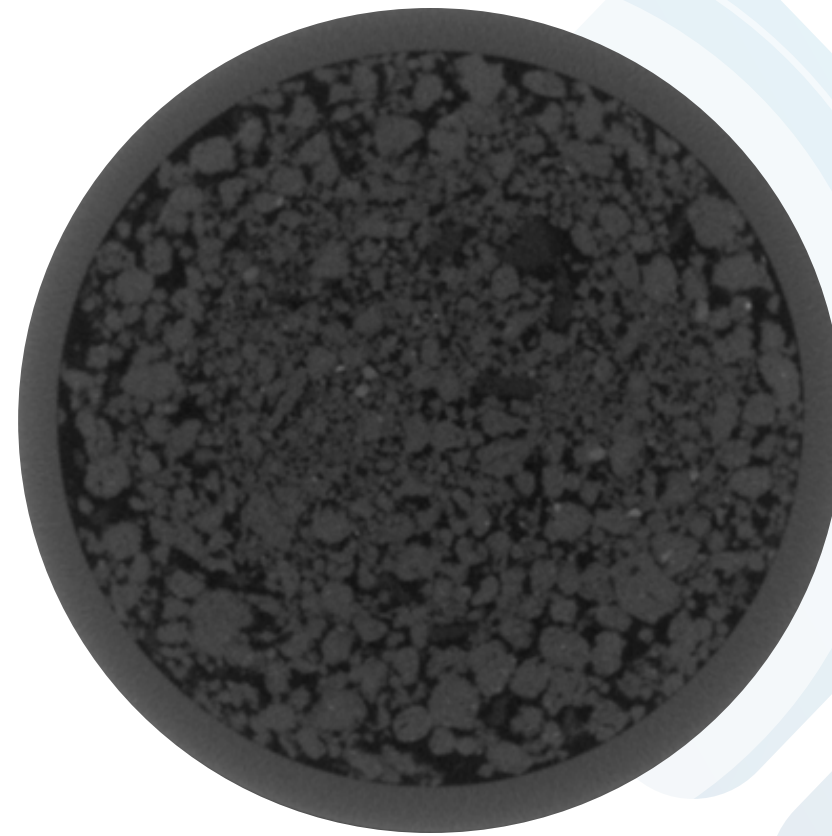
Trials in coffee



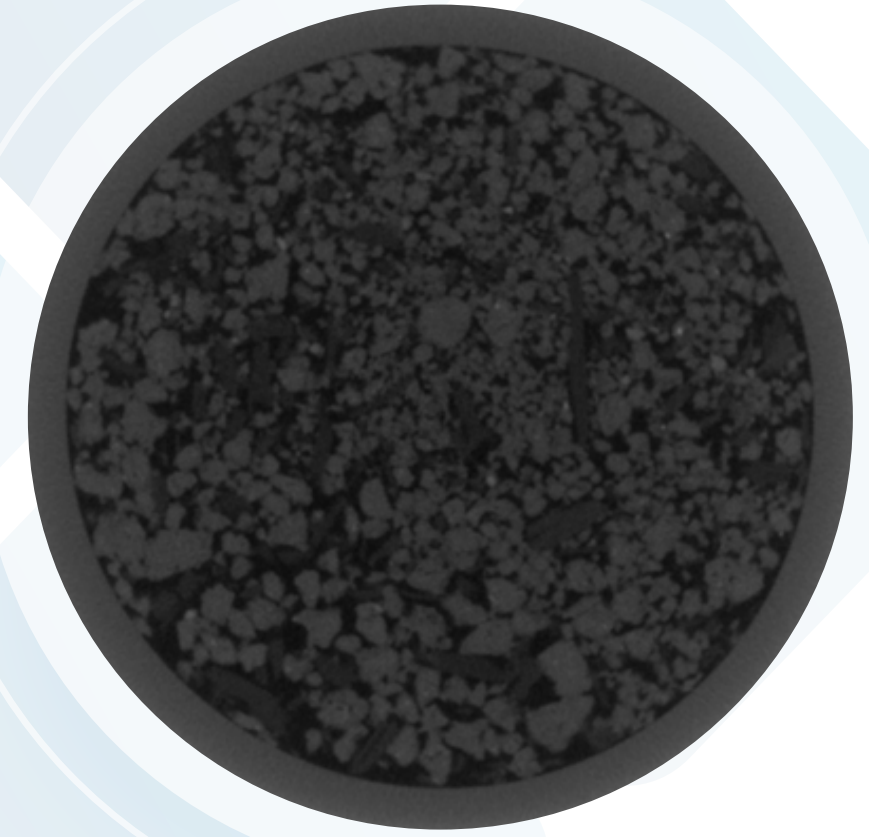
Sections of x-ray computed tomography scans of a vertosol soil, packed into tubes of ~ 30 mm, at a resolution of 70 μm



Control



1% biochar



5% biochar

Summary of effects of some Biochar in some soils

Properties of biochar

- Nutrients
- Stable C content
- Liming effect
- Reactive surfaces and redox
- CEC and AEC
- Porosity/ water holding capacity and bulk density
- Porosity / microbial habitat
- Smoke chemicals?

Soil and crop outcomes

- Increases in nutrient use efficiency allowing reduced fertiliser inputs
- Improved water use efficiency
- Reduced leaching and gaseous losses of fertiliser
- Reduced denitrification
- Lowered Al toxicity
- Reduced heavy metal bioavailability
- Increased P availability on P sorbing soils
- Improved mycorrhizae and biological N₂ fixation
- Long-term accumulation of soil C

Myth Busting

- Not all biochars will be valuable
- Biochar may not be beneficial in all soil types
- Value of the crop will limit application of biochar- and bottom line
- Biochar certification is coming
- Understand Biochar characteristics to ameliorate soil constraints
- Biochars with high C content are more effective at accumulating additional C in soil
- Biochar can particularly target chemical constraints in ferrosols including low pH, high Al availability and low P availability
- Biochars with high mineral ash component are more effective at improving crop production
- Farming system impacts the way Biochar works: Possible C accumulation under permanent pasture, but tillage and biomass removal under cropping can still result in a decline in C

TRUSTED PARTNERS

AFCONS

Technip

TÜV

ISO 14001:2004

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SC Shroff Consultants

STERLING & WILSON

THANK YOU

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