



Multiple applications of biochar

Circular Carbon produces fully certified biochar from cocoa shells for horticulture and agriculture

Hamburg, 23 March 2023 – Circular Carbon GmbH operates the first industrial plant for the production of biochar in Hamburg. The company carbonises nutrient-rich cocoa shells, a residual material from cocoa production, by pyrolysis, a decomposition reaction in which organic materials break down in the absence of oxygen. Biochar is currently mainly used as a soil additive to improve depleted soils in horticulture or agriculture. When added to the soil biochar can sequester the carbon it contains and thereby act as a carbon sink. It can also be used in flood management to turn a city threatened by flooding into a "sponge city". The biochar can absorb excess water from heavy rainfall and release it back to urban trees in times of heat stress and drought. In animal farming, biochar increases feed efficiency and residual plant digestibility. In addition, the methane emissions of animals can be reduced thereby reducing greenhouse gas emissions from animal farming. Other organic materials, such as oat husks, straw or green waste, are equally suited for the pyrolysis process. The certified Circular Carbon biochar is available for delivery directly from the plant.

The Intergovernmental Panel on Climate Change, the IPCC, has recognised Biochar as a method of CO₂ sequestration. Circular Carbon has multiple certifications, including by CerTrust with the Certificate of Quality Assurance of the Production Process (abbreviated to CE approval as a fertiliser and soil additive in accordance with EU Regulation 2019/1009), and GMP+ from DEKRA for animal feed.

Advantages of biochar for the farmer: less fertiliser, improved humus formation and higher yields

There are considerable advantages of using biochar in agriculture from both a chemical and biological point of view: biochar increases the cation exchange, the balance of nutrients and bases is supported, humus formation is improved, the nutrients potassium and phosphorus are mobilised, and the nitrogen balance becomes more sustainable, which leads to a reduction of industrial fertilisers use. Since biochar also increases the pore volume of the soil and counteracts soil compaction it also improved the water retention capacity and the air balance in the soil.

Advantages of biochar for the farmer: healthy animals, improved stable climate

In animal farming, biochar has proved to increase feed efficiency and residual plant digestibility. This results in higher milk yield, better weight gain, higher quality of animal products such as a higher protein contents in milk or meat. Thanks to a reduction of ammonia emissions the climate in the barn is improved, which makes the animals more vital and healthier, and reduces the cost for veterinary services and medication.

The effects of biochar are highly complex as it changes the soil sustainably over time so the "biochar capital" is "paying interest".



CIRCULAR CARBON



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Circular Carbon biochar is certified:

- CE - Approval as fertiliser and soil additive according to EU regulation 2019/1009
- REACH approval
- EBC - European Biochar Certificate
- GMP+ quality certificate for feed production
- FIBL - listed

About Circular Carbon:

Circular Carbon GmbH, based in Straubing, Germany, develops biomass energy systems for the production of valuable biochar and renewable process steam. With the help of this technical solution, the ClimateTech company enables industrial customers in the food and biomass sectors to decarbonise their production processes and to sequester carbon when selling off the biochar from the pyrolysis process (negative emissions). The Circular Carbon system transforms residual biomass into carbonaceous materials that can be used, for example, in agricultural and horticulture (such as agriculture, fruit & horticulture, urban trees, animal feed as well as in the construction sector).

www.circular-carbon.com

About econnext:

Founded in 2016, the technology holding company is exclusively dedicated to supporting subsidiaries that have a long-term, profitable and scalable positive impact on the economy, environment and society in line with the United Nations Sustainable Development Goals (SDGs). As the parent company, econnext holds majority stakes in Autarq GmbH (solar roof tiles), Circular Carbon GmbH (biochar for soil improvement and as a CO₂ sink), ESG Screen17 GmbH (sustainability screening of investment portfolios), FLAXTEC GmbH (recycling technology, among others), GRIPS Energy GmbH (renewable energy supply) and LUMENION GmbH (large-scale energy storage/heat storage).

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