



Biochar from Agroforestry for Agricultural and Horticultural Applications and Value Chains

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High-quality biochar can be produced from woody biomass by pyrolysis and serves as a valuable co-substrate in composting, for example, to generate a particularly humus-rich, growth-promoting end product with soil-improving properties.

Agroforestry systems can provide woody and lignin-rich biomass efficiently in an environmentally and climate-friendly manner. Furthermore, the growth rates of some fast-growing agroforestry trees are significantly higher than those of trees under forest management.

The generated biomass can be refined into high-quality biochar by means of thermal treatment. Modern pyrolysis processes that comply with the strict requirements of the European Biochar Certificate (EBC) industry standard are particularly suitable for producing quality-assured biochars. In the opposite, wood gasification chars tend to be unsuitable or should be subjected to a thorough safety check at least, as they may contain harmful substances. In agriculture and horticulture, quality-assured biochar has a wide range of uses: Due to its stable carbon structure, high porosity and adsorption capacity, it is a particularly effective medium for long-term humus formation as well as nutrient and water retention. The value creation opportunities can be even further increased along a cascade usage, for instance, by using biochar in livestock breeding as a silage additive, as a carbon feed additive or as bedding in a barn or in manure treatment in order to minimize greenhouse gas emissions, fix nutrients, promote animal welfare and animal health.

In addition, biochar is also used as an additive in the production of high-quality plant and soil substrates or composts. The application in the field as a permanent and growth-promoting soil conditioner finally represents the end of the value chain.



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