



## **Biochar as carrier for plant nutrients and microorganisms – techniques of agro-activation**

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The soil enhancing qualities of biochar are strongly linked to its influence on nutrient cycling dynamics, sorption dynamics and to changing habitat condition for soil fauna. But as shown in multiple studies, the addition of pure biochar to agricultural soils may provoke reduced plant growth caused by the immobilisation of plant nutrients. The very potent sorption dynamics of biochar makes it an effective carrier for plant nutrients and plant-root symbiotic microorganisms. At the Delinat-Institute, we tried sundry methods of charging biochars with organic and mineral plant nutrients as well as with microorganisms. This includes the use of biochar as bulk agent in aerobic composting, in malolactic fermentation and as treatment for liquid manure, but also formulations of mineral carbon-fertilizers. Those biochar products are tested in pot and also large scale field trials. Results and experiences of these trials as well as different activation methods will be explained. A short overview of industrial designing of biochar based products will be given.