

## Biochar Used in Combination with Organic Fertilization for Potted Plants: Its Effect on Growth and *Pythium* Colonization.

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### Background:

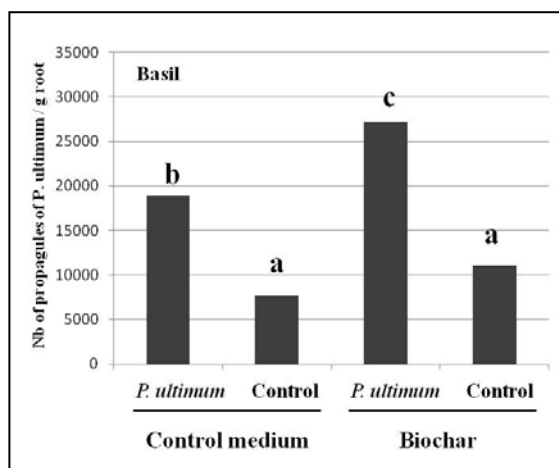
Benefits that can be drawn from the use of biochar, a byproduct of pyrolysis, in agriculture have been known for a long time. A change in nutrient availability and microbial activity are often related to the effect on plant growth following incorporation of biochar.

### Project Overview:

Growth of sweet pepper, basil, coriander, geranium, and lettuce in a peat-based medium containing or not containing biochar was compared. Half of the plants were inoculated with *Pythium ultimum* and all were fertilized using liquid organic fertilizer. Plant biomass accumulation, root colonization by the pathogen and soil biological activity were evaluated.

A higher shoot growth (45% DW) was obtained in the biochar-amended medium for coriander whereas a negative effect (45% DW) was observed for lettuce plants.

For *Pythium*-inoculated plants, root colonization by the pathogen was higher in the medium amended with biochar, except for coriander (example of root colonization of basil plants by the pathogen shown). However, even in plants with a higher colonization rate, no visible signs of damage to the root system or to plant development were observed. Soil respiration was lower when biochar was present in the growing medium, which could be related with its specific properties on GHG rather than to a reduction in the biological activity.



### Conclusions:

Depending on plant species, high biochar amendment (1:1; v:v) had positive, none or negative effects on growth. Despite the fact that biochar offered a good environment for *Pythium* development, no pathogen damage was observed on the plants.

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