

BIOCHAR AS POTTING SOIL CONSTITUENT AND AS CARRIER OF *BACILLUS* IN THE CULTIVATION OF *CYCLAMEN*

C. Blok, Greenhouse Horticulture, Wageningen University & Research, the Netherlands
Chris.Blok@WUR.nl

R. Leyh, Greenhouse Horticulture, Wageningen University & Research, the Netherlands
R. Visser, Energy Research Centre of the Netherlands (ECN) Part of TNO, The Netherlands
L. Fryda, Energy Research Centre of the Netherlands (ECN) Part of TNO, The Netherlands

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There is a growing interest in peat alternatives for the preparation of horticultural potting soils. There is also a growing interest in preparing potting soil mixes with added micro-organisms to increase the resilience of the potting soil – plant combination against diseases. Our goal was to use biochar to partly replace peat as well as to carry a commercial *Bacillus subtilis* into peat based potting soils. Peat based rooting media were prepared with an increasing volume fraction of biochar (0, 20, 20, 35 and 50%-v/v). Two extra treatments based on 0 and 20%-v/v biochar were inoculated with *Bacillus subtilis* in a concentration of 10^{17} c.f.u./g dry rooting medium. *Cyclamen persicum* Halios® Blush were planted and cultivated during 4 months. The water content of the pot was monitored and the irrigation schedule was set to maintain a minimum volume of 32%-v/v of water. At the end of the cultivation period the fresh and dry biomass of the leaves, flowers and tubers was measured. Results showed an optimum *Cyclamen* growth in the treatment with 20%-v/v biochar. However the reduced biomass production at higher levels of biochar were caused by a lack of nutrients added and not by the biochar itself, as indicated by EC levels and levels of individual elements. The inoculated *Bacillus* population first decreased and finally stabilized in the rooting media. *Bacillus* inoculation had a negative effect on biomass production. In conclusion the use of biochar as peat alternative is possible if additional attention is paid to irrigation settings and nutrient levels. The use of biochar as carrier for resilience enhancing *Bacillus subtilis* was unsuccessful.