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Title of the presentation

Increasing the circularity of growing media: the challenge of new materials and reuse

Biography

Dr. Bart Vandecasteele is expert on compost quality and the recycling of agricultural organic waste, and on the use of compost, biochar and plant fibres in sustainable growing media, i.e., growing media blends based on sustainable and local materials. He was leading the NutriHort Benchmark study and was convener of the related NUTRIHORT conference on innovative techniques and strategies for reduction of nutrient losses in horticulture, project leader of the Interreg2seas project Horti-BlueC on Circular Horticulture (www.horti-bluec.eu), and convenor of the ISHS GrowingMedia2021 symposium (www.growingmedia2021.com/).

Abstract

Growing media are important for circular horticulture as they allow for optimal use of materials and nutrients, both in terms of blend composition, and in reuse/upcycling spent media at the end of cultivation. The direct reuse or use as feedstock for further processing of spent media allows for extending their use as growing medium and thus provides allowing for added values in terms of nutrient efficiency and sustainability of the soilless cultivation system. Growing media blends based on sustainable and local materials allow for reduction or complete replacement of non-renewable raw materials such as peat or mineral wool, and may also have an added value for plant growth and environment in terms of lower need for fertilizers due to the provision of recycled nutrients, and lower need for chemical crop protection products due to increased disease resistance of crops. The selection of materials in the blend is key for a successful cultivation, but also for reuse of the growing media. Materials in sustainable growing media blends and the cultivation practice during first use of the growing media affect the characteristics of spent growing media and thus the potential of the spent growing medium to be reused or upcycled. Optimizing the cultivation practices may be a strategy to increase the circularity of soilless horticulture. Biochar has potential to further increase the sustainability of growing media and controlled-environment agriculture.