



Sopartec, the technology transfer company of the Université catholique de Louvain (UCL), presents

A NEW BIOREACTOR FOR MASS PRODUCTION OF HIGH QUALITY ARBUSCULAR MYCORRHIZAL FUNGI INOCULANTS



Mycelium and spores of *Glomus* sp

Technology Keyword

- Arbuscular mycorrhizal (AM) fungi
- *In vitro* mass production
- Semi-hydroponic bioreactor

Technology Market : Agricultural biotechnology

AM fungus association with the roots of plants is known to be beneficial for the plant. The fungi supply the plants with nutrients, thus increasing their growth and yield, and improve their resistance against biotic and abiotic stresses. Hence the exploitation of these symbionts in agro-environments is of **high environmental relevance, economic value and societal impact**.

However, the current systems aimed at producing AM fungi inoculums fail to deliver high quality products (high risk of microbial contaminations with plants grown under greenhouse conditions) or are costly and

complex to be scaled-up (as for AM fungi production on genetically modified root-organ culture systems).

The UCL invention

The new mass production bioreactor of AM fungi developed by the laboratory of mycology at UCL present several characteristics that overcome the above-mentioned problems: the AM fungal inoculum is produced

- under *in vitro* semi-hydroponic conditions;
- on whole autotrophic plants with roots developing *in vitro* (no need for genetically modified organism or isolated cells);
- under strict microbial-free conditions.

The products can find applications as **biofertilizers** or **biopesticides** in activity sectors such as agriculture (acclimation of *in vitro* micro-propagated plants), horticulture (production of fruits and vegetables), floriculture (production of ornamental plants and cut flowers) and nursery (increased survival rate for tree transplant).

Technology Status

This work is the subject of a patent application: PCT patent application filed on 15/01/2009 and published under No. WO 2009/090220.

(internal file reference number : SOP-214)

Representative Reference

Voets L. *et al.*, 2009. *Mycorrhiza*, 19: 347-356.

Sopartec would like to talk to companies interested in developing and commercializing these new technology and product.

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