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# REVISED

**A PCR-based method to quantify fungal growth during pretreatment of lignocellulosic biomass**

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## **Key words**

Fungal pretreatment; Solid State Fermentation (SSF); Plant biomass

## **Abstract**

Filamentous fungi have shown great potential in the pretreatment of lignocellulosic biomass and their use in bio-processes based on Solid State Fermentation (SSF) opens promising perspectives for plant biomass valorization. Obviously, quantification of the fungal biomass throughout the fermentation is a crucial parameter for SSF evaluation and control, both at the laboratory and industrial scale. Here we provide a qPCR-based method as a reliable alternative to conventional methods to estimate mycelial growth during plant biomass treatment. For the three strains analyzed, the lowest detection limit ranged from 58 to 272  $\mu\text{g}$  mycelium dry weight per gram biomass (dry weight). We show that the qPCR-based method allows fungal growth monitoring during fermentation and provides relevant information for selection of the most appropriate fungal strains in specific SSF/reactor conditions.

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