Talk

Cultivation of Lentinula edodes, Hericium erinaceus and Pleurotus citrinopileatus for commercial and industrial development

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Keywords: edible mushrooms; ITS; vegetative cycle; basidiomycete

ABSTRACT

The company ‘cultivando empleo’ (from now on ‘the company’) is an insertion company whose main aim is to generate employment by developing a novel economic activity with high added value, the cultivation of "gourmet" mushrooms with interesting nutritional properties. So far, the company has the necessary know-how to carry out the tasks of production, harvesting, packaging and distribution. It is the company's desire and strategic objective to acquire the knowledge that will enable it to develop and control the complete vegetative cycle of the maximum number of species of interest. The general objective of this specific project is the development and control of the whole vegetative cycle of three of the mushrooms which are Lentinula edodes, Hericium erinaceous and Pleurotus citrinopileatus, in addition to the transfer to the company of the knowledge that will enable it to develop by itself and in its facilities the entire cycle of vegetative cultivation of these three species. As for the methods used, first of all, we searched the literature and tested different media and culture conditions (Ahmed et al., 2008) necessary for the correct development of the fungi, analysing the growth rate in each of these different media. The Petri dish cultivation method was adjusted and the stability of the mycelium in the culture media was tested over time. Different methods for cultivation in liquid medium have been tested. To find out if it is possible to preserve the mycelium, freezing in different media and in different ways was assayed (Homolka, 2014). We are now checking micelia survival over time. We are generating grain spawn which is already completed in one of three mushrooms. For the characterization of the species and future quality control, the PCR amplification of the ITS region using the primers ITS1 and ITS4 was used (Cui et al., 2007). This was followed by restriction fragment length analysis (RFLP) of the ITS region. Digestion was made using Hinf I, Hae III and Hha I enzymes. Taxonomic identification has been confirmed by Sanger sequencing of the ITS fragments. At this time, the final step for fructification in Pleurotus citrinopileatus is being developed and the best grain for each mushroom is being determined. It is required more research for the next months to complete the growth cycle of the two remaining fungal strains.

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