

## **Effect of different cultivation conditions on *Trametes versicolor*: morphological image analysis and metabolic production**

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The metabolic behaviour of white rot fungus *Trametes versicolor* was studied on agitated submerged cultures in its ability to produce exopolysaccharides and ligninolytic enzymes. With that purpose, batch tests with four different experimental conditions were performed. Two different culture media were used namely Yeast Malt Extract Medium (Kim *et al.*, 2002) and *Trametes* Defined Medium (Roy and Archibald, 1993) and the latter one also with industrial effluent addition or with xyloidine addition. Laccase activity, exopolysaccharide formation and final biomass contents were determined during the batch assays and the pellets morphology was assessed by image analysis techniques. The obtained data allowed establishing the change of the metabolic pathways according to the experimental conditions, either for ligninolytic enzymatic production in the *Trametes* Defined Medium experiments, or for exopolysaccharides production in the Yeast Medium study. Furthermore, the image processing and analysis methodology allowed for a better comprehension of the physiological phenomena with respect to the corresponding pellets morphological stages.

Kim, S.W., Hwang, H.J., Park, J.P, Cho, Y.J., Song, C.H., Yun, J.W. (2002) Mycelial growth and exopolysaccharide production by submerged culture of various edible mushrooms under different media. *Let. Appl. Microbiol.* 34, 56-61

Roy, B., Archibald, F. (1993) Effects of kraft Pulp and Lignin on *Trametes versicolor* Carbon Metabolism. *Appl. Environ. Microbiol.* 59(6) 1855-1863.