

Influence of pH and Incubation Temperature on Lipolytic Activity of *Macrophomina phaseolina*

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Lipases are extensively studied due to the growing number of industrial applications in the oils and food industry. The demand for lipases with specific characteristics is continuing to stimulate the screening and isolation of new lipolytic microorganisms. We investigated the influence of incubation temperature and pH on the lipolytic activity of culture broths of *Macrophomina phaseolina* isolates. A full experimental design was done with initial pH at 3.5, 4.5 and 5.5 versus incubation temperatures at 25 °C, 30 °C and 35 °C, using strains CMM 2105, PEL and MMBF 04-10 cultivated under agitation in mineral salts broth added of olive oil as carbon source. Samples of the broths were taken at every 24 hours for 4 days. The lipolytic activity was determined spectrophotometrically with 4-nitrophenol palmitate at 45 °C for 30 min and the Lowry method was used for protein determination. The development of the activity of the three isolates depended on both the initial broth pH and the incubation temperature. PEL and CMM 2105 showed a similar pattern: highest specific activity developed at 30 °C at pH 4.5 and 6.5 at 96 h of cultivation. Strain MMBF 04-10 also showed highest specific activity when cultivated at 30 °C, however at pH 5.5. Under these conditions its activity was four times higher than that of the other two strains (0.41 U mg⁻¹ protein), developing 24 h earlier (72 h of incubation) and will be the object of further studies.