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Oomycete
Molecular Genetics Network

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* loss of plastids
▲ gain of plastids

10 Characterization of the Phytophthora cinnamomi lipase activity

V. COELHO, L. ESTEVINHO and A. CHOUPINA
Escola Superior Agrária de Bragança, Apartado 1172-5301-854 Bragança, Portugal
Email: albracho@ipb.pt

Phytophthora cinnamomi is a soildborn pseudofungus, associated to the Oomycetes with ink disease of chestnut.

Lipases (triacylglycerols hydrolases) are important enzymes in fat metabolism, catalyzing the breakdown of triacylglycerols to free fatty acids and glycerol. Owing to the very low solubility of their natural substrates, this hydrolysis is catalyzed at the interface between an insoluble substrate and the aqueous phase in which the enzyme is solubilized. This feature distinguishes them from esterases, which preferentially catalyze the hydrolysis of soluble esters in water. Lipases constitute a ubiquitous group of enzymes able to catalyze a number of different reactions, many of them of industrial interest (stereoselective hydrolysis, transesterification, etc.). The objective of the present study was to evaluate the growth of P. cinnamomi in the lipids content medium. Additionally it was researched the presence or absence of lipases.

The analysis of the results, proved that the growth of the P. cinnamomi decreased exponentially and the lipids content increased in the extracellular medium, for concentrations upper the 1 and 2% (w/v), for tributyrin and for olive oil, respectively. The maximum concentration for the grown was 3% for the tributyrin and 10% for the olive oil.

The determination of the lipase activity was effectuated in the semi solid medium. The quantification was result for the quotient between the square of the diameter of the clear halo to the return of the colonial and the square of the diameter of the colonial.

In this study; was verified that to the contrary of the growth, the lipase activity was upper for the concentration of lipids of 2 and 3%. In this work, we will also study the lipase quantification by spectrophotometric methods.

11 Phylogenetic relationships of a new species of Phytophthora closely related to Phytophthora infestans in the Andean Highland of Ecuador

C. CHU, L. GOMEZ, G. FORBES and J.B. RISTAINO
1Box 7616, Dept. of Plant Pathology, North Carolina State University
2International Potato Center, Lima Peru

Recent studies suggest that Phytophthora infestans sensu lato in the Andean Highlands of South America has higher genetic diversity than previously described. In Ecuador, three clonal lineages (US-1, EC-1, EC-3) were found on different host species in the genus Solanum. Another lineage, EC-2, has both A1 and A2 mating types and belongs to 1a and 1c mitochondrial DNA (mtDNA) haplotype, respectively. Moreover, the EC-2 lineage was found in association with different plant genera beside Solanum. Isolates of P. infestans sensu lato EC-2 and EC-3 lineages fit the morphological description of P. infestans but are quite different from any genotypes of P. infestans described to date, raising questions about their taxonomic status and relatedness to isolates of P. infestans associated with potato and tomato. Hence, the objective of this study was to