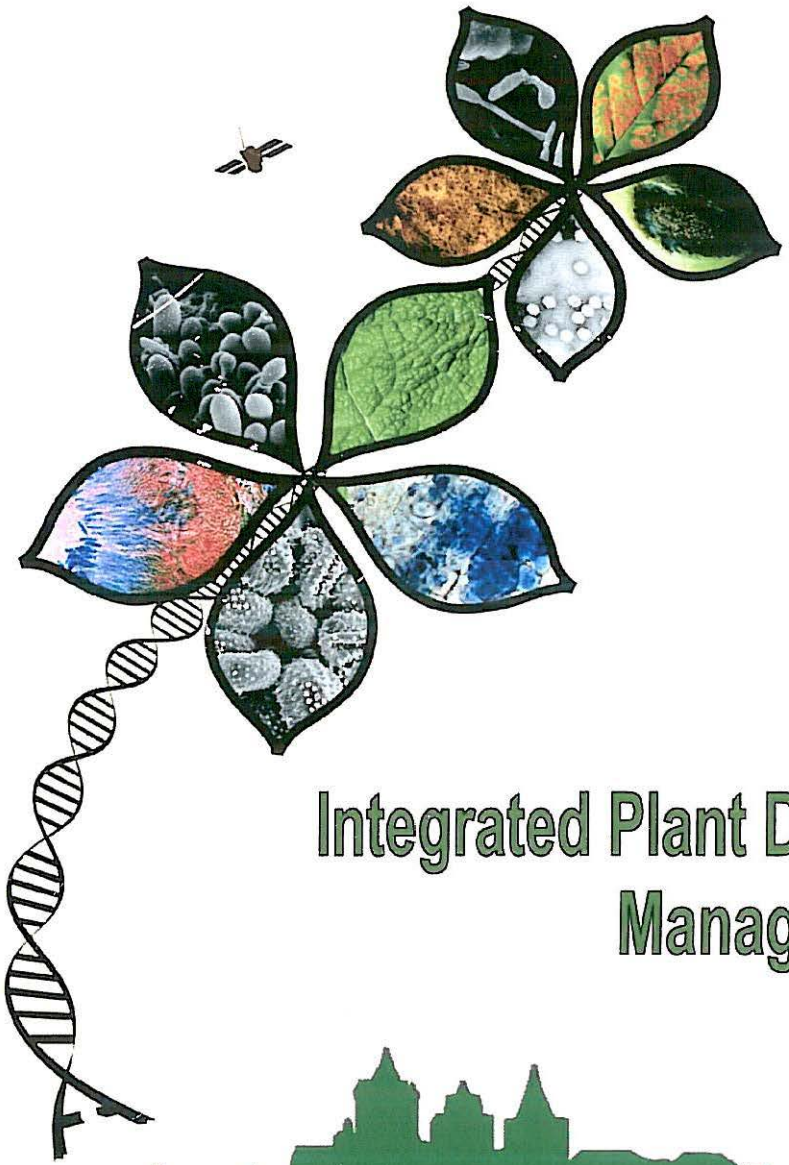
Book of Abstracts

9th Conference of the European Foundation for Plant Pathology

6th Congress of the Sociedade Portuguesa de Fitopatologia



Integrated Plant Disease Management

Évora, Portugal Nov 15-18, 2010

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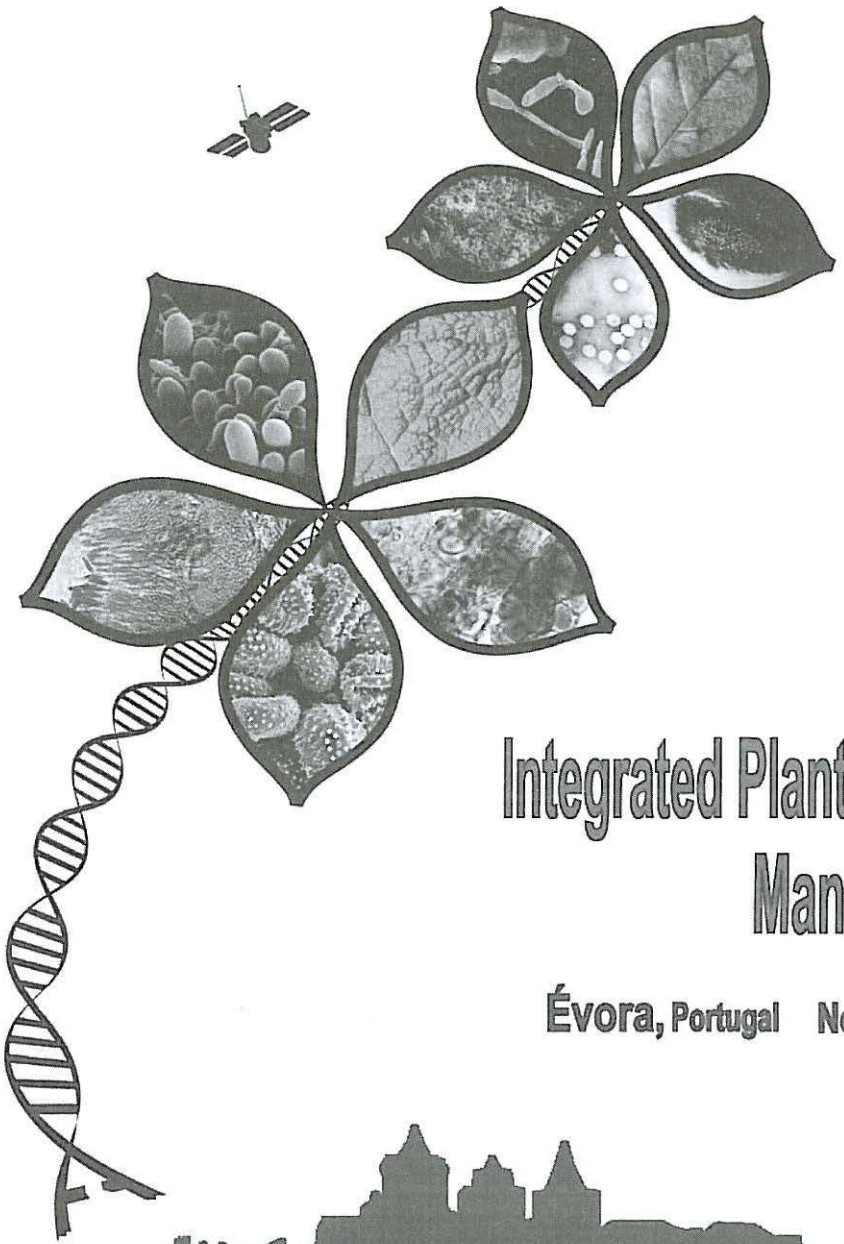

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P9.8 Cloning and expression analysis of glucanase genes from *Phytophthora cinnamomi*

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Phytophthora cinnamomi is one among the most destructive species of *Phytophthora* associated to the decline of forestry, ornamental and fruit species. Associated with this oomycete is the ink disease of *Castanea sativa*. Glucan endo-1,3-β-D-glucosidase catalyzes the hydrolysis of 1,3-β-D-glucoside linkages in callose, laminarin and several carbohydrates found in the cell wall of plants and fungi. It is generally thought that glucanases play a role in plant defence by digesting wall components of the fungal pathogen. In oomycetes, glucanases have been studied at biochemical level for their possible role in hyphal tip growth and branching, where there is thought to be a delicate balance between the cell wall synthesis and hydrolysis. Fungal cell wall degrading enzyme production is influenced by a number of factors including the type of strain, the culture conditions and substrate type. The aim of this work was the analysis of homologous expression, in *P. cinnamomi,* and heterologous expression, in *Pichia pastoris*, of the endo-1,3-β-D-glucosidase encoding gene *ENDO1* produced by *P. cinnamomi*. The expression was studied during growth in different carbon sources and was also performed a time course of endo-1,3-β-D-glucosidase production. Different plasmids were used to clone the gene on each organism and we used RT-PCR analysis to examine its expression. The major expression levels occurred at the medium with glucose as carbon source. These and other results will be presented.

Keywords: *Castanea sativa* Mill, *ENDO1*, heterologous expression, homologous expression.