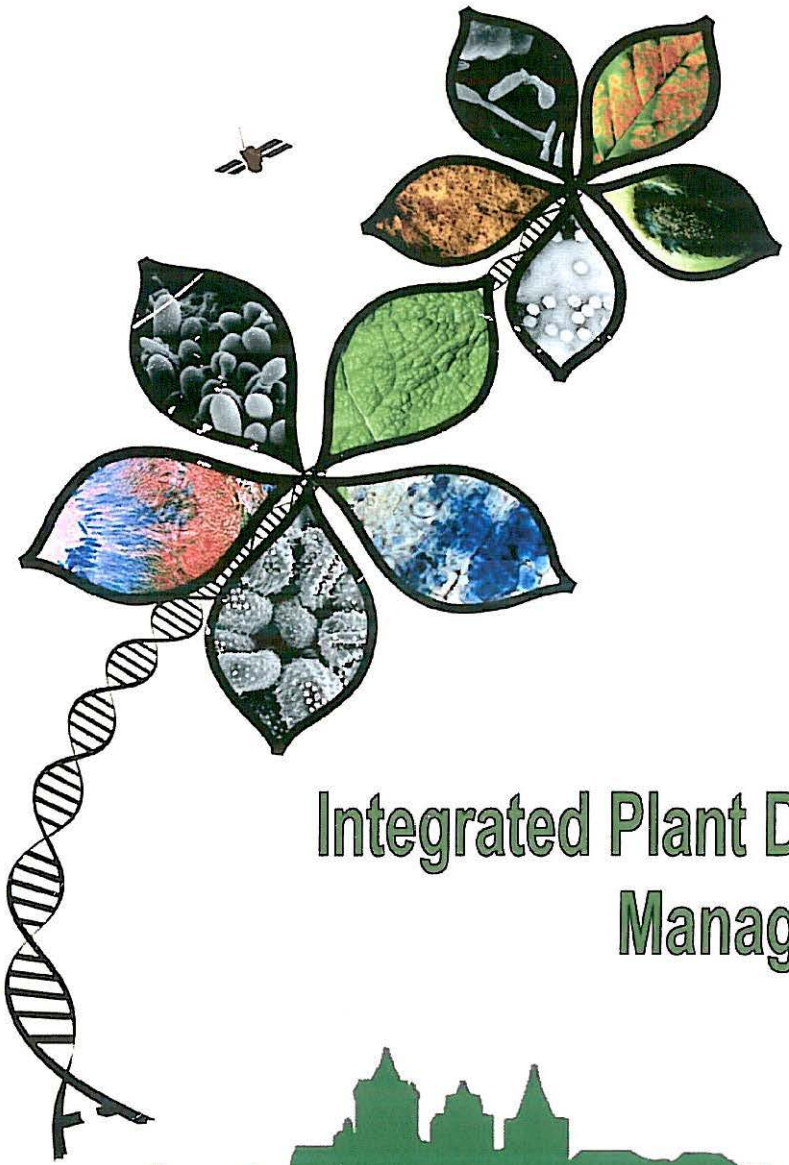
Book of Abstracts

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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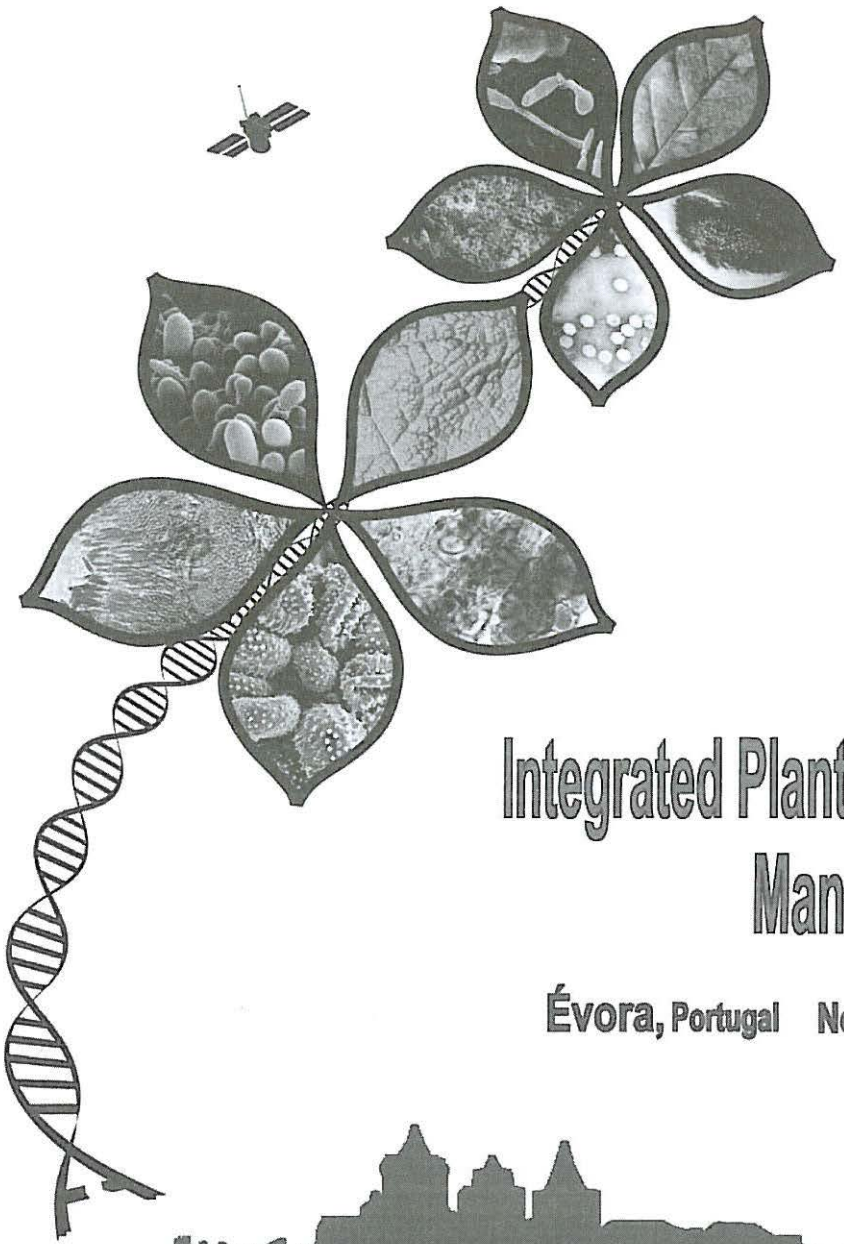

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P9.9 Expression analysis by RT-PCR of *GIP* gene from *Phytophthora cinnamomi*

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Species of the genus *Phytophthora* secrete glucanase inhibitor proteins (*GIPs*) to inhibit the activity of enzymes involved in plant defense responses, including during plant infection process of *Castanea sativa* by *Phytophthora cinnamomi.* GIPs show structural homology to the chymotrypsin class of serine proteases (SP) but lack proteolytic activity due to the absence of an intact catalytic triad and, thus, belong to a broader class of proteins called serine protease homologs (SPH), nonfunctional because one or more residues of the essential catalytic triad is absent (His-Asp-Ser). GIPs show high homology to the S1A subfamily of SP, however questions remain about the expression patterns and potential roles of different GIPs during pathogenesis and their possible interaction with host EGases in the plant apoplast. ORF of *GIP* gene from *P. cinnamomi* encodes a 269 aa protein. In order to understand its function, we proceeded to the heterologous expression in *Pichia pastoris*. The expression was studied during growth in different carbon sources and a time course of glucanase inhibitor protein production by RT-PCR was also performed. The major expression levels occurred at the medium with glucose as carbon source.

Keywords: *Castanea sativa* Mill, glucanase inhibitor proteins.