



CIGR - International Conference of Agricultural Engineering  
XXXVII Congresso Brasileiro de Engenharia Agrícola

Brazil, August 31 to September 4, 2008



## NOCTURNAL VENTILATION FOR CONTROLLING GREENHOUSE HUMIDITY AND *Botrytis cinerea* SEVERITY IN UNHEATED TOMATO GREENHOUSES

FÁTIMA JESUS BAPTISTA<sup>1</sup>; BERNARD JOHN BAILEY<sup>2</sup>; JORGE FERRO MENESES<sup>3</sup>

<sup>1</sup> Professor, PhD, University of Évora/ICAM, Évora – Portugal, fb@uevora.pt

<sup>2</sup> Researcher, PhD, Formerly at Silsoe Research Institute, UK

<sup>3</sup> Professor, PhD, High Institute of Agronomy, Technical University of Lisbon, Portugal.

Presented at

**CIGR INTERNATIONAL CONFERENCE OF AGRICULTURAL ENGINEERING  
XXXVII CONGRESSO BRASILEIRO DE ENGENHARIA AGRÍCOLA – CONBEA 2008**

Brazil, August 31 to September 4, 2008

**ABSTRACT:** Grey mould disease is one of the most important diseases affecting crops grown in unheated greenhouses, where ventilation is the main technique used to control inside environmental conditions. The main goal of this investigation was to study the influence of nocturnal ventilation on the humidity conditions in unheated tomato greenhouses and the consequences for *Botrytis cinerea* control. Experimental work was realised at the High Institute of Agronomy in Lisbon in two identical adjacent double-span greenhouses covered with three layer co-extruded plastic film. Two different natural ventilation treatments were randomly assigned to the greenhouses, being one treatment nocturnal or permanent ventilation (PV), with the vents open during the day and night and the other classical ventilation (CV), in which the vents were open during the day and closed during the night. Inside the nocturnally ventilated greenhouse air humidity was significantly reduced comparing with the classical ventilated greenhouse. Also, it was observed a great contribution to reducing disease severity on tomato leaves caused by *B. cinerea*.

**KEYWORDS:** greenhouses, grey mould, nocturnal ventilation