

# XVIII. International Plant Protection Congress

Mission possible: food for all  
through appropriate plant protection



24–27 August 2015 • Berlin (Germany)

## ABSTRACTS



© fotolia.com/Beboy/St. Körber/drob/S. Mathews/T. Nyshko/jola B.



Industrieverband  
**Agrar**



[www.ippc2015.de](http://www.ippc2015.de)



**Oral Presentations  
Outline**

Keynote Speakers • O KN 1-6..... p. 3  
Challenges in Plant Protection I • O CCII-1-6 ..... p. 5  
Nematodes I • O NEM I-1-6 ..... p. 8  
Viruses • O VIR 1-6..... p. 11  
Soil-borne Pests and Pathogens • O SOIL 1-6 ..... p. 14  
*Tuta Absoluta* • O TUT 1-5 ..... p. 17  
Challenges in Plant Protection II • O CCI II-1-6 ..... p. 20  
Nematodes II • O NEM-II 1-6 ..... p. 23  
Stored Product Protection • O STO 1-6 ..... p. 26  
Fusarium • O FUS 1-6..... p. 30  
Assessment of Invasive Species • O AIS 1-6..... p. 33  
Plant Protection in a Changing Climate • O CHC 1-6 ..... p. 37  
Nematodes III • O NEM III-1-6 ..... p. 41  
Pest and Diseases in Trees • O TREE 1-6..... p. 45  
Weeds • O WEE 1-6 ..... p. 48  
Management of Invasive Species • O MIS 1-6 ..... p. 51  
Genetic Ressources I • O GR I-1-6..... p. 54  
Fruit Flies • O FF 1-6..... p. 57  
Mycotoxins • O MYC 1-6..... p. 60  
Plant Pathogen Interactions I • O PPI I-1-6 ..... p. 63  
Non-Chemical Control Options I • O NOC I-1-6 ..... p. 67  
Genetic Ressources II • O GR II-1-6..... p. 70  
Drosophila Suzukii I • O DSU I-1-6 ..... p. 73  
New and Emerging Pests and Diseases I • O NEW I-1-6 ..... p. 76  
Plant Pathogen Interactions II • O PPI I- 1-6 ..... p. 80  
Non-Chemical Control Options II • O NOC II-1-6 ..... p. 83  
Biotechnology • O BT 1-6..... p. 87  
Drosophila Suzukii II • O DSU II-1-6 ..... p. 91  
New and Emerging Pests and Diseases II • O NEW II-1-6 ..... p. 94  
Plant Pathogen Interactions III • O PPI III-1-6 ..... p. 98  
Botanicals • O BOT 1-6..... p. 102  
Workshop/Film Presentation • Highlights of Hidden Insect Worlds • O FILM 1 ..... p. 105  
Workshop • Implications of Insect Pest Movement and Behavior on Designing Insect Resistance Management Strategies for Transgenic Crops • O WS ECO 1-6 ..... p. 106  
Workshop • Food Security: The Role of Plant Protection • O WS FOOD 1 ..... p. 109  
Integrated Pest Management I • O IPM I-1-6 ..... p. 110  
Microbiomes • O MIC 1-6 ..... p. 115  
Plant Diseases and Irrigation • O IRR 1-6..... p. 119  
Precision Farming • O FARM 1-6..... p. 122  
Herbicide Resistance O HR 1-6..... p. 126  
Integrated Pest Management II • O IPM I-1-6 ..... p. 129  
Endophytes I • O END I-1-6 ..... p. 132  
Insecticides I • O INS I-1-6..... p. 135  
Disease Monitoring O DIS 1-6 ..... p. 139  
Herbicides • O HERB 1-6 ..... p. 143  
Integrated Pest Management III • O IPM III-1-6 ..... p. 146  
Endophytes II • O END II-1-6 ..... p. 150  
Insecticides II • O INS II-1-6..... p. 154  
Diagnosis • O DIA 1-6..... p. 157  
IPM Components • O ICO 1-6 ..... p. 160  
Technology Transfer • O TTR 1-6 ..... p. 163  
Legal Issues I • O LEG I-1-6..... p. 167  
Biocontrol of Insects I • O BI I-1-6..... p. 170  
Digital Technologies • O DIG 1-6..... p. 173  
Fungicides I • O FUN I-1-6 ..... p. 176  
CABI / Plantwise • O CABI 1-6..... p. 181  
Legal Issues II • O LEG III-1-6..... p. 184

**Oral Presentations  
Outline**

Biocontrol of Insects II • O BI II-1-6..... p. 187  
Modelling / Forecasting I • O MF I-1-6 ..... p. 190  
Fungicides II • O FUN II-1-6..... p. 193  
Education & Science Networks • O EDU 1-6..... p. 197  
Legal Issues III • O LEG III-1-6..... p. 201  
Biocontrol of Insects III • O BI III-1-6..... p. 203  
Modelling / Forecasting II • O MF II-1-6 ..... p. 206  
Fungicides III • O FUN III-1-6..... p. 210  
Workshop • Management of the South American Leafminer, *Tuta absoluta* • O WS TA 1 ..... p. 214  
Workshop • Behavioral and Biological Control of Stink Bugs • O WS BUG 1-7 ..... p. 215  
Workshop • Knowledge Transfer Through School Projects, Neighbourhood Gardening and Plant Health Clinics • O WS KT 1-2  
..... p. 219

O DIS 6

Monitoring of chestnut health condition using an Unmanned Aerial Vehicle

L. Martins<sup>1</sup>, J. Sousa<sup>2</sup>, J. Castro<sup>3</sup>, R. Bento<sup>2</sup>

<sup>1</sup>University of Tras-os-Montes and Alto Douro, Centre for the Research and Technology of Agro-Environmental and Biological Sciences, Vila Real, Portugal

<sup>2</sup>University of Tras-os-Montes and Alto Douro, INESC-TEC, UTAD, Vila Real, Portugal

<sup>3</sup>Polytechnic Institute of Bragança, CIMO-ESAB, Bragança, Portugal

[lmartins@utad.pt](mailto:lmartins@utad.pt)

Chestnut ink disease (*Phytophthora cinnamomi*) and chestnut blight (*Cryphonectria parasitica*) are diseases that cause important damages to European chestnut (*Castanea sativa*).

After two decades from the first occurrence of chestnut blight in Portugal, the hypovirulence began to be observed in some locations. The population of these strains is characterized by low diversity. Many of the sub-populations belong to the EU-11 group, which appears only in some orchards in Italy.

Successful treatment depends on the way the population of the fungus extends in the area to be treated. This study refers to the monitoring of inoculations in Padrela region (north Portugal).

The field evaluation was compared to remote sensing techniques that have the ability to collect information from various samples over a large area in a short time, especially with recent developments in sensors on spectral and spatial image resolution. The aerial images obtained by Unmanned Aerial Vehicles (UAVs) for vegetation monitoring has been motivated by the benefits as compared to full size airborne operation, namely the combination of high image quality and quick turnaround times together with lower operation costs and complexity.

For monitoring and evaluating the treated area and know the chestnut decline, were made in June 2014 aerophotogrammetric flights, covering 483 ha. It was used an UAV (*eBee*, *SenseFly*) and were obtained color and near infrared aerial photographs (Fig. 1). Those photographs were compared to aerial images obtained by piloted aircrafts in 2006.

In the period 2006-2014 occurred new chestnut plantations (67 ha), due to the eight multifunctional value of chestnut tree. However, in the study area the decline of chestnut was 56%. The biotic agents were the principal causes of the mortality and *C. sativa* decline, who was confirmed by field observations.

There are advantages on using UAV for the study purposes. Due to the low flying heights, resulting high resolution imagery, and lower image acquisition costs, compared to piloted aircraft or satellite images. UAV cover wide areas, and are virtually undetectable (flights 300 m, up ground), so animals won't be disturbed. The electric UAVs, do not have polluted emissions, resulting in benefits to the environment.

**Figure 1:** Chestnut tree affected by *C. parasitica* and aerial images obtained by UAV.



Chestnut blight (nº67)





ISBN 978-3-9816508-7-7