



## SCIENTIFIC PROGRAMME: WORKSHOPS

The purpose of **workshops** will be to look at recent advances and future prospects on specific Citrus issues, related to **hot topics**. The main objective is to **bring together members from the Citrus community for a thorough and lively discussion on each theme**. To promote discussions and active interactions, the convener of each workshop will make an introduction on the topic and then open and manage the debate. Conveners will make decisions on the best way to organize the debate according to the characteristics of each topic. **We encourage delegates willing to participate in these workshops to get in touch with the conveners**. Workshops will be programmed every day after regular sessions with a format of **2 hours**, thus providing enough time for discussion.

We are still **open for additional proposals**.

Summaries of the workshops can be also found on the programme tab at [www.citruscongress2012.org](http://www.citruscongress2012.org)



### **1** HLB Control

Convener: **J.M. Bové**

Université de Bordeaux Ségalen

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Methods and approaches for mitigation and control of HLB come under two major headings: (1) systems for immediate protection of citrus orchards against HLB, such as the three-pronged package, mixed orchards of citrus and repelling guava trees, but also the supply of micronutrients or SAR inducers by foliar sprays, and (2) intermediate/long term projects which are thought to offer solutions and protection in 5 to 10 years, such as the production of citrus cultivars resistant to HLB by acquisition (through Agrobacterium-mediated transformation or CTV-gene-vector-inoculation) of genes for anti-microbial peptides or plantibodies against the causal liberibacter. Transgenic cultivars lethal to, or repelling, the psyllid vector are also envisaged. These systems and others will be discussed in view of their potential to control HLB today and/or tomorrow. Information from countries where these systems or additional systems have worked or have not worked will be welcome.

### **2** New mandarin varieties

Convener: **P. Aleza**

Instituto Valenciano Investigaciones Agrarias (IVIA), Spain

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Very active programs to produce new mandarin varieties are being carried out in several countries using different approaches and technologies (diploid and triploid breeding, irradiation, somatic hybridization, genetic transformation, etc.). The objective of this workshop is to discuss about the most important breeding goals and advantages, disadvantages and main limitations of the different approaches.



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### 3 Procedures for the exploitation of protected and/or patented varieties

Convener: **M. Iborra**

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Practically all new citrus varieties are being protected and/or patented, opening new concepts for their commercial exploitation. In this workshop the different procedures being used worldwide will be discussed, including propagation in "clubs" and control procedures for geolocation and management of information on orchards growing protected varieties.

### 4 New Perspectives in Pest Control

Convener: **A. Urbaneja**

Instituto Valenciano Investigaciones Agrarias (IVIA), Spain

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Citrus is an international crop, accessible to exotic pests, but also with options to access solutions from around the world. The introduction to California of cottony cushion scale followed by the vedalia beetle in 1888, is just one early example of how citrus entomologists have worked together to develop ways to safeguard this important crop. Recent years have continued to see the spread of serious invasive pests and vectored diseases that challenge our scientific and grower communities. Climate change may also serve to exacerbate impacts from new invaders as well as resident pests. Current options to deal with these challenges are many, from -omic approaches to food-web engineering. Experts and practitioners of these and other pest management strategies are invited to present recent advances and join the discussion on ways to maintain citrus profitable and sustainable in the 21st century.



### 5 Dwarf Citrus trees in High-Density Plantings

Convener: **K. D. Bowman**

U. S. Horticultural Research Laboratory, USA

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Dwarf citrus trees are attracting increasing interest because of their potential to be used in high density plantings that will have greater yield during the first few years after tree establishment, and be easier to manage and harvest as the trees mature. The most common way to obtain dwarf citrus trees is through the use of a size-controlling rootstock. This workshop will provide researchers the opportunity to present information about size-controlling rootstocks and other approaches to developing dwarf trees, as well as other studies related to development and management of high density plantings. The challenges and benefits associated with dwarf citrus trees in high density plantings will be discussed.

### 6 Molecular Identification of Varieties

Convener: **T. Shimizu**

National Institute of Fruit Tree Science, Japan

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Identification of varieties by DNA marker allows to protect breeder's right on varieties developed by crossbreeding, but technical limitations still remain for the identification of mutant-origin varieties. The goal of this workshop is to introduce current studies on DNA markers analysis mainly for non-specialists. Number and type of DNA markers, DNA sample preparation, and/or analysis method for specific purposes will also be discussed.

### 7 Mechanization of Citrus Harvest

Convener: **E. Molto**

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Manual harvesting accounts for most of citrus production costs. This situation has led to major producing countries to invest in developing methods for mechanical mass harvesting. Moreover, the use of abscission agents for improving the performance of harvesting machines has been under research for more than a decade. Major achievements on mechanical mass harvesters and abscission agents have been reported in the last decade. This workshop will show them and discuss their socio-economic implications.



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### **8** Global Citrus Industry Collaboration on MRL Regulatory Issues

Convener: **J. R. Cranney, Jr.**  
California Citrus Quality Council, USA  
[jcranney@calcitrusquality.org](mailto:jcranney@calcitrusquality.org)

This workshop will explore the possibility that citrus producers around the globe could work collaboratively to advocate for more pesticide maximum residue levels citrus MRLs and for global regulatory policies that benefit citrus producers and trade. The goal of the workshop is to generate coordinated activity among citrus industry leaders to facilitate more global citrus trade.

### **9** Global Conservation Strategy for Citrus Genetic Resources

Convener: **K. E. Hummer**  
USDA ARS National Clonal Germplasm Repository  
Corvallis, Oregon, USA  
[Kim.Hummer@ars.usda.gov](mailto:Kim.Hummer@ars.usda.gov)

The International Treaty on Plant Genetic Resources for Food and Agriculture has recognized Citrus as an Annex 1 crop, and thus, a global conservation strategy needs to be established. The objective of this workshop is to plan the development of this strategy. The needs for exploration and collection, protocols for maintenance of ex situ genebanks, and for safe movement of healthy germplasm will be discussed and updated. The success of this strategy will help to improve conservation of Citrus germplasm.



### **10** Research Activities to Support the Potential Biological Effects of Citrus Fruits in Human Health

Convener: **Francisco A. Tomás-Barberán**  
CEBAS-CSIC  
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The effect of citrus fruits in human health has been an active field of research particularly during the last twenty years. This activity has been associated with benefits for cardiovascular and bone health, and with the decrease of cancer risk. Many of these studies have used in vitro models that do not reflect the complex situation in vivo. Clinical studies, however, have shown large inter-individual variability, leading to non-significant effects in many cases. The recent advances in the knowledge of citrus bioactive metabolism and bioavailability, and in human nutrigenetics, and gut microbiome open great expectations to understand the effects of citrus phytochemicals on health. In this workshop the research strategies, trends and perspectives, to support the role of citrus fruits in human health will be discussed.

### **11** Quarantine Security For Tephritid Fruit Fly Pests In Citrus

Convener: **N. J. Liquido**  
USDA-APHIS-PPQ, Center for Plant Health Science and Technology, Plant Epidemiology and Risk Analysis Laboratory, Honolulu, Hawaii USA  
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Tephritid fruit flies are serious pests of citrus. They cause direct fruit damage through oviposition and larval feeding, and warrant regulatory restriction on the movement of citrus fruits across national and international boundaries. Current quarantine mitigations for fruit flies in citrus include fumigation, high-temperature forced-air, vapor heat, cold, and irradiation treatments. Cold treatment appears to be a treatment of choice by several citrus producing countries, with a multitude of schedules and combinations of low temperature and treatment duration, depending on species of citrus and the guild of associated fruit fly pests. Participants are encouraged to join the discussion on evaluating current quarantine treatment schedules and exploring measures of achieving quarantine security other than Probit 9, the de facto standard of treatment efficacy adapted by the United States and many countries for high risk fruit fly pests.