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International Organization of Citrus Virologists

# 20TH IOCV CONFERENCE

April 10-15, 2016 Chongqing, China.





# Program & Abstracts











# **PROGRAM**

# **SUNDAY - 10 APRIL 2016**

9:00 - 21:00 Registration (Lobby of Haiyu Hotspring Hotel)

18:30 - 21:00Welcome cocktail (Taiyang Hall, Haiyu Hotspring Hotel)

# **MONDAY - 11 APRIL 2016**

8:00 - 9:20	Registration (Lobby of Haiyu Hotspring Hotel)
9:30-10:20	Opening Ceremony (International Meeting Center, Haiyu Hotspring Hotel)
Chair:	Changyong Zhou
9:30-9:40	Welcome remark from Weiguo Zhang, President of Southwest University
9:40-9:50	Welcome remark from Chongqing Municipal Government
9:50-9:55	Welcome remark from Department of International Cooperation & Exchange, MOE
9:55-10:00	Opening remark from Juliana Freitas-Astúa, the IOCV Chairperson
10:00-10:20	Group photo
10: 20-10:35	Coffee break

10:35-11:55 Oral session 1 (International Meeting Center, Haiyu Hotspring Hotel)

Chair: Juliana Freitas-Astúa

10:35-11:15 Genome research and genetic improvement of citrus during the past years in China

**Xiuxin Deng** (The Key Laboratory of Horticultural Crop Biology of MOE, Huazhong Agricultural University, China) (Invited speaker)

11:15-11:55 Using the CTV vector to attempt to control HLB

**William O. Dawson** (Department of Plant Pathology, Citrus Research and Education Center, University of Florida, USA) (Invited speaker)

12:00-13:00 Buffet lunch

#### **14:30-15:50 Oral session 2** (International Meeting Center, Haiyu Hotspring Hotel)

Chair: Georgios Vidalakis

14:30-15:10 Breeding of scion and rootstock HLB tolerance through genome-based information

**Fred G. Gmitter Jr.** (Citrus Research and Education Center, University of Florida, USA) (Invited speaker)

15:10-15:50 Molecular mechanisms behind the HLB symptom variations and rapid selection for variant citrus plants with greater HLB resistance/tolerance

**Yongping Duan** (Horticultural Research Laboratory, USDA-ARS, USA) (Invited speaker)

#### 15: 50-16:05 Coffee break

#### **16:05-17:45 Oral session 3** (International Meeting Center, Haiyu Hotspring Hotel)

Chair: Hong Lin

16:05-16:25 Molecular characterization of a group 16SrDNA III phytoplasma associated with HLB-like symptoms in sweet orange in Brazil

**Nelson A. Wulff** (Departamento de Pesquisa & Desenvolvimento, Fundecitrus, Brazil)

16:25-16:45 Genetic variation and high frequency transposition of non-autonomous transposable elements from *Candidatus* Liberibacter asiaticus

**Xuefeng Wang** (Citrus Research Institute, Chinese Academy of Agricultural Sciences / Southwest University, China)

16:45-17:05 Antibody-based diagnosis of citrus Huanglongbing and Stubborn using pathogen secreted proteins as detection markers

**Deborah Pagliaccia** (Department of Plant Pathology & Microbiology, University of California, Riverside, USA)

17:05-17:25 Research progress of the insect vectors of Huanglongbing in China

Yijin Cen (South China Agricultural University, China)

17:25-17:45 Monitoring citrus flush shoot ontogeny as a potential strategy for HLB and psyllid management

**Juan Camilo Cifuentes-Arenas** (Sao Paulo State University, Brazil) (IOCV sponsored young scientist)

17:45-18:30 Poster session 1 (International Meeting Center, Haiyu Hotspring Hotel)

P1 Backyard hosts of Asian citrus psyllid and *Canditatus* Liberibacter asiaticus

- P2 Infection route of *Candidatus* Liberibacter asiaticus in the body of its insect vector, *Diaphorina citri*
- P3 First report of Huanglongbing disease on Mexican lime in Iran
- P4 Study of the natural host range of *Candidatus* Liberibacter asiaticus in several herbaceous plants and shrubs in southern Iran
- P5 Transcriptome analysis of periwinkle to infection with *Candidatus* Liberibacter asiaticus
- P6 First report of *Candidatus* Liberibacter asiaticus associated with HLB disease in grapefruit from Southern of Iran

#### 18:30 Session close

## **TUESDAY - 12 APRIL 2016**

**8:30-10:10** Oral session 4 (International Meeting Center, Haiyu Hotspring Hotel)

Chair: William O. Dawson

8:30-9:10 Development of genome-based therapeutics to control HLB

**Hong Lin** (San Joaquin Valley Agricultural Sciences Center, USDA-ARS, USA) (Invited speaker)

9:10-9:30 Control progress of citrus Huanglongbing in Guangxi, P. R. China

Xianjin Bai (Guangxi Academy of Agricultural Sciences, China)

9:30-9:50 Asian citrus psyllid and Huanglongbing in California

**Georgios Vidalakis** (Department of Plant Pathology & Microbiology, University of California, Riverside, USA)

9:50-10:10 Impact of the environment on *Candidatus* Liberibacter asiaticus multiplication in young shoots of citrus trees

**Silvio A. Lopes** (Departamento de Pesquisa & Desenvolvimento, Fundecitrus, Brazil)

#### 10: 10-10:25 Coffee break

10:25-11:45 Oral session 5 (International Meeting Center, Haiyu Hotspring Hotel)

Chair: Nerida Donovan

10:25-11:05 Graft-transmissible citrus diseases in China-research developments

**Changyong Zhou** (National Citrus Engineering Research Center, Southwest University, China) (Invited speaker)

11:05-11:25 Effect of bacterial DNA concentration in diagnosis of HLB using conventional and qPCR methods

**Alberto Gochez** (Instituto Nacional de Tecnologia Agropecuaria, Argentina) (IOCV sponsored young scientist)

11:25-11:45 Diversity and variation of *Candidatus* Liberibacter asiaticus associated phage in Southern China

Zheng Zheng (South China Agricultural University, China)

#### 11:45-12:15 Poster session 2 (International Meeting Center, Haiyu Hotspring Hotel)

- P7 Predominance of single prophage carrying a CRISPR/cas system in *Candidatus* Liberibacter asiaticus strains in Southern China
- P8 Genetic diversity of *Candidatus* Liberibacter asiaticus in Iran
- P9 Multiplex qPCR detection of Candidatus Liberibacter spp. and Spiroplasma citri
- P10 False positives in molecular detection of *Candidatus* Liberibacter in citrus associated to endophytic bacteria
- P11 Anatomical research on tolerant citrus variety infected with Huanglongbing

#### 12:15-13:15 Buffet lunch

#### **14:30-16:10 Oral session 6** (International Meeting Center, Haiyu Hotspring Hotel)

Chair: Nelson A. Wulff

14:30-15:10 Diversity of virus associated with citrus leprosis symptom

**Juliana Freitas-Astúa** (Embrapa Cassava and Fruits and Biological Institute, Brazil) (Invited speaker)

15:10-15:30 Field performance of various *Citrus tristeza virus* cross-protection sources trialed in grapefruit in different climatic regions

Glynnis Cook (Citrus Research International, South Africa)

15:30-15:50 Evolutionary dynamic of a new CTV genetic lineage: what does the history tell us?

**Maria Jose Benitez Galeano** (University of the Republic, Uruguay) (IOCV sponsored young scientist)

15:50-16:10 Survey and molecular detection of *Citrus yellow vein clearing virus* and *Citrus chlorotic dwarf virus associated virus* in citrus nurseries at east Mediterranean region in Turkey

**Nüket Önelge** (Department of Plant Protection, Faculty of Agriculture, Cukurova University, Turkey)

#### 16: 10-16:25 Coffee break

#### 16: 25-18:00 Poster session 3 (International Meeting Center, Haiyu Hotspring Hotel)

- P12 Molecular identification of *citrus tristeza virus* isolates from citrus growing regions of Nigeria
- P13 Multiple genes expression from Citrus tristeza virus based vectors
- P14 Application of RNAi to improvement of citrus to acquire resistance to *Citrus tristeza virus*
- P15 Lateral flow immunoassay for the rapid detection of Citrus tristeza virus
- P16 Molecular characterization of Peruvian *Citrus tristeza virus* isolates based on 3' untranscribed region sequences
- P17 Influence of the quantity of *Citrus tristeza virus* on transmissibility by different aphid species
- P18 Genome sequencing through viral small RNAs of a *Citrus tristeza virus* isolate from Hunan province reveals the presence of multiple stem pitting strains
- P19 Interactions between structural and nonstructural proteins of Citrus tristeza virus
- P20 Citrus leprosis and Brevipalpus in the Lower Rio Grande Valley-Texas
- P21 Citrus psorosis virus in Tunisia: prevalence and molecular characterization
- P22 Distribution of CYVCV and cell structural change in infected Eureka lemon leaves
- P23 Deep sequencing and characterization of *Citrus yellow vein clearing virus* isolates from Chongqing and Yunnan, China
- P24 Current status of *Citrus chlorotic dwarf associated virus* disease in the eastern Mediterranean region of Turkey

#### 18:00-Session close

#### **WEDNESDAY - 13 APRIL 2016**

#### 8:10-15:40 Visit Citrus Research Institute (CRI) and field trip

- 8:10 Depart from Haiyu Hotspring Hotel
- 8:30-10:00 Visit CRI (Laboratories, diseases and virus-free nursery)
- 10:00-10:15 Coffee break (CRI Canteen)
- 10:15 Depart from CRI
- 12:00-14:00 Lunch provided by Changshou District Government (Lakeside Restaurant)

14:30-15:40 Visit standardized orchards and Citrus yellow vein clearing virus-infected lemons

15:40-17:20 Leave Changshou for Hongyadong, a traditional culture street at downtown

**18:00-19:30 Dinner** (Chongqing hotpot, Hongyadong)

19:30-21:00 Leave Hongyadong for Hotel (Night sightseeing on bus)

## THURSDAY - 14 APRIL 2016

**9:00-10:20** Oral session 7 (International Meeting Center, Haiyu Hotspring Hotel)

Chair: Nüket Önelge

9:00-9:40 Citrus viroids-research developments

**Georgios Vidalakis** (Department of Plant Pathology & Microbiology, University of

California, Riverside, USA) (Invited speaker)

9:40-10:00 The virus/vector relationship in the  $\it Citrus\ leprosis\ virus\ C$  pathosystem

Elliot W. Kitajima (LFN/ESALQ/USP, Brazil)

10:00-10:20 A novel citrus viroid found in Australia, tentatively named  $\it Citrus viroid \ \ VIII$ 

**Grant A. Chambers** (Elizabeth Macarthur Agricultural Institute, New South Wales Department of Primary Industries, Australia)

10:20-10:35 Coffee break

**10:35-11:35 Oral session 8** (International Meeting Center, Haiyu Hotspring Hotel)

Chair: Xuefeng Wang

10:35-11:15 Citrus psorosis virus: state of art

Maria Laura Garcia (University of La Plata, Argentina) (Invited speaker)

11:15-11:35 ihpCP sweet orange transgenic lines are resistant to psorosis A and psorosis B

**Agustina De Francesco** (Instituto de Biotecnologia y Biologia Molecular, Argentina) (IOCV sponsored young scientist)

11:35-12:15 Poster session 4 (International Meeting Center, Haiyu Hotspring Hotel)

P25 Investigating the TsnRNA-IIIb-induced citrus dwarfing mechanism

P26 One-step multiplex quantitative RT-PCR for the simultaneous detection of three regulated citrus viroids from different genera

P27 Identification of viroids in citrus orchards at Cukurova region in Turkey

- P28 Six-years experience with the high throughput robotic nucleic acid extraction and purification protocol for citrus diagnostics
- P29 Digital PCR for detection of citrus pathogens
- P30 Identification and molecular characterization of Citrus viroid VI isolates from China
- P31 The molecular variation of p23 populations of *Citrus tristeza virus* in sweet orange and grapefruit

#### 12:15-13:15 Buffet lunch

**14:00-16:00 Oral session 9** (International Meeting Center, Haiyu Hotspring Hotel)

Chair: Xiaochun Zhao

14:00-14:40 Genome-based molecular breeding of viral resistant silkworm

**Qingyou Xia** (State Key Laboratory of Silkworm Genome Biology, Southwest University, China) (Invited speaker)

14:40-15:00 Genome sequence of a new *Dichorhavirus* associated to citrus leprosis nuclear type disease

Juliana Freitas-Astúa (Embrapa Cassava and Fruits and Biological Institute, Brazil)

15:00-15:20 Plant defense mechanisms during the locally-restricted infection of  $\it Citrus \, leprosis \, virus \, \it C$ 

**Gabriella Dias Arena** (Centro APTA Citros Sylvio Moreira, Brazil) (IOCV sponsored young scientist)

15:20-15:40 Identification and functional analysis of wing development-related genes in the *Citrus tristeza virus* (CTV) vector *Toxoptera citricida* 

Feng Shang (College of Plant Protection, Southwest University, China)

15:40-16:00 Variability and sequence diversity of Citrus tristeza virus isolates from Pakistan

Sagheer Atta (Ghazi University, Pakistan) (IOCV sponsored young scientist)

16: 00-16:15 Coffee break

**16:15-17:45 IOCV Business meeting** (International Meeting Center, Haiyu Hotspring Hotel)

**18:00-18:45 Chinese traditional music and opera performanc**e (Golden Hall, Haiyu Hotspring Hotel)

**18:45-21:00 Conference banquet** (Golden Hall, Haiyu Hotspring Hotel)

## **FRIDAY - 15 APRIL 2016**

**8:30-9:50** Oral session 10 (International Meeting Center, Haiyu Hotspring Hotel)

**Chair:** Glynnis Cook

8:30-9:10 Applications of next generation sequencing in plant virology

**Mengji Cao** (National Center for Citrus Virus Exclusion, Citrus Research Institute, Chinese Academy of Agricultural Sciences, China) (Invited speaker)

9:10-9:30 QUANTIGENE PLEX: a non-PCR, high throughput, multiplex detection assay for

citrus pathogens

**Georgios Vidalakis** (Department of Plant Pathology & Microbiology, University of California, Riverside, USA)

9:30-9:50 Citrus virus detection in NGS data using E-probes

Hans Maree (Department of Genetics, Stellenbosch University, South Africa)

9:50-10:05 Coffee break

**10:05-11:05 Oral session 11** (International Meeting Center, Haiyu Hotspring Hotel)

Chair: Changyong Zhou

10:05-10:25 USA citrus clean plant network

Greg W. Douhan (Cooperative Extension Advisor, University of California, USA)

10:25-10:45 California's citrus nursery stock pest cleanliness program: a success story of the collaborative power of industry, university, and regulatory agencies

**Georgios Vidalakis** (Department of Plant Pathology & Microbiology, University of California, Riverside, USA)

10:45-11:05 Virus identification in citrus red mites (Panonychus citri)

**Xiaoqing Wang** (College of Plant Protection, Southwest University, China)

11:05-11:15 Closure

12:00-13:00 Buffet lunch

15:00-17:00 Free time/Leave for home/Visit Southwest University

# **SATURDAY-16 APRIL 2016**

Leave for home

# POST-CONF. INVESTIGATION

Fri. evening- 15 April to Tue. - 19 April

# FRIDAY EVENING- 15 APRIL 2016

18:40 Leave Haiyu Hotspring Hotel for Airport

20:55 Leave Chongqing on Flight PN6277 for Guilin

# **SATURDAY-16 APRIL 2016**

Visit the Elephant Trunk Mountain in Guilin and Guangxi Academy of Specialty Crops

Welcome dinner provided by Guangxi Academy of Agricultural Sciences

# **SUNDAY-17 APRIL 2016**

Cruise Li River to Yangshuo to visit kumquat orchards with mulch-covering cultivation
Impression Sanjie Liu show

## **MONDAY- 18 APRIL 2016**

Investigate well- and poor-managed orchards for HLB control in Lipu

Farewell banquet provided by Guangxi Academy of Specialty Crops

# **TUESDAY-19 APRIL 2016**

Leave Guilin for home

