



CIRAD TRAINING

MOLECULAR DETECTION OF SUGARCANE DISEASES

CIRAD organizes seminars in Montpellier for operators in the sugarcane supply chain who are faced with the established and emerging diseases of this crop, and who wish to use molecular methods to detect viruses and bacteria.

Training objectives

This training sets out to be practical; it takes place in a laboratory in which the detection tests are routinely carried out for CIRAD's sugarcane quarantine requirements. It will involve:

- Providing an overview of sugarcane diseases and pathogen detection methods.
- Carrying out the different types of detection tests on sugarcane viruses and bacteria.
- After the training, the participants will be able to adapt the methods used to the local conditions of their own country.

The work will focus on molecular methods for the detection of viral and bacterial diseases of sugarcane in quarantine, due to:

- SCYLV, *Sugarcane yellow leaf virus* [Luteoviridae]
- SCMV, *Sugarcane mosaic virus* and SrMV, *Sorghum mosaic virus* [Potyviridae]
- SSV, *Sugarcane streak virus* [Geminiviridae]
- *Leifsonia xyli* subsp. *xyli*
- *Xanthomonas albilineans*

Target audience

- Sugarcane quarantine managers
- Researchers and technicians from sugarcane research centres involved in plant pathology, variety selection, relations with the agroindustry
- Heads of phytosanitary bodies in sugarcane producing countries, etc.

Programme

Day 1 (9 am - 5.30 pm)

- Sugarcane worldwide and the impact of diseases on production
- Detecting and controlling sugarcane pathogens
- Study of nucleic acid extraction protocols
- Stem fingerprints

Day 2 (9 am - 5.30 pm)

- Virology course, principles of detection methods
- RNA extraction

Day 3 (9 am - 5.30 pm)

- DNA extraction
- SCYLV detection by RT-PCR
- Visualization of SCYLV and *L. xyli* subsp. *xyli* fingerprints

Day 4 (9 am - 5.30 pm)

- SSV detection by PCR
- Potyvirus detection by RT-PCR
- PCR primer design and sequencing

Day 5 (9 am - 5 pm)

- Reading *X. albilineans* fingerprints
- Technical issues, improvements to be envisaged in local conditions
- Presentation of Visacane
- Prospects

Practical aspects

- Training in English
- Instructors: international sugarcane experts, CIRAD scientists, lecturer from Montpellier SupAgro university
- Number of participants: 10 trainees maximum, divided into 2 groups
- Duration: 5 days (1 day of lectures and 4 days of practical work in the laboratory)
- Venue: CIRAD in Montpellier (France), Baillarguet campus

Next session

- 15 to 19 October 2018

For further information

CIRAD – UMR BGPI
Campus international de Baillarguet
TA A-54/K
34398 Montpellier Cedex 5
France
Tel : +33 4 99 62 48 60
isabelle.guinet@cirad.fr

Enrolment

CIRAD – UMR BGPI
Campus international de Baillarguet
TA A-54/K
34398 Montpellier Cedex 5
France
Tel : +33 4 99 62 48 40
Fax : +33 4 99 62 48 48
florence.barthod@cirad.fr

Price (2018 rates)

2,500 euros exclusive of tax per person, including:

- Contributions from international sugarcane experts and scientists from the CIRAD-INRA-Montpellier SupAgro "Biology and Genetics of Plant-Pathogen Interactions" joint research unit.
- All the practical laboratory work (including equipment).
- A document entitled "Molecular detection of sugarcane diseases" containing the lectures of the different instructors and the protocols for the methods used.
- The book "A guide to sugarcane diseases" (P. Rott, R. Bailey, J. Comstock, B. Croft, S. Saumtally).
- Lunch at the CIRAD canteen



> HOW TO REACH US

CIRAD – UMR BGPI – Baillarguet campus – Building K, office 152 – 34398 Montpellier Cedex 5



> WHERE TO STAY

Royal Hotel

<http://www.royalhotelmontpellier.com/>

(near the theatre on Place de la Comédie and the tram line)

> GETTING AROUND

From the airport: taxi or shuttle

From the railway station: tram line 1; take direction Mosson and alight at the Occitanie stop – take bus 23 to the CIRAD Baillarguet stop.

Website of the Montpellier transport service, TAM (bus timetables):

http://www.montpellier-agglo.com/tam/page.php?id_rubrique=278

> WHERE TO EAT

Lunches will be taken in the CIRAD canteen over the five days of training.

For evening meals, a large number of restaurants can be found in Montpellier old town.