ADVANCES AND CHALLENGES IN SUGARCANE PATHOLOGY: 
A REVIEW OF THE 2003 PATHOLOGY WORKSHOP

By

PHILIPPE ROTT1, JACK C. COMSTOCK2, BARRY J. CROFT3, ANUSORN KUSALWONG4 and SALEM SAUMTALLY5

1 Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), UMR BGPI, Montpellier, France
2 United States Department of Agriculture-Agriculture Research Service (USDA-ARS), Canal Point, FL, USA
3 BSES Limited, Queensland, Australia
4 Department of Agriculture (DOA), BKK, Bangkok, Thailand
5 Mauritius Sugar Industry Research Institute (MSIRI), Réduit, Mauritius

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Abstract

This paper summarises the activities of the International Society of Sugar Cane Technologists’ (ISSCT) Pathology Workshop held 11–16 May 2003, in Baton Rouge, Louisiana, USA. The workshop was attended by 37 delegates from 15 countries, and it began with 2 days of oral and poster presentations on various aspects of sugarcane pathology (detection and diversity of pathogens, host-pathogen interactions, epidemiology, control, new diseases). Contributions were grouped under five session topics: Sugarcane yellow leaf virus, other viruses, fungal diseases, bacterial diseases and other aspects of sugarcane diseases. Two days were then devoted to field trips and the delegates visited a commercial seedcane production facility and several research farms. The workshop ended with a general discussion session. Various ISSCT business matters were discussed (ISSCT web site, date and location of next pathology workshop). Updates on important disease problems and current research projects were also presented, and new common names suggested for several sugarcane diseases were approved. It was concluded that important and significant advances were made during recent years in sugarcane pathology, especially on yellow leaf caused by the Sugarcane yellow leaf virus. The workshop was followed by a post workshop tour in Florida (USA) from 19–20 May 2003. The theme of the post workshop was ‘Florida pathology: research programmes and industry’s disease concerns’. Ten participants from six countries attended the post workshop tour, which visited the Florida sugarcane industry and sugarcane research facilities.

Introduction

Sugarcane productivity can be maintained through steady efforts to enhance the varietal mixture (i.e. all varieties grown in an area at a given time) by introducing and/or producing new varieties. However, diseases were and remain limiting factors of sugarcane production (Ricaud et al., 1989; Rott et al., 2000).

Sugarcane crops are especially vulnerable to diseases because of various factors: propagation from cuttings facilitates the spread of pathogens, monocropping over large areas is favourable to the development of epidemics, and the pluriannual aspect of this crop lengthens and complicates breeding.

The 7th ISSCT Pathology Workshop held in Baton Rouge, Louisiana (USA) from 11–16 May 2003 was designed to address recent progress in the knowledge of sugarcane diseases and their control under the theme ‘Advances and challenges in sugarcane pathology’.

The workshop began with 2 days of scientific presentations. Two days were then devoted to field trips and the delegates visited the USDA Ardoyne research farm, the USDA Sugarcane Research unit in Houma, the Kleentek® seedcane farm, the Cameco research farm and the LSU AgCenter research farm at St. Gabriel.
Various ISSCT business matters were discussed during the fifth and last day of the workshop. The workshop was followed by a post workshop tour in Florida (USA) from 19–20 May 2003. The theme of the post workshop was ‘Florida pathology: research programmes and industry’s disease concerns’.

The workshop was attended by 37 delegates. Most of the world’s leading sugarcane pathology scientists were present. Participants included 14 from the USA [Florida (4 delegates), Hawaii (2), Louisiana (8)] and 23 from outside USA [Argentina (1), Australia (2), Brazil (3), Colombia (1), Ecuador (1), Fiji (1), France (5), Guatemala (1), India (1), Mauritius (2), Nicaragua (1), Philippines (1), South Africa (2) and Thailand (1)].

A total of 24 verbal and 9 poster presentations were made under 5 session topics. Posters were displayed during the meeting and were also introduced by a short verbal presentation after the end of each session. A discussion session was held after the verbal presentations of each session. Session topics and contributions were:

(i) Sugarcane yellow leaf virus (9 oral communications and 2 posters).
(ii) Other viruses (4 oral communications).
(iii) Fungal diseases (4 oral communications and 2 posters).
(iv) Bacterial diseases (3 oral communications and 5 posters).
(v) Other aspects of sugarcane diseases (4 oral communications).

This paper provides a general overview of the issues discussed by the presenters and participants during the individual sessions and during the general discussion session that ended the workshop.

Scientific presentations

**Sugarcane yellow leaf virus (SCYLV)**

This was the largest session devoted to a single sugarcane pathogen. Jack Comstock reported on the reliability of the leaf-midrib tissue blot immunoassay to detect *Sugarcane yellow leaf virus* and differences between cultivars in the rate of spread. Evidence was shown for a high number of false negative diagnostic assays in cultivar CP89-2143. Variable rates of disease spread between cultivars may reflect the type of resistance and will influence the effectiveness of using disease-free seedcane to control the disease. Jean Daugrosi presented results from Guadeloupe showing that infection of sugarcane by SCYLV was associated with high populations of *Melanaphis sacchari*, one of the vectors of SCYLV. Jeff Hoy reported on an increase of SCYLV in Louisiana. Incidence of the virus is low in Louisiana and rates of spread seem to be lower than those observed in some other sugarcane growing regions. The reasons for this situation are still uncertain.

Current status of SCYLV infection in commercial cultivars in sugarcane growing regions worldwide was described by Axel Lehrer. A general worldwide distribution of SCYLV was confirmed, but SCYLV was not detected in samples from Morocco. Rapid spread of the virus at several locations was noted. Infection rate varied with sugarcane cultivar and age of cultivar.

Jeff Flynn reported on field trial evaluations comparing disease levels and yields in Kleentek® (tissue-cultured plants) and traditional seedcane sources among several cultivars in southern Florida. Fields established with Kleentek® seedcane generally showed the highest yields and yield increases of Kleentek® material over traditional seedcane (hot water treated or not) were attributed to the impact of SCYLV. Yield reductions due to SCYLV in commercial production were also presented by Jorge Victoria, and cultivars showing the highest yield decrease in Colombia were not always those showing the highest infection rate.

Jorge Victoria also reported on resistance of sugarcane to SCYLV in Colombian cultivars. There was no correlation between the number of aphids (*Melanaphis sacchari*) per plant and virus incidence, nor between SCYLV particle concentration in plants and virus incidence. Cultivar CC85-92 showed outstanding resistance to both SCYLV and aphids. Jorge Victoria presented a third paper on transgenic plants based on cultivar CC84-75 resistant to SCYLV. Several transgenic lines containing the coat protein gene of SCYLV were free of the virus after inoculation in the greenhouse using the aphid vector *M. sacchari*. Resistant plants are now to be tested in the field. Michael Davis also reported on transformation of sugarcane with the coat protein gene of SCYLV. Transgenic lines resistant to the virus in the field were obtained with cultivar CP92-1666, but the transformation efficiency was low.

Axel Lehrer presented a poster on purification of SCYLV and antiserum production. Purified virus preparations were obtained from leaf and root tissues of sugarcane and were injected to rabbits. An antiserum against *Escherichia coli*-expressed virus coat protein was also made. Cross reactions were sometimes observed between plant tissues and the antisera but not with purified IgG. Samples of antisera were distributed to several workshop delegates for further testing.
Philippe Rott presented a poster on genetic diversity of SCYLV isolates from several countries and especially from Réunion. Several genotypes were identified among a world collection of SCYLV isolates and these were classified into two to four phylogenetic groups. Results suggested that SCYLV was introduced to Réunion from another country, and that one particular genotype evolved and spread on the island.

Other viruses

Three papers were presented on diversity of viruses causing mosaic. Jean-Claude Girard reported on the diversity of strains of Sugarcane mosaic virus (SCMV) in central Africa. Sequence data suggested that the isolates from Cameroon and Congo belonged to different phylogenetic groups. An inoculation experiment suggested that isolates from Congo were more pathogenic to R570 but this was not confirmed in a repeat experiment. There was some discussion on whether differences in aggressiveness in SCMV strains were observed in other countries. Some countries observed differences in variety reaction from that of other countries but the strain of the virus involved was not always known.

Mike Grisham reported on a survey of SCMV and SrMV (Sorghum mosaic virus) strains in Louisiana and how these have varied over time. SrMV strain I is now the dominant strain in Louisiana, with strain H being the next most common. Some collections did not match the known strains. Discussion centred on the identity of the new strains and that further work is in progress at USDA in Louisiana on identifying the new strains.

The incidence of the recently reported Sugarcane streak mosaic virus (SCSMV) in Asia was presented by Philippe Rott. A high proportion of samples showing mosaic symptoms from Bangladesh, India, Pakistan, Sri Lanka, Thailand and Vietnam were infected with SCSMV. SCSMV is a member of the Potyviridae family but is not a member of the Potyvirus genus. Antiserum and PCR primers designed for potyviruses do not react with SCSMV. The consequences of this new virus to international movement of sugarcane germplasm was discussed. It was suggested that the ISSCT Pathology Committee should coordinate a project to make available antiserum that will detect all known viruses causing mosaic in sugarcane to increase the safe movement of germplasm.

New techniques for screening clones for resistance to Fiji leaf gall were presented by Barry Croft. The techniques were based on inoculation of 4–5 month old plants with infective Perkinsiella planthoppers in a greenhouse. The question whether Fiji leaf gall was spreading to new locations was raised, but no one knew of any new spread of the pathogen.

Fungal diseases

Salem Saumtally reported on the characterisation of yellow spot (Mycovelloisella koepkei) and brown spot (Cercospora longipes) pathogens of sugarcane. Restriction digests of the Internal Transcribed Spacer (ITS) DNA region after PCR amplification did not reveal any polymorphism among 29 isolates of M. koepkei from Mauritius. Sequencing of this region confirmed that no variation was present. In contrast, the brown spot pathogen from Mauritius showed variability in symptoms induced on the same clone and cultural differences (colony morphology, pigment production, rate of growth) and pathogenicity. Genotypic variability was observed in the fungus after restriction enzyme analysis of the amplified ITS region.

Kushal Raj presented data on comparative performance of sugarcane genotypes to different pathotypes/isolates of the red rot pathogen. Different pathotypes of red rot (Colletotrichum falcatum) existed in different zones in India. Six pathotypes were used to inoculate 38 sugarcane genotypes. Eight genotypes had a differential reaction to the various pathotypes. The information obtained in this study will be useful to make the screening program more efficient and in the management of varieties in the different zones.

Kathy Braithwaite reported on genetic variation within a worldwide collection of sugarcane smut (Ustilago scitaminea) isolates. DNA from 38 smut isolates collected from Asia, Africa, South America, USA and Western Australia were prepared from single basidiospores. Genetic variation estimated from 12 AFLP primer combinations showed that overall there was little variation in the smut population across the world. However, isolates from Philippines, Taiwan and Thailand formed a distinct cluster.

Susan Schenck reported on the differentiation of races of U. scitaminea in Hawaii. Observations conducted in Hawaii showed 20% smut infection in the resistant cultivar H78-7750. A smut-assessment trial with 10 main Hawaiian commercial cultivars inoculated with the old isolate and the one from H78-7750 indicated a marked change in the reaction of some of the clones to the new isolate, possibly due to the appearance of a new race. A genetic study of smut isolates is being undertaken.

Barry Croft presented a poster on sugarcane smut incursion management in Australia. Quarantine regulations are being instituted to restrict smut to the north of Western Australia and prevent its spread to...
the east coast where the main sugarcane cultivation area of Australia (99% of production) is situated. Of the 700 clones being tested against smut in Indonesia, 70% are susceptible.

Barry Croft also presented a poster on the management of the orange rust epidemic in Australia. Orange rust (*Puccinia kuehnii*) is now considered the most damaging disease in Australia, whereas it was previously considered as a minor disease. Germination of spores of the pathogen falls below 97% RH and temperatures above 30°C.

The fungicides cyproconazole, tebuconazole, propiconazole and mancozeb were effective in controlling the disease, the best one being cyproconazole. Treated and untreated cane revealed losses between 11 to 29% tonnes sugar per hectare. A program is in place to replace the susceptible cultivars as quickly as possible.

**Bacterial diseases**

Asha Dookun-Saumtally reported on the characterisation of Sugarcane yellows phytoplasma (SCYP) from Mauritius. Based on RFLP analysis of the 16S rRNA operon of several isolates of SCYP from Mauritius, three distinct genetic groups were identified (SCYP1, 3 and 4). 16S rRNA fragments were cloned and sequenced and phylogenetic studies revealed that the SCYP1 phytoplasma was closely related to Stolbur phytoplasma, whereas SCYP3 and 4 were associated with Coconut lethal yellowing phytoplasma.

Kathy Braithwaite presented the work of Anthony Young and others who reported on the genetic analysis of Australian and international isolates of *Clavibacter (Leifsonia) xyli* subsp. *xyli*. Two molecular biology techniques were employed to investigate the genetic diversity among an international collection of strains of the ratoon stunting pathogen.

The techniques involved the use of PCR and the BOX primer set to produce DNA fingerprints of the strains, and the comparison of intergenic spacer (ITS) regions between rRNA genes by single-stranded DNA conformational polymorphism (SSCP) analysis. No variation was found among strains by either technique, indicating that the pathogen was genetically uniform regardless of geographic origin.

Additionally, these researchers reported that information obtained from the sequences of the ITS DNA was used to develop a highly specific PCR assay for detection of *C. xyli* subsp. *xyli*. The second paper on RSD presented by Jeff Hoy described the successful control of the disease in Louisiana through public and private sector partnerships based on the use of RSD-free seedcane produced commercially and marketed as Kleentek®.

Surveys from 1997–2002 indicated a decrease in the incidence of the disease that could be attributed primarily to the use of Kleentek®. Additionally, the control obtained with Kleentek® plants was more effective than the control obtained by heat treatment of seedcane.

Jean Daugrois reported on the aerial transmission of *Xanthomonas albilineans* in Guadeloupe. Strains of the leaf scald pathogen were found in free water on leaf surfaces early in the morning on sugarcane developing from disease-free tissue culture plants.

Interestingly, in one study a change in the prevalent serotype of the pathogen was observed over time, resulting in apparently more virulent serovar 1 strains replacing serovar 3 strains.

Laura Assumpção presented a poster on the comparison of the ITS regions of six different xanthomonad species pathogenic to sugarcane; she found very little variability. The method was not able to differentiate the false red stripe xanthomonad from that causing gumming disease.

However, in the poster presentation by Ana Carolina Marchiori, rep-PCR was reported to produce unique fingerprints for all six pathogenic xanthomonad species. Furthermore, rep-PCR was used to determine the population structure of the false red stripe pathogen in Brazil; only one profile was found, indicating uniformity within the pathogen.

Laurent Costet presented a poster on the genetic variability in xanthomonads pathogenic to sugarcane in Réunion and found RFLP analyses, using *avr* and *hrp* gene probes from other plant pathogenic xanthomonads, were useful for determining variation among strains of the gumming disease pathogen *Xanthomonas axonopodis* pv. *vasculorum*, but not *X. albilineans*. Several haplotypes were observed among the gumming disease pathogen but this genetic diversity could not be correlated with pathogenic diversity among the strains examined.

Carolyn Savario presented a poster on a study directed at elucidating factors associated with 'yield decline' in soils with a long-term sugarcane cropping history. Microbial communities varied between sites with a long-term sugarcane cropping history. Differences between the microbial communities were shown by culturing on different culture media and by examining the sole source carbon utilisation profiles of the communities.
Other aspects of sugarcane diseases

Barry Croft presented the results of a disease survey of the Nusa Tenggara province of Indonesia, the island bridge connecting Australia and New Guinea. Sugarcane smut and leaf scald were found on M44215 on Sumbawa. Mosaic-like symptoms were found on Sumbawa and Lombok but PCR-primers for SCMV detected the virus in only two of three samples. Also present were ratoon stunting (one plant) and there was a wide-spread occurrence of orange rust, chlorotic streak and eye spot. Any new pathogens that are introduced to New Guinea will threaten the wild germplasm on the island and may eventually spread to Australia.

Jacqueline Ramallo presented the status of the current sugarcane disease situation in Tucumán, Argentina. Ratoon stunting is a major disease causing losses on CP65-357. Brown rust is prevalent, but has not caused any detectable losses. Other diseases that are observed but cause no losses are red stripe, pokkah boeng, and brown stripe. Sugarcane yellow leaf virus has been detected. A disease-free seed program based on micro-propagation was initiated in 2000 to control ratoon stunting and other systemic pathogens.

Fe Dela Cueva presented the quarantine scheme initiated in the Philippines that is based on hot-water-treatment (24 h pre-soak and 3 h 50°C) and serological and polymerase chain reaction (PCR) assays. PCR assays are used to detect leaf scald, ratoon stunting, Sugarcane yellow leaf virus and Fiji leaf gall. ELISA is used to detect sugarcane mosaic and sorghum mosaic viruses.

Eder Giglioli reported on the expressed sequence project (SUCEST) in Brazil. Over 250 000 expressed sequence tags (EST) were determined in the sugarcane genome. These ESTs are sites in the genome that are being copied to produce the required enzymes for metabolic activities (growth, disease resistance, etc.).

The nucleotide sequences of these ESTs are being compared with the sequences of known genes in other plant species in DNA data banks to determine possible markers for disease resistance genes and/or other genes of interest.

Miscellaneous

ISSCT web site

Workshop participants suggested possible improvements for the ISSCT web site such as posting of workshop abstracts, a database (for growers and others) with sugarcane cultivars and their performance in each country (including disease resistance), distribution of sugarcane diseases in the world (the list described in the Guide to sugarcane diseases by Rott et al., 2000, should be updated).

Dates and locations for next pathology workshop

The possibility of a joint workshop with the molecular or breeding sections was discussed, and a joint pathology-breeding workshop was favoured by most participants. The next pathology workshop will probably be in late 2005 or early 2006. Several organisations offered to host the next ISSCT pathology workshop: Cana Vialis in Brazil, CENICA in Colombia (with the possibility to host a joint pathology-breeding workshop), Cirad in Guadeloupe [+ post workshop in another Caribbean island (Barbados?)], Cirad in Réunion [+ post workshop in Mauritius? Or subsequent pathology and molecular biology workshops in Réunion and Mauritius, respectively], MSIRI in Mauritius (in case of a joint pathology-molecular biology workshop).

Potential hosts were instructed to prepare their invitations for presentation to the Executive at the next Congress.

Sugarcane Pathologists' Newsletter and Email list of sugarcane pathologists

Delegates agreed to revive the Sugarcane Pathologists' Newsletter (SPN) but an electronic version appeared to be the only practical format for this newsletter. It could be emailed to members and posted on the ISSCT web site if ISSCT agrees. SPN should contain any relevant information regarding sugarcane pathology (including a list of recent publications) and each contribution should be limited to one page. It should be published two times per year. The pathology committee members will serve as editors of SPN but will need the help of other members. SPN subcommittees will be identified in the near future.

Brief up-dates on important disease problems and current research projects

The presence of delegates from different and various sugarcane producing locations was the opportunity to up-date information regarding disease situation and current research project in sugarcane pathology (detailed information can be obtained on the ISSCT web site: Annex II of the report of the VIIth pathology workshop). Since the last workshop, there have been two new reports of disease discovery: Leifsonia xyli subsp. xyli was found for the first time in Papua New Guinea, and Sugarcane streak mosaic virus (previously called Sugarcane mosaic virus strain F) was detected for the first time in Vietnam.

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New sugarcane disease and pathogen names

At the beginning of the workshop, the recommendations of the International Society of Plant Pathologists committee on Common Names of Plant Diseases were distributed to the workshop participants. An explanation of the reasons for the suggested name changes was presented by pathology section chair, Philippe Rott. The primary goal is to have a more informative name based primarily on symptoms that can be better understood among workers in different commodities. Comments on the suggested name changes were solicited from the workshop participants. Suggested new names are described in Table 1 and further information can be found on the website at:

http://www.isppweb.org/ccn.htm
or http://www.isppweb.org/names_common.asp.

The suggested new disease names were discussed and approved by all the workshop delegates.

A new name, Sporisorium scitamineum, was published to replace Ustilago scitaminea (Mycological Progress 1: 71–80, 2002) but this new name created controversy among several plant pathologists in the world. The future will tell if this new name will be used by plant pathologists, especially if Ustilago species from maize and other plants (barley are also transferred to the new genus Sporisorium.

Table 1—Recommended new names for sugarcane diseases.

<table>
<thead>
<tr>
<th>Pathogen</th>
<th>Disease</th>
<th>Name most used</th>
<th>Name recommended</th>
</tr>
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<tbody>
<tr>
<td>Xanthomonas sp.</td>
<td>False red stripe</td>
<td>False red stripe</td>
<td>False red stripe</td>
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<tr>
<td>Acremonium fucatum, A. implicatum, F. sacchari &amp; F. oxysporum</td>
<td>Wilt</td>
<td>Wilt complex</td>
<td></td>
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<tr>
<td>Capnodium sp., Fumago sacchari</td>
<td>Sooty mould (leaf sooty mould)</td>
<td>Sooty mould</td>
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<tr>
<td>Ceratoecystis paradoxa</td>
<td>Pineapple disease</td>
<td>Pineapple sett rot</td>
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<tr>
<td>Clypeoporthi illiu</td>
<td>Iliau</td>
<td>Leaf sheath binding</td>
<td></td>
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<tr>
<td>CORTICICUM ROLFSII</td>
<td>Red rot of the leaf sheath</td>
<td>Sclerotium sheath rot</td>
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<tr>
<td>Gibberella fujikuroi &amp; G. subglutinans</td>
<td>Pokkah boeng</td>
<td>Pokkah boeng</td>
<td></td>
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<tr>
<td>MYRIOGENOSPORA ACICULISPORA ?</td>
<td>Myriogenospora leaf binding</td>
<td>Leaf binding</td>
<td></td>
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<tr>
<td>PHYLLACHORA SACCHARI</td>
<td>Black leaf spot (tar spot)</td>
<td>Tar spot (black leaf spot)</td>
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<tr>
<td>Puccinia melanocephala</td>
<td>Common rust</td>
<td>Brown rust</td>
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<tr>
<td>Sclerotophthora macrospora</td>
<td>Sclerotophthora disease</td>
<td>Sclerotophthora stunt</td>
<td></td>
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<tr>
<td>basidiomycete</td>
<td>Australian basal stem, root and sheath rot</td>
<td>Basal stem, root and sheath rot</td>
<td></td>
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<tr>
<td>exobasidiale</td>
<td>Ramu orange leaf</td>
<td>Orange leaf</td>
<td></td>
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<tr>
<td>Sugarcane yellows phytoplasma (SCYP)</td>
<td>Yellow leaf syndrome</td>
<td>Leaf yellows</td>
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<tr>
<td>Fiji disease virus (FDV)</td>
<td>Fiji disease</td>
<td>Fiji leaf gall</td>
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<tr>
<td>Sugarcane bacilliform virus (SCBV)</td>
<td>Sugarcane bacilliform virus</td>
<td>Leaf fleck</td>
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<tr>
<td>Sugarcane streak mosaic virus (SCSMV)</td>
<td>Mosaic</td>
<td>Streak mosaic</td>
<td></td>
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<tr>
<td>Sugarcane yellow leaf virus (SCYLV)</td>
<td>Yellow leaf syndrome</td>
<td>Yellow leaf</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>Apex rot</td>
<td>Apex rot</td>
<td></td>
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<tr>
<td>Unknown</td>
<td>Leaf galls or pseudo-Fiji</td>
<td>Leaf gall</td>
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</table>

Post workshop tour

Ten participants from six countries attended the post workshop tour, which visited the Florida sugarcane industry and sugarcane research facilities. On 19 May, they visited the USDA-ARS Sugarcane Field Station, Canal Point, Florida reviewing the variety development and pathology programs and
observed the screening programs for ratoon stunting, leaf scald and mosaic resistance. On 20 May the participants observed mosaic, eye spot, smut, and leaf scald in grower fields and visited research plots at the Everglades Research and Education Center, University of Florida IFAS, Belle Glade, Florida and the Research Department of the US Sugar Corporation, Clewiston, Florida and their sugar refinery.

Conclusion

Important and significant advances were made during the last few years in sugarcane pathology, especially on yellow leaf caused by the Sugarcane yellow leaf virus. However, several diseases will continue to be a threat to sugarcane production. New diseases and new pathotypes or races of existing diseases will emerge. Pathologists will continue to join their efforts to improve their knowledge on sugarcane diseases and to reduce losses due to pathogens.

Acknowledgements

The Pathology Section Committee consisting of: P. Rott (Chairman, France), J.C. Comstock (USA), B.J. Croft (Australia), A. Kusalwong (Thailand), and A.S. Saumtally (Mauritius) thanks the members of the American Society of Sugarcane Technologists (ASSCT) who hosted the workshop. The Committee also thanks the Louisiana State University (LSU) Agricultural Center and the US Department of Agriculture Sugarcane Research Unit which collaborated in the hosting of the workshop and Professor Jeff Hoy who lobbied for the holding of the workshop in Louisiana.

REFERENCES


AVANCEES ET DEFIS EN PATHOLOGIE DE LA CANNE A SUCRE: UN BILAN DE L'ATELIER DE TRAVAIL 2003 EN PATHOLOGIE

PHILIPPE ROTT1, JACK C. COMSTOCK2, BARRY J. CROFT3, ANUSORN KUSALWONG4 et SALEM SAUMTALLY5

1Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), UMR BGPI, Montpellier, France
2United States Department of Agriculture-Agriculture Research Service (USDA-ARS), Canal Point, FL, USA
3BSES Limited, Queensland, Australia
4Department of Agriculture (DOA), BKK, Bangkok, Thailand
5Mauritius Sugar Industry Research Institute (MSIRI), Reduit, Mauritius

Résumé

Ce manuscrit résume les activités de l’atelier de travail en phytopathologie de la Société Internationale des Technologistes de la Canne à Sucre (ISSCT) qui s’est déroulé du 11 au 16 mai 2003 à Baton Rouge en Louisiane, USA. Trente sept délégués originaires de 15 pays ont assisté à cet atelier qui a commencé par deux journées de présentations orales et d’affiches sur divers aspects en pathologie de la canne à sucre (détection et diversité des agents pathogènes, interactions hôtes-agent pathogènes, épidémiologie, lutte, nouvelles maladies). Les Communications étaient réparties en cinq sessions: Sugarcane yellow leaf virus, autres virus, maladies fongiques, maladies bactériennes et autres aspects des maladies de la canne à sucre. Deux jours ont ensuite été consacrés à des visites au champ au cours desquelles les délégués ont visité une pépinière commerciale et divers domaines expérimentaux. L’atelier de travail s’est terminé par une session générale de discussions. Plusieurs sujets ont été débattus (site web de l’ISSCT, date et lieu du prochain atelier de travail en pathologie, candidatures pour le prochain comité en pathologie). Une actualisation des problèmes importants liés aux maladies de la canne à sucre et des projets de recherche en cours a aussi été présentée. De nouveaux noms suggérés pour plusieurs maladies de la canne à sucre ont été validés. Il a été conclu que des avancées significatives ont été réalisées au cours des dernières années en pathologie de la canne à sucre, notamment sur la maladie de la feuille jaune causée par le Sugarcane yellow leaf virus. L’atelier de travail a été poursuivi par un postatelier de travail en Floride (USA) du 19 au 20 mai 2003. Le thème de ce postatelier était « Pathologie de la canne à sucre en Floride : programmes de recherche et préoccupations de l’industrie sucrière ». Dix personnes en provenance de six pays ont participé à ce postatelier de travail qui a permis la visite de l’industrie sucrière en Floride et des établissements de recherche sur la canne à sucre.
AVANCES Y RETOS EN LA PATOLOGÍA DE LA CAÑA DE AZÚCAR:
UNA REVISIÓN DEL TALLER DE PATOLOGÍA DEL 2003
PHILIPPE ROTT1, JACk C. COMSTOCK2, BARRY J. CROFT3, ANUSORN KUSALWONG4
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PALABRAS CLAVES: Enfermedades, Detección, Diversidad, Interacciones Hospedante-Patógeno, Epidemiología, Control.

Resumen

Este trabajo resume las actividades del taller de patología de la Sociedad Internacional de Tecnólogos de la Caña de Azúcar (ISSCT) realizado entre el 11–16 mayo de 2003, en Baton Rouge, Luisiana, E.E.U.U. El taller contó con 37 delegados procedentes de 15 países, y tuvo 2 días de presentaciones orales y carteles relacionados con varios aspectos de la patología de la caña de azúcar (detección y diversidad de patógeno, interacciones hospedante-patógeno, epidemiología, control, y nuevas enfermedades). Las contribuciones se agruparon en cinco temas: Virus de la hoja amarilla de la caña de azúcar, otros virus, enfermedades producidas por hongos, enfermedades bacterianas y otros aspectos relacionados con enfermedades de la caña de azúcar. Luego se dedicaron dos días a visitas de campo, visitando una producción comercial de semilla y varias granjas dedicadas a la investigación. El taller terminó con una sesión de discusión general en donde se discutieron diversos temas relacionados con el ISSCT (portal de internet, fecha y localización de próximo taller de patología del ISSCT). Se actualizaron aspectos importantes de enfermedades y se discutieron proyectos de investigación actuales y aprobaron los nuevos nombres comunes sugeridos para diferentes enfermedades de la caña de azúcar. Se concluyó que significativos e importantes avances han ocurrido en los últimos años en patologías de la caña de azúcar, especialmente en la hoja amarilla causada por el Virus de la hoja del amarillo de la caña de azúcar. El taller continuó con un viaje a la Florida (E.E.U.U.) entre el 19–20 mayo de 2003. El tema del taller fue ‘Patología de la Florida: programas de investigación y dificultades de la industria con las enfermedades’. Diez participantes de seis países atendieron la visita a la industria de la caña de azúcar de la Florida y las instalaciones de investigación de la caña de azúcar.