



NEWSLETTER

Issue 45 – August 2016

FOREWORD

Time has come for CORESTA to convene its Members and fellow scientists from all over the world to its biennial Congress. This year will mark the 60th anniversary of CORESTA – much has been accomplished since the 24 founding organisations (state monopolies, government research institutes, extension services, a cooperative and a cigar company) from 18 countries decided to create an association dedicated primarily to leaf tobacco and its specific issues.

Times have changed, CORESTA has changed, the world has changed. This year's Congress location has also encountered a tremendous change. Whoever has seen Berlin years ago will not recognise it. Whoever has never visited Berlin will discover a vibrant, exciting city where everything has evolved in an invigorating manner. By all appearances, it seems that the Congress will gather many scientists at the Hilton, considering the record number of papers and posters received this year. For the first time in many years, a glance at the programme shows Agro-Phyto competing with Smoke-Techno in terms of numbers of papers presented. Four workshops are scheduled, including a plenary workshop covering all aspects of nicotine reduction and its consequences. The 2016 Congress promises to be another memorable CORESTA event. Preparations are well underway, and all efforts being made to bring to the fore the dynamic Congress theme "Bridging the gaps" emphasising the mission of CORESTA: to provide sound research results and methods to serve as a basis for science based regulations.

Nearly all the Sub-Groups and Task Forces have scheduled meetings prior to and during the CORESTA Congress, and all will be presenting reports, based on the Congress theme, during the event. These groups continue to produce robust recommended methods, reports and guides, as witnessed on the CORESTA website.

The CORESTA biennial General Assembly and Board and Scientific Commission elections are held during Congresses. This year, modifications to the Statutes and Rules will be proposed and administrative details are outlined in this Newsletter for your information.

CORESTA CONGRESS

Berlin, Germany, 9-13 October 2016

The 2016 CORESTA Congress will take place in Berlin in October under the theme "Bridging the gaps." It will once again be hosted by CORESTA with the assistance of a French event planner. The 2016 Congress will also be the opportunity to celebrate the association's 60th anniversary.

The Hilton Hotel is the Congress venue. It is ideally located on the Gendarmenmarkt Square in central Berlin, close to all transport and city sights. The hotel is well equipped to cater for all the Congress's technical and logistical requirements, and hotel guests will be accommodated in comfortable, spacious rooms with all modern amenities.

Detailed information concerning the Congress, including working programmes, online registration, accommodation and practical information can be found on the official Congress website at www.coresta2016.org



WORKING PROGRAMME

The response to the 2016 Call for Papers was overwhelming with 240 abstracts submitted. The CORESTA Reading Committee, comprising of members of the Scientific Commission, carefully reviewed all abstracts and had the difficult task of drafting a programme that would appropriately schedule all selected presentations. For the first time in many years, the Agro-Phyto Study Group submissions rivalled the numbers submitted to the Smoke-Techno Study Group and several concurrent sessions have been organised.

Authors were informed by email on 23 June of the Reading Committee selection and the full list of papers and draft Congress programme were published on the CORESTA website at www.coresta.org and on the official Congress website at www.coresta2016.org.

A total of 208 abstracts were selected for presentation:

- Agro-Phyto: 65 papers, 2 inter-group papers, 41 posters (Total: **108**)
- Smoke-Techno: 51 papers, 2 inter-group papers and 2 intergroup posters, 45 posters (Total: **100**)

Four Workshops are planned, with one as a plenary session (more information on next page) and CORESTA Sub-Group and Task Force Coordinators will, as usual, present reports on the activities of their groups.

Two keynote speakers have been invited to open the Congress:

- Dr. Delon Human is President and CEO of HEALTH Diplomats and previously Secretary General of the World Medical Association. He has worked with many global NGOs and international corporations on health care systems, strategy formulation, health communication and product development and will speak on harm reduction and opportunities for Next Generation Products in the context of the WHO Framework Convention on Tobacco Control.
- Dr. Jean-Louis Verrier, Breeding Manager at Bergerac Seed & Breeding and former Head of Tobacco Breeding and Pathology at Institut du Tabac - SEITA Imperial Tobacco, will speak on his experience on breeding new cultivars and seeds with regard to meeting leaf integrity and sustainability challenges.

Monday 10 October			
Agro-Phyto		Smoke-Techno	
PLENARY			
NEMATODES		BEITRAGE ZUR TABAKFORSCHUNG	
FUNGAL DISEASES		BIOMARKERS	
NUTRITION		SMOKELESS & HEATED TOBACCO PRODUCTS	

Tuesday 11 October			
Agro-Phyto		Smoke-Techno	
NICOTINE		METHODS	PRODUCT DESIGN
BIOTECH	MISCEL-LANEOUS - 1	CONSUMER BEHAVIOUR	IGNITION PROPENSITY
Agro-Phyto		Smoke-Techno	
Workshop EXTENSION & TRAINING		ECIG DEVICE PARAMETERS	STEWARDSHIP
Workshop NICOTINE			

Wednesday 12 October			
Agro-Phyto		Smoke-Techno	
CPAs	BREEDING	ECIG METHODS - 1	
TSNAs	MISCEL-LANEOUS - 2	Workshop TOXICANT CEILINGS	
Voting Delegates		All	
General Assembly Board & Sci. Comm. Elections		Posters	

Thursday 13 October			
Agro-Phyto		Smoke-Techno	
VIRUSES & BACTERIAL DISEASES		ECIG METHODS - 2	
SUSTAINABILITY		Workshop REFERENCE PRODUCTS	
Agro-Phyto		Smoke-Techno	
MISCELLANEOUS - 3		TOXICOLOGY	
PLENARY			

CHARACTERISING FLAVOURS – A Brainstorming Session

Outside of the official Congress programme and the various working group meetings, a specific workshop session will focus on the EU characterising flavours issue. European flavour companies will take the opportunity of the event in Berlin to come together to discuss the practical steps companies can take and whether this is an area in which CORESTA could have a supporting role, potentially leading to a new work item proposal. The session will be introduced with a presentation of the Tobacco Product Directive (TPD) regulation and the current status on implementing acts, and the moderated discussion will consider a number of key questions focussed on the opportunities and the need for action. The session, which is scheduled for Friday, 7 October, at 17:00 at the Berlin Hilton Hotel, is open to all interested parties.

WORKSHOPS

EXTENSION & TRAINING – Tuesday 11 October – 14:00

The increased demand for very high standards of integrity in tobacco leaf and for sustainability are driving implementation of various programmes for addressing production practices.

Scientific research provides the production sector with essential inputs such as new varieties resistant to the main tobacco diseases, new generations of more efficient and environmentally friendly Crop Protection Agents (CPAs) and more effective tobacco curing technologies.

Communicating the results of scientific research to growers and advising them on their implementation are essential parts of the process of addressing the challenges faced by the industry. This industry-wide programme is particularly challenging in the small-scale grower sector, which is very large and often with limited resources, access to information and essential inputs. The increase of direct contracting production systems opens a new and different phase in the dissemination of information on production practices, inputs and sustainable tobacco production programmes.

Field technicians and extension agents will have an increasingly important role in this process. It is essential that appropriate education and training programmes are in place to adequately inform and train them to effectively implement the extension programmes. These programmes are aimed at assisting growers to achieve sustainable levels of production of tobacco that meets industry standards of quality and integrity and that comply with the guidelines specified by sustainable tobacco production programmes.

The workshop will address extension and training from the perspective of a cigarette company intensively involved in vertical integrated tobacco supply operations, the sharing of the experience of a large and comprehensive extension and training scheme in Yunnan Province in China, and the description of tobacco extension programmes in North Carolina and Zimbabwe.

The presentations will be followed by a panel discussion to directly interact with the presenters with the aim of triggering debate on this challenging, stimulating topic.

NICOTINE – Tuesday 11 October – 16:00

Certain regulatory initiatives have been proposed to limit nicotine in tobacco products. There has been some discussion in the US, but the most comprehensive proposal to date has been set out by TobReg as part of the WHO's Framework Convention for Tobacco Control. (See: http://apps.who.int/iris/bitstream/10665/189651/1/9789241509329_eng.pdf).

Through this workshop we will explore the rationale for nicotine reduction, consider the implications and unintended consequences – especially for consumers and farmers, and discuss potential solutions and strategies for manufacturers and suppliers to achieve reductions, should they become necessary due to regulation. This issue touches most members of CORESTA in one way or another.

During the workshop invited speakers from within and outside CORESTA will ask:

- What is the rationale behind TobReg's "Global nicotine reduction strategy"?
- What does smoking behaviour tell us about the importance of nicotine to consumers of tobacco products?
- What will be the likely impact for tobacco farmers and leaf production?
- What are the most promising research options to achieve reductions of nicotine in tobacco leaf?

After the presentations, speakers will join a panel discussion to allow those attending the workshop to ask relevant questions.

TOXICANT CEILINGS – Wednesday 12 October – 10:50

Regulatory authorities are discussing the measurement of a number of harmful or potentially harmful smoke constituents, and this may eventually lead to the implementation of upper yield limits or ceilings for tobacco products. At this workshop, speakers will talk about toxicant ceilings and try to provide the audience with answers to questions, such as:

- What have different regulatory initiatives in common with respect to toxicant ceilings?

- Are suitable analytical methods available to measure toxicants?
- How does the variability of existing methods influence the test results?
- What can we expect from agronomy with respect to the lowering of yields in smoke?
- What are the environmental drivers?
- How does processing and product design influence the outcome?
- What will be the economic impact?

REFERENCE PRODUCTS – Thursday 13 October – 10:50

Evolving tobacco product regulation requires testing and characterisation of commercial tobacco products. The development of scientific methods to analyse these commercial products includes a need for appropriate reference and monitor tobacco products. This workshop will address questions such as:

- How are reference products manufactured?
- What is known about reference product variability?

- What role do reference products play in laboratory comparison?
- How are reference products used for testing in other regulated industries?

The workshop will also review the requirements for reference tobacco products, and include a discussion of the characterisation and variability of reference tobacco products compared to commercial products, as well as a discussion of appropriate uses in science and regulation.

BERLIN - A BRIEF HISTORY

There is no known date of foundation of Berlin but 1237 is given as the official date. The city emerged from two merchant communities, Berlin and Cölln, situated on either side of the Spree River. It is believed that Slavic peoples may have been the earliest settlers, possibly as early as the 6th century, and that the name Berlin may have come from the Slav words "birl" meaning "swamp", or "berli" that describes a rigid net submerged in the water to catch swarms of fish.

In 1307, Cölln and Berlin merged to fight against robber barons, "noblemen" who demanded huge tributes and terrorised the population. By the year 1411, Berlin had asked the Holy Roman Emperor for protection, and Fredrich von Hohenzollern, descendant of the Margrave of Nuremberg, and his army were sent to restore law and order (the Hohenzollerns proceeded to rule Berlin and most of Germany for centuries and worked to build their military and economic strength from Berlin).

The 14th century saw much of Europe's population decimated by the Black Death, which did not spare Berlin which was affected by the pandemic in 1350. In 1376 and 1380 fires destroyed much of the city and records of the city's early period. The Protestant Reformation swept fairly peacefully through Berlin in 1539, but the Thirty Years' War (the conflict between Catholics and Protestants) from 1618-1648 reduced Berlin to an insignificant town of 6000 inhabitants.

In 1671 Jews who had been expelled from Vienna were allowed to resettle in Berlin (Jews had been forbidden to settle in Brandenburg since 1572). In 1685, 6000 Huguenots from France settled in Berlin and in 1746 there was Scottish immigration after Bonnie Prince Charlie's rebellion.

The Industrial Revolution in the 18th century brought new factories and a further influx of settlers to the city from the surrounding countryside.

The Napoleonic Wars saw Napoleon pass through Berlin in 1806. His rule in Germany ended in 1812.



By 1871, the German states and parts of other European countries were brought together into one empire, the German Reich, by Otto von Bismarck and Wilhelm I, with Berlin as the capital. During the 19th and early 20th centuries, the city's population reached more than 4 million, attracting both industry and culture.

In 1914, the assassination of Archduke Franz Ferdinand triggered diplomatic decisions that led to World War I. Germany's defeat caused the German Revolution of 1918-1919. Riots in Berlin against the traditional imperial system saw the establishment of a democratic constitution in 1919, known as the Weimar Republic; Berlin remained the capital. Political instability was accentuated by economic problems caused by the Great Depression, but Berlin ironically prospered. In 1933, Hitler was appointed German Chancellor, marched thousands of troops into Berlin and imposed military rule. The Nazi headquarters were relocated to Berlin from Munich with the Gestapo (secret police) headquartered on Prinz-Albrecht-Straße. The 1936 Olympic Games were held in Berlin, but were overshadowed by war preparations. In 1938 Hitler annexed Austria and part of Czechoslovakia, and 1939 saw the outbreak of World War II. The Battle of Berlin in 1945 destroyed 75% of the city, and only 2,5 million of Berlin's 4 million inhabitants were left after the war ended.

Berlin was subsequently divided into four parts, with the Soviet Union, United States, Britain, and France

overseeing reconstruction. By 1948, the western allies controlled West Germany, and the Soviet Union had assumed control of East Germany. However, tensions escalated leading to the Soviet blockade of the city in 1949 and an airlift of food and supplies by the western powers. When the blockade ended, the country was officially divided into two separate entities. An uprising in East Berlin in 1953 was severely repressed. In 1961, the "Berlin Wall" was built, dividing the city in half. The western capital moved to Bonn, while the eastern capital remained in Berlin.

In 1989, with the collapse of communism, the Berlin Wall fell, and in 1994, the last foreign troops left Berlin. In 1999, the German Bundestag (legislature) relocated to Berlin and the city was once again declared the capital of Germany.

Berlin is today a peaceful, attractive, friendly city, at the cutting edge of modern development and cultural evolution. It has a population of 3.5 million and is the second largest city in the European Union.

More information on Berlin may be found at www.visitberlin.de.



Guild Seal of Berlin, 1280

CONGRESS ELECTIONS

Elections are held every two years during the CORESTA Congress to renew the CORESTA Board and Scientific Commission. CORESTA Member Organisations have a right to vote to elect new officials for both these executive bodies. As per the structural changes to the CORESTA Statutes in 2012, each CORESTA Member Organisation now holds a pre-defined number of votes depending on its membership category.

The Official Delegates of CORESTA Member Organisations will have received by email the Activity Report and Financial Report for the 59th and 60th Financial Years, an agenda for the General Assembly and a form for registering delegates to the General Assembly. Official Delegates who have not received these documents should contact the CORESTA Secretariat.

Renewal of the Board

The Board is responsible for managing CORESTA and defining CORESTA policy.

The Board consists of 10 elected Member Organisations and two to four co-opted Member Organisations. The elected members hold a four-year term of office, which is renewable, and co-opted members are in office for two years. In 2016, the tenure of eight companies expires (five elected and three co-opted). The vote will seek to elect five organisations. After the election, the newly elected Board will meet to co-opt two to four extra organisations to form a complete executive committee and will elect its President and Vice President.

The election to renew the Board will be held during the General Assembly on the afternoon of Wednesday, 12 October. A simple majority quorum is required. Each Member Organisation has the right to vote at the Board election. Proxies are accepted - however, a single Member Organisation voting delegate can represent no more than three Members at each election, i.e. their Member Organisation and two additional Members.

Member Organisations wishing to run for election to the Board should contact the CORESTA Secretary General, before 10 September 2016.

<p>Members elected in 2012 whose terms will expire in October 2016</p> <p>British American Tobacco (UK) China National Tobacco Corporation (China) Imperial Tobacco Ltd. (UK) Japan Tobacco Inc. (Japan) University of Kentucky (USA)</p>	<p>Members elected in 2014 (until 2018)</p> <p>delfortgroup AG (Austria) KT&G Corporation (South Korea) Reynolds American Inc. Services Co. (USA) SWM International, Inc. (USA) Universal Leaf Tobacco Company (USA)</p>
<p>Co-opted members whose terms will expire in October 2016</p> <p>Alliance One International (USA) Borgwaldt KC GmbH (Germany) Swedish Match North Europe Division (Sweden)</p>	

Renewal of the Scientific Commission

The Scientific Commission is responsible for leading and organising scientific and technical activities within CORESTA and acts as scientific counsel to the Board.

The Scientific Commission consists of a five person Executive Committee for each of the four Study Groups, i.e. 20 persons. They are elected *intuitu personae* which means they cannot be replaced by another person in case of absence, resignation, etc. They can serve up to three consecutive terms of office.

Elections will be held to elect the President, Secretary and three members (provided the General Assembly votes in favour of the proposed withdrawal of the co-option process currently in the rules). After the election, the incoming Scientific Commission members elect their new President and Vice President.

Similarly to the Board election, each Member Organisation has the right to vote at each Study Group election. Proxies are accepted, but a single Member Organisation voting delegate can represent no more than three Members at each election, i.e. their Member Organisation and two additional Members.

The elections for the renewal of the Scientific Commission will be held on the afternoon of Wednesday, 12 October, after the General Assembly and Board elections. **Participants interested in running for election to the Scientific Commission, or nominating candidates, are asked to contact the CORESTA Secretary General and provide a brief résumé.** Candidates must be able, willing and committed to fulfilling their obligations and must participate fully in the activities of the Study Group Executive Committee.

CORESTA INTERNAL STRUCTURES

CORESTA is an association ruled by French law. The governing bodies and main rules are described in three documents:

A. The Statutes

This document, amended several times since the inception of CORESTA in 1956, and most recently in September 2012, describes the general purpose of the association and the role of its governing bodies.

The governing bodies are:

- The General Assembly, which elects the Board and has many powers, including that of dissolving the association.
- The Board, which in practice runs the association and reports to the General Assembly.

Only fundamental elements are included in the Statutes.

B. The Internal Rules

The Internal Rules detail the procedures and dispositions needed to implement the Statutes. The latest version was approved in 2012.

The Internal Rules give full details on the rights and duties of the members, on the procedures to elect the Board, on the duties and empowerments of the Secretary General, and only summary indications on the existence and work of the Study Groups and Scientific Commission, which are detailed in the third essential document, as developed hereunder.

C. The Rules Governing the Functions of the Scientific Commission and Study Groups

The existence and need for this document is mentioned in the Internal Rules. This document has to be approved by the General Assembly. The latest version, also approved in 2012, describes in detail the role, composition and functioning of the Study Groups and Scientific Commission and the rules for the elections within the Study Groups. Additional documents on the functioning of the Sub-Groups and Task Forces have been produced by the Scientific Commission.

The above documents are being updated and amendments will be submitted for approval by the CORESTA membership at the Extraordinary General Assembly and Ordinary General Assembly to be held during the 2016 Congress on 12 October. Amendments will include:

- **A modification to the purpose and scope of the association, to refer to tobacco derived products**
- **The possibility to allow voting systems other than the current paper ballots**
- **A change to the election of members within the Executive Committee of a Study Group (no more co-options)**
- **Voting rights within Member Organisations**

Official Delegates of CORESTA member organisations will be informed in detail of the proposed changes.

CORESTA GUIDES

Update - CORESTA Guide No. 1

The Concept and Implementation of CPA Guidance Residue Levels

The Agrochemical Advisory Committee (ACAC) released the fourth issue of its Guide No. 1 on the CORESTA Guidance Residue Levels (GRL) list at the end of July 2016. This version replaces the third version published in July 2013.

Notable changes in the GRL list include five revised levels for azinphos-ethyl, chlorothalonil, dicloran, iprodione and phorate, and the removal from the list of 14 compounds that are no longer registered for tobacco in any country, are no longer used, and for which sources consulted show no detections over the last ten years. The list is comprised of 106 compounds, but as some include isomers and/or metabolites, 99 are listed with corresponding GRLs.

The summary and introductory text has been revised to explain more clearly that GRLs are a tool to assist and provide guidance for the interpretation and evaluation of agrochemical residue testing results and to serve as an indicator that Good Agricultural Practice (GAP) is being implemented. GRLs do not replace requirements to comply with regulations, neither on the use of agrochemicals, nor with regard to residue levels that may be detected. GRLs are designed to emphasise the importance of GAP for growing quality tobacco.

GRLs are applicable to cured tobacco leaf while focusing on processed tobacco leaf which is predominantly used for the production of traditional cigarette tobaccos and the GAPs associated with the cultivation of these tobacco types.

CORESTA SUB-GROUPS & TASK FORCES

AGRONOMY & LEAF INTEGRITY Study Group

Amendment to Objectives: Sub-Group TSNA in Air-Cured and Fire-Cured Tobacco (TSNA)

UPDATE

Updated Objectives:

1. To determine proper placement of data loggers in curing barns to best represent the true curing conditions within the barn and produce a CORESTA Guide on data logger placement and calibration.
2. Sampling
 - (a) To define proper sampling method of post-cure tobacco for TSNA determination.
 - (b) To determine the optimal method for sample preparation for TSNA determination.
3. To collect available TSNA presentations and papers and publish them on the CORESTA website.

The former second objective "To review the issues of post-cure tobacco storage and ventilation parameters" was dropped due to lack of activity and interest in the foreseeable future.

DISBANDED

Disbanded: Task Force Sustainability in Tobacco Production (SUST)

Following publication of the Guide No. 17, this Task Force (formed in 2012) has successfully completed its work and was disbanded by the Scientific Commission.

Change of Study Group: Sub-Group Agrochemical Analysis (AA)

UPDATE

The CORESTA Scientific Commission approved a proposal to move the Agrochemical Analysis Sub-Group from the Product Technology to the Agronomy and Leaf Integrity Study Group as the Sub-Group's activities were better suited to agronomy issues.

SMOKE SCIENCE Study Group

Amendment to Name and Objectives: Sub-Group *In Vitro* Toxicity Testing (IVT)

UPDATE

Updated Objectives:

1. To compile and review information on *in vitro* toxicity testing and apply learnings to further biological research.
2. To organise and conduct periodically proficiency testing of tobacco and tobacco related products.

The text "of Tobacco Smoke" was removed from the name of the Sub-Group and the objectives amended in view of harmonisation with other groups and to widen the scope of the group's activities.

Amendment to Objectives: Sub-Group Biomarkers (BMK)

UPDATE

Updated Objectives:

1. To review present knowledge of tobacco and smoking-related biomarkers of exposure and effect.
2. To undertake proficiency tests for selected biomarkers.
3. To source and develop reference materials to support biomarker analysis for those biomarkers selected for ring trials and proficiency tests.

The text "ring trials" was removed from the second objective as the focus of the group is on proficiency tests.

CORESTA REPORTS

The following report has been published on the CORESTA website:

- **3-HPMA Interlaboratory Comparison Study 2012**
Technical Report – July 2016 (Sub-Group Biomarkers)

Biomarkers are used in clinical studies to assess smoke constituent exposure in smokers and non-smokers and have recently been used in the evaluation of novel tobacco products. Due to the increasing interest in research on biomarkers of exposure, the CORESTA Biomarkers Sub-Group has undertaken interlaboratory comparison studies to investigate the robustness of current analytical techniques for the quantification of biomarkers. This report covers the first interlaboratory comparison study carried out on the urinary acrolein metabolite 3-HPMA (3-hydroxypropyl-mercapturic acid) due to its potential importance as a biomarker of exposure to acrolein in a tobacco context.

CORESTA SUB-GROUPS & TASK FORCES (continued)

PRODUCT TECHNOLOGY Study Group

Revised Objectives: Sub-Group Physical Test Methods (PTM)

UPDATE

Updated Objectives:

1. To develop and maintain CORESTA Recommended Methods (CRMs), pertinent to physical test methods related to tobacco products and their components.
2. To develop CORESTA Technical Reports and Guides for the application of physical test methods related to tobacco products and their components.
3. To organise, conduct and report on routine inter-laboratory studies in order to assess inter-laboratory consistency and to enable continual improvement of participating laboratories.

The original six objectives were condensed into three to better reflect the current and future activities of the Sub-Group.

Change of Group Type, Name and revision of Objectives: Sub-Group E-Vapour (EVAP)

UPDATE

Updated Objectives:

1. To identify areas of scientific research and conduct studies that will characterise e-liquids, e-vapour product emissions, and device properties and performance.
2. To develop and publish methods and guides.
3. To organise and conduct periodic proficiency/collaborative studies of identified constituents in e-liquids and e-vapour product aerosol.

The E-Cigarette (ECIG) Task Force was changed to a Sub-Group as its work and activities were viewed as being long-term. Its objectives were revised accordingly. The new scope being wider than e-cigarettes, and in line with the name of the newly created Sub-Committee 3 (Vape and Vapour Products) within ISO/TC 126, the group also changed its name to "E-Vapour."

Amendment to Objectives: Sub-Group Cigar Smoking Methods (CSM)

UPDATE

Updated Objectives:

1. To develop and update CORESTA Recommended Methods by investigating the technical problems associated with the mechanical smoking of cigars.
2. To conduct periodical collaborative studies in order to improve repeatability and reproducibility in different cigar sizes and types.
3. To establish confidence intervals for the smoke yields of all different cigar sizes.

The text "as requested by the Scientific Commission" was removed from the first objective as considered part of the regular process for all groups.

Revised Objectives: Sub-Group Smokeless Tobacco (STS)

UPDATE

Updated Objectives:

1. To propose and evaluate practical and robust Recommended Methods for the determination of smokeless tobacco analytes.
2. To periodically organise collaborative and/or proficiency testing.
3. To organise the manufacture and maintain smokeless tobacco reference products.

The Sub-Group's objectives were fully reviewed and amended to better reflect the focus of its activities.

CORESTA RECOMMENDED METHODS

New

- **CRM No. 83** – Determination of Ammonia in Mainstream Cigarette Smoke by Ion Chromatography (*July 2016*)

This method is applicable to the determination of ammonia in mainstream cigarette smoke as the ammonium ion, using IC with conductivity or suppressed conductivity detection. The CRM includes both sample collection techniques and separation and detection conditions. It additionally provides recommendations to laboratories regarding features that need to be controlled to provide data as robust and consistent as the repeatability and reproducibility data indicated. The CRM was produced through a full Collaborative Study involving laboratories using cigarettes manufactured from a range of blend styles that were smoked under both ISO and Health Canada Intense (HCI) smoking regimes.

Smoking Behaviour Sub-Group

The Smoking Behaviour (TSB) and Biomarker (BMK) Sub-Groups both held their mid-year meeting on 11 May 2016 in the exciting city of Paris, at the Gare de Lyon Novotel Hotel, by kind invitation of Imperial Brands and SODIM.

In accordance with the Smoke Science Study Group remit extension, the objectives of the TSB Sub-Group have been revised and updated.

1. Critique and review published papers on all aspects of tobacco and related products' use behaviour, and publish in peer-reviewed journals.
2. Examine unpublished reports and work on the subject with a view to recommending publication of suitable papers in peer-reviewed journals.
3. Identify gaps in total knowledge and suggest suitable work to provide the necessary information.

During the TSB meeting the results of the Collaborative Study of the Cigar Smoking Methods (CSM) Sub-Group were reviewed and discussed. Other important topics have been discussed such as key point of consideration for pharmacokinetics study or nicotine reduction review. A new work item proposal has been sent to the Scientific Commission with the aim to collate and publish on e-cig topography. Lesley Giles from JTI has agreed to step in and progress the "Review of Reduced Nicotine Content Cigarette Literature" and keep on watching brief and update the Sub-Group on Addictiveness / Attractiveness.

The TSB Sub-Group is actively looking to expand the activities to examine non-competitive issues surrounding public health, including: consumer risk perception, abuse liability, population use behaviour to predict transitions and modelling of public health impact.

Biomarkers Sub-Group

The Biomarker (BMK) Sub-Group meeting took place in the afternoon of 11 May 2016.

Prior to the spring meeting of the Sub-Group, in April 2016 the US FDA Center for Tobacco Products held a workshop on biomarkers of potential harm. In response to a call for presentations, a decision was made to highlight the work done by the BMK Sub-Group at that workshop. Consequentially Dr. Paul Nelson gave a presentation about CORESTA, which particularly focused on various collaborative projects undertaken by the BMK Sub-Group.

The BMK Sub-Group has three objectives:

1. To review present knowledge of tobacco and smoking-related biomarkers of exposure and effect.
2. To undertake ring trials / proficiency tests for selected biomarkers
3. To source and develop reference materials to support biomarker analysis for those biomarkers selected for ring trials and proficiency tests.

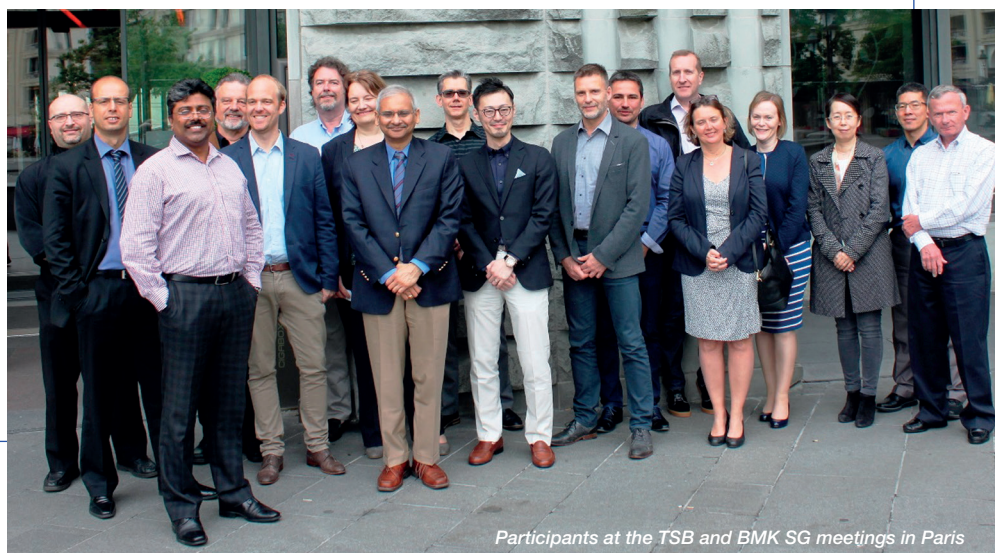
The Paris meeting discussions were centred around the above objectives, and significant progress was made in all three areas. Substantial discussion occurred on the methods to conduct a collaborative inter-laboratory comparison study on NNAL measurement in urine specimens. Given that NNAL is a key biomarker of tobacco exposure, the Sub-Group decided to conduct a comparative bioanalytical study. Several industry labs around the world, and a leading US academic laboratory agreed to participate in that study. Several tobacco companies have agreed to partly defray the costs associated with the reagents and shipping.

Dr. Krishna Prasad gave a presentation on the smoking behaviour system developed by BAT to study puffing topography and inhalation/exhalation patterns during smoking. Dr. Max Scherer provided an update on the status of a manuscript on bioanalytical methods to evaluate 3-HPMA in smokers (the study previously conducted by the BMK Sub-Group).

Since the reference materials used in bioanalysis are critical for accurate quantification of key analytes, the Sub-Group has been working on developing guidelines on Reference Standards. François Deschamps presented those draft guidelines and the member delegates made some suggestions. He has agreed to consider them and will generate a final document.

Other activities included discussion on potential projects and requests for membership updates.

The next TSB and BMK Sub-Group meetings will take place prior to the CORESTA Congress in Berlin, Germany, on 8 October 2016.



Participants at the TSB and BMK SG meetings in Paris

Cigarette Variability Task Force

Analytical scientists worldwide measure constituents in cigarette tobacco and smoke and there is variability associated with these measurements. This variability can be due to either analytical sources (e.g. different methodologies or laboratories) or the inherent variability of the commercial cigarettes (e.g. raw materials or machinery). CORESTA has and is continuing to effectively understand and minimise this analytical variability by creating consensus methods (CORESTA Recommended Methods) for measuring tobacco and smoke constituents through Sub-Groups such as Special Analytes, Routine Analytical Chemistry and Physical Test Methods. CORESTA has not historically addressed quantifying the variability associated with commercial cigarettes. In June of 2014, the CORESTA Scientific Commission approved the formation of the Cigarette Variability (CVAR) Task Force. The objectives of the CVAR Task Force are:

1. To develop an appropriate experimental plan to explore commercial cigarette variability
2. To conduct a collaborative study to enhance the understanding of overall tobacco and smoke analyte variability relevant to commercial cigarette design features
3. To create a CORESTA technical report

The CVAR Task Force, led by Jason Flora (Altria Client Services) and Rana Tayyarah (ITG Brands, LLC), held its most recent meeting in Lausanne, Switzerland, on April 27, 2016 (hosted by Philip Morris International). The meeting was attended by participants representing international cigarette manufacturers as well as machinery and raw material suppliers. The Task Force has completed the first objective and is well underway with the second. The experimental plan involves evaluating variability of commercial cigarettes in three phases of experimentation: short-term (within 1 week of production), mid-term (within 1 year of production), and long-term (across 3 years of production). Sample collection and analysis is complete for phase 1, short-term variability. Sample collection is complete for phase 2, mid-term variability, and sample analysis is in progress. Long-term variability sample collection will be complete in June 2017.



Jason FLORA
CVAR TF Coordinator



Rana TAYARAH
CVAR TF Secretary

Agrochemical Analysis Sub-Group

The Agrochemical Analysis (AA) Sub-Group annual meeting was held in Chiang Mai, Thailand, on 21-22 July 2016 kindly hosted by Alliance One International / Siam Tobacco Export Company (AOI-STEC) and with the kind contribution of Premium Tobacco.

40 participants from 14 different countries attended the two day meeting and a visit to the AOI-STEC CPA residue laboratory and the tobacco threshing plant.

The meeting agenda was very rich and focused mainly on the various activities of the Sub-Group during the year. A detailed report was given on the outcome of the 12th FAPAS-CORESTA Proficiency Test which included a sample spiked with 25 CPAs (Crop Protection Agents = agrochemicals) and a naturally incurred sample containing eight different CPAs. 25 laboratories from 18 countries took part in the 2016 Proficiency Test, which confirmed the continuous positive trend in the laboratories' performance observed since the beginning of the proficiency test scheme.

Two Joint Experiments Test Studies (JETS) on dithiocarbamates and maleic hydrazide have been completed and the results discussed at the meeting. Particularly important is the outcome of maleic hydrazide in relation to the ongoing discussion at the ISO/TC126 on several proposals for the review of the ISO Method 4876.

Several other presentations touched on various aspects related to analytical methods for specific compounds.

Reports on the various CORESTA activities on CPAs were also presented to inform laboratories of the forthcoming testing requirements by the tobacco industry.

The next Agrochemical Analysis Sub-Group meeting will be held in September 2017 in a location still to be confirmed.



Participants at the AA SG meeting visiting the AOI-STEC processing facility in Chiang Mai

CORESTA Scientific Commission and Board Meetings

The **SCIENTIFIC COMMISSION** met in Trier, Germany, in June, hosted by JTI.

- **Feedback was given from the Board meeting** in February, with strong support regarding Congress workshops to be prepared by the Science Communication Committee. A keynote speech was suggested to recall CORESTA achievements with regard to the tobacco crop since 1956.
- **ISO/CEN:** The adjusted scope of ISO/TC126 was adopted. ** A new Sub-Committee on Vape and Vapour Products (SC3) has been created, chaired by the French AFNOR and hosts two Working Groups: WG1 for determination of components in e-liquids, and WG2 for definition of a routine vaping machine, based on CRM81 and coordinated by CORESTA. ** CRM72 has been accepted as a New Work Item. ** ISO 19620 based on CRM75 TSNA in Smoke is nearing completion. ** CEN/TC 437 on e-cigarettes has launched its four Working Groups, on Definitions, Devices, Liquids and Aerosols.
- **ACAC:** Guide No. 1. (v4) was discussed for publication in July. ** CARD is growing and greatly assisted in the update of Guide No. 1. ** Decision was made to have CORESTA participate in the EU Commodity Expert Group on Minor Uses to assist with CPA registrations. ** Information on biocontrol products is being gathered.
- **Agronomy & Leaf Integrity:** Guide No. 17 on Sustainability was completed and published in April. ** The three-year round of the Residue Field Trials has brought important learnings and will be continued.
- **Phytopathology & Genetics:** The INRA developer of the Di@gnoplant application presented potential new features that will have to be investigated.
- **Product Technology:** The Agrochemical Analysis (AA) Sub-Group has been moved

to the Agronomy Study Group. ** The E-Cigarette (ECIG) Task Force has become the E-Vapour (EVAP) Sub-Group. ** Work on the 9th CORESTA Monitor has started.

- **Smoke Science:** CRM83 has been completed and circulated for publication. ** A CRM on aromatic amines is considered urgent.
- **Smoke Science / Product Technology (SSPT):** An SC ad-hoc group is seeking better efficiency with inter-connexions between working groups via the project mode. This should also give an opportunity to help younger scientists step in as leaders.
- **CORESTA Standards (STDS) Task Force:** The New Work Item Proposal (NWIP) system has been implemented and all projects now have a follow-up number.
- **CORESTA Website:** Further to the implementation of Phase 1, work on Phase 2 is well on track.

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The **BOARD** met in June in Lexington, KY, U.S.A., invited by the University of Kentucky Tobacco R&D Center.

- Prior to the meeting, a full day was dedicated to tobacco growing and curing, with visits to University farm, its barns, laboratories and farmers.
- Similarly to the two previous meetings, two Member Organisations had delegated executives to present their views on CORESTA and what can be achieved through collaborative work. For this session speakers were from the leaf side.
- More time was dedicated to discussing the workshops, their management and the speakers to be invited.
- Adjustments in Statutes and Rules to be proposed to the General Assembly were discussed and formalised, as well as the use of an electronic vote system.



Scientific Commission Meeting



Board Meeting



UPCOMING CORESTA MEETINGS (2016)

Meeting	Date	Location
Sub-Group Physical Test Methods (PTM)	7 October	Berlin, Germany
Sub-Group Routine Analytical Chemistry (RAC)	7 October	Berlin, Germany
Sub-Group Smoking Behaviour (TSB)	8 October	Berlin, Germany
Sub-Group Biomarkers (BMK)	8 October	Berlin, Germany
Sub-Group Special Analytes (SPA)	8 October	Berlin, Germany
Task Force CORESTA Standards (STDS)	8 October	Berlin, Germany
Task Force CORESTA Website (WEB)	8 October	Berlin, Germany
Task Force Cigarette Variability (CVAR)	8 October	Berlin, Germany
Sub-Group Agrochemical Residue Field Trials (RFT)	8 October	Berlin, Germany
Sub-Group Pest and Sanitation Management in Stored Tobacco (PSMST)	8 & 10 October	Berlin, Germany
Sub-Group <i>In Vitro</i> Toxicity Testing (IVT)	9 October	Berlin, Germany
Sub-Group E-Vapour (EVAP) (formerly Task Force E-Cigarettes (ECIG))	9 October	Berlin, Germany
Sub-Group Smokeless Tobacco (STS)	9 October	Berlin, Germany
Sub-Group TSNA in Air-Cured and Fire-Cured Tobacco (TSNA)	9 October	Berlin, Germany
Task Force Agro-Phyto Information Collection (APIC)	9 October	Berlin, Germany
Sub-Group Efficacy of Biological and Eco-Friendly CPAs (BIO)	9 October	Berlin, Germany
Sub-Group Collaborative Study Black Shank (BKS)	9 October	Berlin, Germany
Sub-Group Integrated Pest Management (IPM)	9 October	Berlin, Germany
Sub-Group Proficiency Testing for Detection of Transgenic Tobacco (GMO)	9 October	Berlin, Germany
Agrochemical Advisory Committee (ACAC)	9 October	Berlin, Germany
CORESTA CONGRESS	9-13 October	Berlin, Germany

OBITUARY – D. LAYTEN DAVIS



Dr. D. Layten Davis passed away peacefully on 30 April 2016.

A legend within the tobacco industry, Dr. Davis was co-editor of *Tobacco: Production, Chemistry and Technology*, considered as "the most comprehensive reference work on tobacco."

Dr. Davis grew up on a tobacco farm and went on to study agronomy, receiving a MS degree from Michigan State University and PhD from North Carolina State University. His professional career in tobacco research spanned over 50 years. He was a Professor of Agronomy at the University of Kentucky and later served as the Director of the Tobacco and Health Research Institute. He was Principal Research Scientist at R.J. Reynolds Tobacco Company for many years until his retirement in 2003, but he continued to work as a tobacco consultant until his death.

An international expert on tobacco varieties, Dr. Davis actively participated in CORESTA activities and was a frequent presenter at CORESTA meetings. He was a member of the CORESTA Agrochemical Advisory Committee from 1989-1997 and was awarded a CORESTA silver medal in 1998 in recognition of service to the association.

He will be remembered for his loyalty and dedication in all his endeavours, and particularly towards the tobacco crop. His common sense approach to challenges and his ability to clearly communicate his extensive scientific knowledge in layman's terms was valued and admired by all who knew him.

On behalf of its members, CORESTA would like to express its immense appreciation of Dr. Davis' invaluable contribution to tobacco science and offer its sincere condolences to his family and former tobacco industry colleagues.

