



# NEWSLETTER

Issue 54 – August 2019

## FOREWORD

*The SSPT2019 and AP2019 conferences are taking shape – the programmes have been set, delegates are registering, local logistics are being arranged and both events promise to be showcases of CORESTA's scientific excellence and networking potential. Two Workshops are planned during the SSPT2019 programme and a Sustainability Forum is being organised during both the SSPT2019 and AP2019 conferences. CORESTA is grateful to the organisers of the events for their tireless efforts to ensure that the standard of the association's gatherings remains at the expected high levels.*

*The evolution of the tobacco world and related developments have led CORESTA to form a number of new working groups. Recently created are the Task Forces 21<sup>st</sup> Century Toxicology for Next Generation Tobacco and Nicotine Products (NGTX), Consumer Reported Outcome Measures Consortium (CROM), Heated Tobacco Products (HTP) and the Collaborative Study of Low Nicotine Tobacco Agronomic Production Practices (LNTP) – the latter two being mentioned in this Newsletter.*

*CORESTA's scientific projects continue to gather momentum with a large number of new projects launched and several Technical Reports, Guides and revised Recommended Methods being published.*

*Of equal importance is CORESTA's continued visibility at external events. CORESTA representatives were present at the 2019 ENDS and GFN Conferences and at the ISO meeting.*

*Sadly, CORESTA has to once again bid farewell to a key contributor to the association's history and progress: Les Cousins, past President and active member of the Scientific Commission passed away recently and will be missed by all who knew him.*

## Joint Study Group Conferences 2019

**SSPT2019 - The Smoke Science and Product Technology Conference** will be held at the Hotel Hafen Hamburg in **Hamburg, Germany**, from **6–10 October 2019** and is being hosted by Borgwaldt KC and Sodim.

Registration and accommodation information is available on the official meeting website at <https://sspt2019.coresta.org>, and any queries should be sent to the event Secretariat at [secretariat-sspt2019@coresta.org](mailto:secretariat-sspt2019@coresta.org).

Online registration is available until 20 September.



**AP2019 - The Agronomy & Leaf Integrity and Phytopathology & Genetics Conference** will be held at the Elephant Hills Hotel in **Victoria Falls, Zimbabwe**, from **13–17 October 2019** and is being organised by the Zimbabwe Tobacco Research Board.

Meeting information can be found on the meeting website at <https://ap2019.coresta.org>. Queries concerning the event can be addressed to [secretariat-ap2019@coresta.org](mailto:secretariat-ap2019@coresta.org).

Online registration is open until 20 September.

## Joint Study Group Conferences 2019

### Reading Committee

The Reading Committee this year selected a total of 199 presentations.

The SSPT2019 working programme currently consists of 60 oral presentations and 72 posters. Workshops on 21<sup>st</sup> Century Toxicology for NGPs and Population Modelling will take place on Monday and Tuesday of the Conference, respectively, and a Forum on Sustainability will be held on Thursday, 10 October.

The AP2019 Working Programme has 52 oral and 15 poster presentations scheduled. An agro/phyto related Forum on Sustainability is being held on Tuesday, 15 October.

As in the past, Sub-Group and Task Force (SGTF) Coordinators are scheduled to present their usual group annual reports.

All authors were notified of the status of their abstract submission on 23 June, and the programmes and lists of papers are available from the CORESTA website at [www.coresta.org](http://www.coresta.org) and the official conference websites.

## SUSTAINABILITY FORUMS

In 2015, the United Nations published 17 Sustainable Development Goals (SDGs) and their corresponding targets to be achieved by 2030. The tobacco and alternative product sectors are likely to impact most of the goals. Consequently, it is important to measure these impacts in order to enhance the positive ones, and reduce the others. In 2018, CORESTA decided to support a project with the objective to identify available scientific tools for performance assessment from which a framework could be elaborated. 16 sectorial gaps emerged and each of them have been translated in proposals for guideline and method developments\*. The CORESTA Scientific



Commission decided to arrange two 2-hour discussion panels to exchange views on topics associated with four of these gaps. For each topic two introductory presentations will be followed by an open panel where all attendees will be encouraged to ask questions.

### SSPT2019 Discussion Forum - Hamburg, Thursday, 10 October

**Topic #1 – Tobacco and derived products: How to assess and position them against a risk continuum?** The aim is to discuss the key elements to be considered for potential reduced risk products and a possible risk assessment framework including these key elements, and to answer questions such as: How can two products be compared and differentiated along a scale of risk?

**Topic #2 – Carbon footprint and other GHG emissions along the tobacco and derived product supply chain: How to assess them?** The aim is to discuss the main sources of emissions which need to be addressed, how performance can be measured in the tobacco and alternative product sectors, and to answer questions such as: Why this is important and what can be done to improve performance?

### AP2019 Discussion Forum - Victoria Falls, Tuesday, 15 October

**Topic #1 – Conducting an audit of tobacco and derived products supply chains: What are the main principles and critical rules?** The aim is to discuss the general principles and rules for running a comprehensive and efficient audit, and to answer questions such as: What is important and specific to the tobacco sector? What does the audit reveal, and what improvements could be observed?

**Topic #2 – Projects and options for improving access to water: How to measure real improvements?** The aim is to discuss the issue in general and issues specific to the tobacco sector, and to answer questions such as: What are the objectives? What were the past projects undertaken, and how was the impact assessed?

\* a detailed report will be published in October 2019

## WORKSHOPS

### SSPT2019 – 21<sup>st</sup> Century Toxicology for Next Generation Tobacco and Nicotine Products – Monday, 7 October

The field of *in vitro* toxicology and biology has accelerated with the applications of computational approaches, robotics and advanced *in vitro* tissue systems. In 2007, the National Research Council outlined a modern approach for the assessment of consumer products, entitled 'Toxicity Testing in the 21<sup>st</sup> Century'. The conclusions included the use of human relevant assays based on using human cells, these assays being quicker, more cost effective and arguably having more relevance to humans than the current *in vivo* animal assays. These assays also utilise recent advances in sciences made in the last decade, with some also considered as part of Tox21 testing by governmental agencies in the USA.

In 2017 ICVAAM launched a 'roadmap' to support agile validation and acceptance of alternative pre-clinical approaches. With the increased availability of next generation tobacco and nicotine products (NGPs), the requirement of scientific studies to support regulatory approval, these 21<sup>st</sup> century approaches may be more suitable for the assessment of such products with less complex emissions. These assays are being applied in other industry sectors for screening of candidate drugs and prototype consumer products and may have great utility for NGP assessment.

This workshop intends to present the new NGTX Task Force, to introduce non-experts to the concepts of 21<sup>st</sup> century toxicology and how methods can be harnessed for NGP testing. Workshop presenters will introduce some of these emerging technologies and provide example applications. An overview of the concepts of 21<sup>st</sup> century toxicology and evolving *in vitro* approaches including high-content screening, applications of reconstituted organotypic 3D human tissue models and organ-on-a-chip approaches will be discussed followed by a general speaker Q&A session.

### SSPT2019 – Population Modelling – Tuesday, 8 October

As regulators consider the introduction of new tobacco products, such as tobacco reduced risk products, they need to consider the impact of such introductions on the population as a whole. Users and non-users of tobacco products need to be taken into account and the likelihood of harm versus benefits at the population level needs to be determined. This requires weighing the potential benefit to smokers who may gain from switching to a lower-risk product and potential damage to individuals who could potentially be harmed by the adoption of such a product. Statistical models and simulation programmes can be used to provide estimates of user trajectories, and therefore the health effects expected to result from changes in the distribution of exposure in a given population.

This workshop intends to introduce non-experts to computational modelling of tobacco product impacts on population health. It will include a non-technical introduction to modelling, and the presentation of models for tobacco product impacts. The panel of presenters will bring a regulatory and tobacco science perspective on the current state of modelling these unique tobacco products and the impact on current, and future, tobacco regulations.



## UPCOMING CORESTA MEETINGS / CONFERENCES (2019)

Meeting	Date	Location
SG PTM - Physical Test Methods	17 September	Munich, Germany
SG SMA - Smoke Analytes	5 October	Hamburg, Germany
SG PUB - Product Use Behaviour	5 October	Hamburg, Germany
TF HTP - Heated Tobacco Products	5 October	Hamburg, Germany
SG RAC - Routine Analytical Chemistry	5 October	Hamburg, Germany
SG BMK - Biomarkers	5 October	Hamburg, Germany
SG TTPA - Tobacco and Tobacco Products Analytes	6 October	Hamburg, Germany
TF CROM - Consumer Reported Outcome Measures Consortium	6 October	Hamburg, Germany
TF NGTX - 21st Century Toxicology for Next Generation Tobacco and Nicotine Products	6 October	Hamburg, Germany
SG EVAP - E-Vapour	6 October	Hamburg, Germany
SG CSM - Cigar Smoking Methods	6 October	Hamburg, Germany
SG IVT - In Vitro Toxicity Testing	6 October	Hamburg, Germany
<b>SMOKE SCIENCE and PRODUCT TECHNOLOGY</b>	<b>6-10 October</b>	<b>Hamburg, Germany</b>
INFESTATION CONTROL CONFERENCE (ICC)	7-8 October	Manila, Philippines
SG PSMST - Pest and Sanitation Management in Stored Tobacco	9-10 October	Manila, Philippines
SG BIO - Efficacy of Biological and Eco-Friendly CPAs	12 October	Victoria Falls, Zimbabwe
SG RFT - Agrochemical Residue Field Trials	12 October	Victoria Falls, Zimbabwe
SG TSNA - TSNA in Air-Cured and Fire-Cured Tobacco	13 October	Victoria Falls, Zimbabwe
TF LNTP - Coll. Study on Low Nicotine Tobacco Agronomical Prod. Practices	13 October	Victoria Falls, Zimbabwe
SG IPM - Integrated Pest Management	13 October	Victoria Falls, Zimbabwe
SG GMO - Proficiency Testing for Detection of Transgenic Tobacco	13 October	Victoria Falls, Zimbabwe
TF TAG - Tobacco Alkaloid Genetics	13 October	Victoria Falls, Zimbabwe
ACAC - Agrochemical Advisory Committee	13 October	Victoria Falls, Zimbabwe
<b>AGRONOMY &amp; LEAF INTEGRITY and PHYTOPATHOLOGY &amp; GENETICS</b>	<b>13-17 October</b>	<b>Victoria Falls, Zimbabwe</b>

## CORESTA Scientific Commission and Board Meetings

The **SCIENTIFIC COMMISSION** met on 6-7 June in Salvador da Bahia, Brazil, with support from Hail & Cotton and SindiTabaco-Bahia (see page 11).

- **Board:** The Secretary General reported on the process for his succession and confirmed that Dr Stéphane Colard had been selected and will officially take office on 1 November 2019.
- **Strategy:** SC President and Vice-President closely involved in the Board's strategy discussions. /// HTPs and Low Nicotine are high priority topics.
- **ISO/CEN:** The ISO/TC 126 Plenary Meeting sees CORESTA presenting on all its current activities and development, with participants able to select what is of interest for further ISO work. /// CEN/TC 437 is awaiting CORESTA's work on an e-cigarette reference device.
- **ACAC:** Liaison initiated with ECMA based on Guide No. 21. /// A manual for field technicians complementing Guide No. 19 on responsible use of CPAs expected by the end of 2019. /// Future challenges in tobacco crop production identified and actions discussed. /// Work on HHPs initiated.
- **Agronomy & Leaf Integrity:** Proposal for a working group on Low Nicotine Tobacco (see below). /// Many guideline documents under development or systematic review.
- **Phytopathology & Genetics:** Good progress in the BIO SG. /// New Coordinator sought for the Black Shank SG.
- **Smoke Science:** BMK/IVT SG collaboration initiated. /// Creation of new working group on toxicology for next generation products (see below).
- **Product Technology:** All cigar-related CRMs under revision and reference products considered.

/// Challenges in EVAP method development presented at ENDS and GFN conferences in June. /// CVAR TF work reaching completion, but issues in finding a journal for a publication.

- **Website:** Phase 3 under test with group executives.
- **Sustainable Development Goals:** based on Stéphane Colard's MBA project, four themes to be discussed at SSPT2019 and AP2019 Conferences (see page 2).

\* \* \* \* \*

The **BOARD** met on 19-20 June in Seoul, South Korea, kindly invited by KT&G.

- Regulatory issues discussed (FDA proposed NNN ceiling, new breeding techniques ...).
- A large majority of decisions made have been implemented. /// Committees (Strategy, Finance, Events, Science communication and IT) are fully operational and speed-up the Board's momentum.
- A top executive from KT&G R&D met the Board and commented on his company's expectations, needs and continuous support. Low nicotine and heated tobacco are high on their priority list and CORESTA work will be a "tremendous help".
- What works well in CORESTA and what can be improved was discussed. The closer collaboration between SC and Board has proven efficient and a joint meeting is being considered.
- Membership was a record high with 157 organisations invoiced in April and more labs and e-cigarette companies joining, despite a few resignations.
- One issue remains: no host identified yet for the 2021 conferences and 2022 Congress.

## CORESTA SUB-GROUPS & TASK FORCES

### AGRONOMY & LEAF INTEGRITY Study Group

**New Task Force: Collaborative Study of Low Nicotine Tobacco Agronomic Production Practices (LNTP)**

Objectives:

1. To determine the impact variety selection has upon nicotine levels.
2. To determine the impact of modified cultural practices on nicotine levels.

For more information please contact Marcos F. Lusso – Altria Client Services, USA  
([Marcos.F.Lusso@altria.com](mailto:Marcos.F.Lusso@altria.com))

### PRODUCT TECHNOLOGY Study Group

**New Task Force: Heated Tobacco Products (HTP)**

Objectives:

1. To establish standardised terminology and definitions that encompass all categories of Heated Tobacco Products (HTP).
2. To define one or more specific approaches and regimes for the generation and collection of emissions for Heated Tobacco Products (HTP).
3. To define and agree on priority compounds to be analysed (or not); review current CRM suitability, edit, or develop methods for Heated Tobacco Products (HTP).

For more information please contact Helena Digard – British American Tobacco, UK  
([helena\\_digard@bat.com](mailto:helena_digard@bat.com))

NEW

NEW

## CORESTA PROJECTS

The following projects were approved by the Scientific Commission and launched:

- **Project 211: 6<sup>th</sup> Round Robin Test on Air Permeability Calibration Standards**  
SG PTM - Physical Test Methods - Approved April 2019
- **Project 212: 8<sup>th</sup> Round Robin Test on Filter Ventilation Calibration Standards**  
SG PTM - Physical Test Methods - Approved April 2019
- **Project 213: Systematic Review of CORESTA Guide No. 6 on the Use of Balances for Cigarettes and Cigarette Related Products**  
SG PTM - Physical Test Methods - Approved April 2019
- **Project 214: Systematic Review of CRM 77 on the Determination of Diffusion Capacity**  
SG PTM - Physical Test Methods - Approved April 2019
- **Project 215: Systematic Review of CORESTA Guide No. 14 on Diffusion Capacity**  
SG PTM - Physical Test Methods - Approved April 2019
- **Project 216: Systematic Review of CRM 90 and corresponding Technical Report on Pouch Sealing Strength**  
SG PTM - Physical Test Methods - Approved April 2019
- **Project 217: 1<sup>st</sup> Collaborative Study on Air Permeability**  
SG PTM - Physical Test Methods - Approved April 2019
- **Project 218: CRM on Crush Strength of Flavour Capsules for Filters**  
SG PTM - Physical Test Methods - Approved May 2019
- **Project 219: 10-Year Stability Study of CRPs Manufactured in 2009**  
SG TTPA - Tobacco and Tobacco Products Analytes - Approved May 2019
- **Project 220: Routine Stability Study of CRPs Manufactured in 2016**  
SG TTPA - Tobacco and Tobacco Products Analytes - Approved May 2019
- **Project 221: Review of Emerging 21st Century In Vitro Toxicology Tools and their Potential Application for Tobacco and Nicotine Product Testing**  
TF NGTX - 21st Century Toxicology for Next Generation Tobacco and Nicotine Products - Approved May 2019
- **Project 222: Review of CORESTA Report 1991-1 on Smoking Methods**  
SG RAC - Routine Analytical Chemistry - Approved May 2019
- **Project 223: Collaborative Study of B[a]P in Cigarette Mainstream Smoke under Health Canada Intense Smoking Regime**  
SG SMA - Smoke Analytes - Approved June 2019
- **Project 224: 2019 Collaborative Study of CORESTA Monitor 9 (CM9)**  
SG RAC - Routine Analytical Chemistry - Approved June 2019
- **Project 225: CORESTA In Vitro Test Battery for Combustible Tobacco Products: Update from the 2004 Rationale and Strategy Report**  
SG IVT - In Vitro Toxicity Testing - Approved June 2019
- **Project 226: Collaborative Study of Low Nicotine Tobacco Agronomic Production Practices**  
TF LNTP - Collaborative Study of Low Nicotine Tobacco Agronomic Production Practices - Approved June 2019
- **Project 227: Revision of CORESTA Guide No. 5 Technical Notes #02-#05**  
SG AA - Agrochemicals Analysis - Approved June 2019
- **Project 228: B[a]P, VOCs and Carbonyls in Smoke**  
SG SMA - Smoke Analytes - Approved July 2019
- **Project 229: Revision of CORESTA Guide No. 8 on CORESTA Monitor Test Piece Production and Evaluation Requirements**  
SG RAC - Routine Analytical Chemistry - Approved July 2019
- **Project 230: Presentation “UN SDGs - CORESTA Contributions and Opportunities” at Tobacco Workers Conference, January 2020**  
CORESTA - Approved August 2019
- **Project 232: Update of CRM 75 on Determination of TSNAs in Cigarette Smoke**  
SG SMA - Smoke Analytes - Approved July 2019
- **Project 234: Presentation at ENDS2019 USA, Arlington, VA, USA, Dec 2019**  
SG EVAP - E-Vapour - Approved August 2019
- **Project 236: Poster Presentations at FDA Standards Day, Silver Spring, MD, USA, Oct 2019**  
CORESTA - Approved August 2019

## CORESTA GUIDES

### New - CORESTA Guide No. 25

Aerosol Collection and Considerations when Testing E-Vapour Product Technologies  
(May 2019) [EVAP-084-CTG-25]

This Technical Guide provides a list of considerations for potential collection strategies, and combination thereof, representing some of the typical challenges faced when collecting e-vapour aerosol samples for analytical testing and should be considered in conjunction with the purpose of the testing being conducted. It is applicable for current and emerging e-vapour product devices and technologies, and complements the CRM 81 and the Technical Guide No. 22.

### Revision - CORESTA Guide No. 14

A User Guide for the Determination of the Diffusion Capacity (D\*) of Cigarette Papers  
(June 2019) [PTM-215-CTG-14]

CORESTA Guide No. 14 is intended as a reference for the manufacturers of cigarette papers and cigarettes as to the best practice for the measurement of diffusion capacity of cigarette papers, so as to consistently obtain the most accurate and reliable measurements. Together with CRM 77, which it supports, it was subject to a periodic technical and editorial review by the CORESTA Physical Test Methods (PTM) Sub-Group; a new section (Section 6) on potential improvements of the measurement process was added.

CORESTA Guides are available in PDF format at [www.coresta.org](http://www.coresta.org)

## CORESTA REPORTS

The following reports have been released and published on the CORESTA website at [www.coresta.org](http://www.coresta.org):

- **2016 Collaborative Study of Humectants - Determination of Glycerol and 1,2-Propylene Glycol in Tobacco**

Technical Report [RAC-051-1-CTR] – May 2019 (Sub-Group Routine Analytical Chemistry)

In 2015, the Routine Analytical Chemistry Sub-Group (RAC) proposed amending CRM 60 to increase the extraction efficiency of the GC method. In 2016 a collaborative study was conducted to allow the repeatability (r) and reproducibility (R) to be calculated for the proposed revised method and to compare the results to those obtained using CRM 61. This report summarises the findings of the study, which shows that the r&R data obtained for the revised CRM 60 are comparable to that obtained previously for both the GC (CRM 60) and LC (CRM 61) methods undertaken in previous studies. CRM 60 was updated, but due to the low number of participants that used the LC technique for this study an update of CRM 61 was not planned.

- **2018 Collaborative Study for CRM65 Update of Repeatability and Reproducibility**

Technical Report [CSM-121-0-CTR] – May 2019 (Sub-Group Cigar Smoking Methods)

The purpose of this collaborative study was to provide updated nicotine free dry particulate matter (NFDPM) repeatability (r) and reproducibility (R) data for the revised CRM 65 that would support the new sampling plan of one or two test pieces per result instead of the current eight test pieces per result. The results supported revising the sampling plan and r&R tables of CRM 65, and the data can also be used to update CRMs 66, 67 and 68.

- **Cigar Smoke Analysis - 13<sup>th</sup> Collaborative Study**

Technical Report [CSM-160-CTR] – May 2019 (Sub-Group Cigar Smoking Methods)

Since 2006, the CORESTA Cigar Smoking Methods Sub-Group conducts periodic collaborative studies in order to improve repeatability (r) and reproducibility (R) measurement methods of different cigar sizes and types. This 13th collaborative study was conducted on cigars smoke to re-establish mean values for NFDPM, nicotine and carbon monoxide for different sizes and types of cigar products and test pieces, and to provide a tool for participating laboratories to prove competence in cigar smoke analysis.

- **Collaborative Study on Sealing Strength of Pouch Materials (revised)**

Technical Report [PTM-216-CTR] – June 2019 (Sub-Group Physical Test Methods)

This collaborative study was carried out in order to determine repeatability (r) and reproducibility (R) statistics of the method CRM 90 and the first report published in March 2019. This revised version contains some additional data not included in the original version.

## CORESTA RECOMMENDED METHODS

### Updated - CRM No. 60

Determination of 1,2-Propylene Glycol and Glycerol in Tobacco and Tobacco Products by Gas Chromatography  
(Fourth edition – June 2019) [RAC-051-2-CRM-60]

This method is applicable to the determination of propylene glycol (PG) and glycerol (GLY) in tobacco and tobacco products, including smokeless tobacco and cigarette filler. The update of the CRM is based on the Technical Report *2016 Collaborative Study of Humectants - Determination of Glycerol and 1,2-Propylene Glycol in Tobacco*, June 2019.

### Updated - CRM No. 77

Determination of Diffusion Capacity by Measurement of CO<sub>2</sub> Transfer Rate Through Materials Used as Cigarette Papers and Cigarette Papers having an Oriented Zone of Reduced Diffusion Capacity  
(Second edition – June 2019) [PTM-214-CRM-77]

This CRM was put through the systematic review process and a few minor adjustments were made by the Physical Test Methods Sub-Group.

### Updated - CRM No. 90

Determination of Dry and Wet Sealing Strength of Pouches for Smokeless Tobacco and Derivative Products – Definitions and Measurement Principles  
(Second edition – June 2019) [PTM-216-CRM-90]

The update of this CRM includes revised repeatability ( $\tau$ ) and reproducibility (R) data based on the updated results of the collaborative study published in the Technical Report *Collaborative Study on Sealing Strength of Pouch Materials*, June 2019.

All CORESTA Recommended Methods can be downloaded in PDF format at [www.coresta.org](http://www.coresta.org)

## TSNA in Air-cured and Fire-cured Tobacco Sub-Group

Nitrosamines are a common chemical in many consumer products, as an ingredient during manufacture or as a by-product of processing. Foods that have been shown to contain nitrosamines include cured meats, beer, some cheeses, non-fat dry milk and occasionally fish. Non-food products that may contain nitrosamines are latex and make-up. There are nitrosamines that are only found in tobacco, and hence are known as Tobacco-Specific NitrosAmines (TSNAs). There are four predominant TSNAs: NNK, NNN, NAT and NAB, although only the first two are biologically active carcinogens.

There are many factors that affect the level of TSNAs in the final manufactured product and the tobacco industry has made a considerable effort in the recent past to reduce the level at every opportunity. The CORESTA TSNA Task Force was established in 2002 with the broad objective of coordinating information and organizing collaborative studies that could lead to reducing TSNA levels. In 2006, the Task Force was changed to a Sub-Group because the work that was required was on-going.

The first project proposed was to develop a standardized method for analysing TSNAs that was then taken over by the Smoke Chemistry Sub-Group and is now CORESTA Recommended Method No. 62. The priority then became to screen seed to reduce the propensity for nornicotine, the precursor of NNN, to form. In 2009, the Sub-Group agreed that CORESTA should adopt the LC Protocol™ developed by the University of Kentucky as the recommended method.

A review of heating and ventilation to reduce TSNA in air-cured barns was completed in 2004, and a protocol for collecting samples was compiled in 2005; these methods were used in a 2006 study of on-farm storage conditions. An M.Sc. level study on the effect of temperature and humidity during air-curing of burley and dark tobacco was sponsored in 2012 by CORESTA and the publication of the results was attributed to the Sub-Group. Best practice protocols have been written (CORESTA Guide No. 23) for placement of data loggers in curing barns and for maintenance and calibration of these instruments.

Work is on-going to develop a CORESTA recommended sampling method for estimating the TSNA in farmer bales and also a protocol for drying samples that will be tested for TSNA.



Colin FISHER  
TSNA SG Coordinator

## Smoke Analytes Sub-Group

In 2019, the Smoke Analytes Sub-Group (SMA SG) celebrates its 20<sup>th</sup> anniversary. This is also an opportunity to reflect on what the SG has achieved. The group was established in 1999 as the Special Analytes (SPA) Task Force and in 2006 developed into the SG. The SG was focused on collaborative development of CORESTA Recommended Methods (CRMs) for selected mainstream cigarette smoke constituents in response to regulatory developments. In 2017, the SG changed its name to Smoke Analytes (SMA) and its objectives were expanded to include all combustible products and interlaboratory testing.

Since 1999, SMA has developed seven CRMs for selected mainstream smoke constituents (benzo[a]pyrene, TSNAs, selected volatile organic compounds, carbonyls, phenolics and ammonia) for both ISO 3308 and intense smoking regimes. The ISO 3308 parts of the CRMs (except ammonia and phenolics) were developed by ISO TC126 into ISO standards. In 2018, the ISO intense smoking regime was published (ISO 20778/9) and all seven CRMs are currently under the standardisation process for this regime. CRM development always results in valuable learnings especially useful when implementing the methods. These were captured in various documents: four peer-reviewed manuscripts in *Beiträge zur Tabakforschung*, two CORESTA technical reports and CRM notes.

Two large scale data mining exercises were carried out in 2006 and 2010 to investigate the yields from Reference Cigarettes when in-house methods were used, and the main findings were published in *Beiträge zur Tabakforschung*. The studies demonstrated variability of the yields when different methodologies were used and indicated potential causes of these differences. The learnings gave the SG a direction for the next CRM development.

In the last three years SMA has worked on the development of a CRM for the measurement of aromatic amines in mainstream smoke. Despite significant efforts from the participating laboratories and follow up investigations, the repeatability and reproducibility were higher than can be supported and work has been suspended. The valuable learnings will be summarised in technical reports.

Recent revision of SMA objectives led to a broadening of the scope of activities – inclusion of cigar emissions as a new matrix and a focus on interlaboratory testing in combustible space. For cigar emissions, a collaborative study is in progress assessing applicability of the existing cigarette CRMs for benzo[a]pyrene and TSNAs to small machine-made cigars.

SMA has actively collaborated with the University of Kentucky Center for Tobacco Reference Products on an opportunity to extend the scope of their Proficiency Testing program to include additional analytes. A pilot study on hydrogen cyanide and NO<sub>x</sub> is in progress and due for completion later in 2019. This will not only help as external quality control for participating laboratories but also to decide on the candidate analytes/methods for future CRM developments.

The most recent SMA meeting was in Richmond, Virginia, USA, in April 2019 (*photo below*). The next meeting will be held before the Smoke Science-Product Technology Conference in Hamburg, Germany. Many thanks to all participants for all their hard work and enthusiasm!



Jana JEFFERY  
SMA SG Coordinator



Rana TAYYARAH  
SMA SG Secretary



The Smoke Analytes Sub-Group members



## Heated Tobacco Products Task Force – Kick-off Meeting, 12 June 2019, London, UK

Before giving the floor to Helena Digard, Pierre-Marie Guitton, the CORESTA Secretary General, presented on behalf of CORESTA his thanks to her for taking the lead of the Task Force with enthusiasm, and organising this meeting in a short time after the workshop was held in Paris in March, with some of the current attendees. He also thanked Jason Flora and Maxim Belushkin for their involvement in the work to be launched.

After Helena presented the agenda of the meeting, Jutta Pani (Product Technology Member of the Scientific Commission) provided feedback on the Scientific Commission (SC) meeting held the week before. She expressed full support from this body to the Task Force executives, in case any issue were to arise. Depending on where future meetings are held, either Jutta Pani or Rob Stevens (Vice-President of the SC) would be the liaison with the SC.

Helena led the first round of discussion, which focused on Objective 1: Definitions and Terminology, considering the vast diversity of current names/acronyms and types of products and heating systems (electronic, carbon, hybrid). Attendees brought comments and inputs, making sure a door was left open for future evolutions of these new forms of tobacco products. All agreed that these products must not be considered as cigarettes.

Objective 2: Aerosol Generation and Collection, was presented and moderated by Jason Flora. A number of regimes can be found in literature, from various sources, manufacturers, regulators or independent researchers. Several criteria have to be harmonised, from conditioning to ventilation, product design, regulatory issues and side stream. It is likely that different puffing regimes specific to HTP sub-categories may be needed (electrically heated, carbon heated, and aerosol heated HTPs). Considering the similarity of the aerosol with that of e-cigarettes, the work on a reference product in the E-Vapour Sub-Group (EVAP) may provide valuable learnings, however aspects specific to HTPs must be considered.

After presenting the regulatory landscape for HTPs, Maxim Belushkin launched discussion on Objective 3: Priority compounds to be analysed and current CRM suitability. Methods will have to consider possible innovation in product design. There may be additional compounds to be considered and possibly regulated. Markers specific to combustion such as CO, NO, NO<sub>x</sub> can be helpful to differentiate some types of HTPs from combustible cigarettes. The topic of leachables may have to be revisited at a later stage. Focus should be on differentiation, based on the fact that

there is little to no combustion and HPHCs are significantly lower than for conventional cigarettes. Differentiation should also be based on research to support comparative assessments of HTP emissions and cigarette emissions. Combustion itself (and absence thereof) may need to be defined. Again, EVAP methods may provide valuable learnings but aspects specific to HTP must be taken into account.

Breakout groups were then formed for more in-depth discussion on the challenges and processes to accomplish the three work stream objectives. Feedback was given from each of these groups in the plenary session. The definitions turned out to be more difficult than expected and more discussion will be needed to reach a consensus (even the HTP acronym may need to be changed to cover all product categories). The aerosol generation and collection group listed the numerous challenges to be faced specifically in each sub-category of HTPs. The group working on method prioritization defined three development terms: 12, 36 or more months. Based on the list of analytes, they will check whether CRMs or other methods are available and review them to check suitability and decide work to be done.

All were highly devoted to making the Task Force efficient and brought homework back to prepare for the next meeting to be held in Hamburg on 5 October prior to the SSPT2019 Conference.



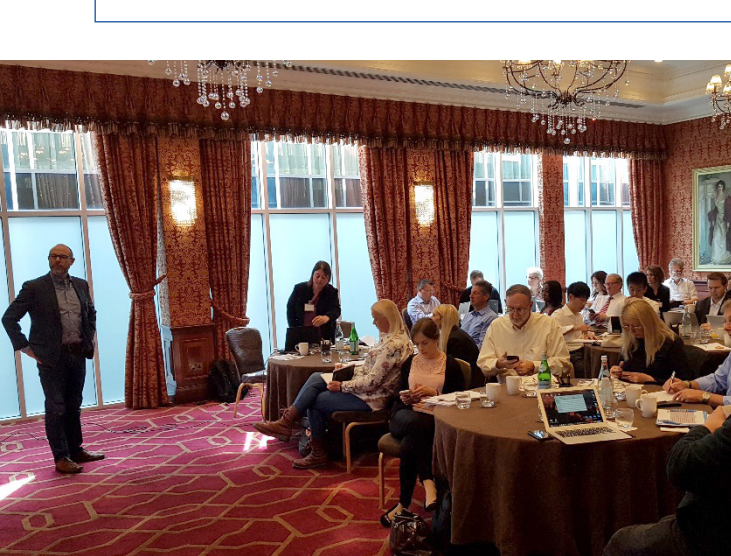
Helena DIGARD  
HTP TF Coordinator



Jason FLORA  
HTP TF Secretary



Maxim BELUSHKIN  
HTP TF Section Leader



## CORESTA COMMUNICATION AT EXTERNAL EVENTS

### Electronic Nicotine Delivery Systems Conference (ENDS 2019)



ENDS 2019, the Electronic Nicotine Delivery Systems Conference, was held in London, UK, from 14-15 June. Derek Mariner, member of the EVAP Sub-Group, made a presentation on “The value of collaboration in the development of e-cigarette test methods”, highlighting the development of CRM 84. ENDS 2019 was a small conference, with about 100 delegates from large and small e-cigarette manufacturers, but the majority from suppliers of services to the industry (including exhibits) e.g. contract chemical testing and toxicology consultants. The content was mostly UK/EU focussed considering Tobacco Product Directive 2 (TPD2) requirements. Speakers included industry and contract laboratories, the UK Medicines and Healthcare products Regulatory Agency (UK agency responsible for assessing TPD notifications), BSI and the UK Committee of Advertising Practice.



### Global Forum on Nicotine (GFN 2019)



The 2019 Global Forum on Nicotine (GFN), was held in Warsaw, Poland, from 11-13 June. Gene Gillman, Secretary of the EVAP Sub-Group, presented on “The history and challenges faced by the CORESTA EVAP Sub-Group in developing testing standards for e-liquids and e-aerosols”, highlighting the range of the Sub-Group’s past and current activities, its contribution to the development of ISO standards, and the value and challenges of collaboration. GFN 2019 was a large conference, with 633 attendees, from 71 countries. The conference attendees included a range of CORESTA members from cigarette and e-cigarette manufacturers to industry service providers. The majority of conference attendees were from outside the industry and had a focus on the effects of nicotine on public health. The scientific content of the meeting was at a high level and future conferences might be of interest to CORESTA members.



The above presentations can be viewed in the Information/CORESTA Communication section of the CORESTA website.

## CORESTA PARTICIPATION AT ISO MEETING

After the meeting held in Bordeaux in May 2018, the ISO/TC 126 (Technical Committee on Tobacco and Tobacco Products), considering the amount of work, decided to speed-up the pace and hold the next meeting within a year or so instead of 18 months. The Brazilian National Standard Organisation (ABNT) offered to host the 2019 meeting in Rio de Janeiro, from 1-7 July. Winter time in Brazil but still comfortable.

CORESTA has again been renewed as a “Liaison A” organisation with the Technical Committee as well as with its three Sub-Committees: SC 1 for Physical Measurements, SC 2 for Leaf Tobacco and SC 3 for Vape and Vaping Products. Liaison A status empowers CORESTA to participate in TC/SC, to appoint experts to Working Groups, to access and comment on documents, but not to vote in the development process or on resolutions made during the meetings.

As an example, in 2017-2018, CORESTA was not only a Member of TC 126/SC 3, but the convener of its Working Group 2, in charge of developing the first ever e-vape international standard: ISO 20768-2018 *Vapour products -- Routine analytical vaping machine -- Definitions and standard conditions*, based on CRM 81.

CORESTA contributes as expert in WG 21 for the revision of ISO 16055-2012 *Tobacco and tobacco products -- Monitor test piece -- Requirements and use*, in which the CORESTA Monitor was named as the sole existing monitor test piece. This will however change considering the existing Lower Ignition Propensity Monitor and other devices that will be developed for e-cigarettes and next generation products.

A large number of TC 126 participants are nevertheless involved in CORESTA activities and not only has CORESTA proposed CRMs to ISO, but the TC or the SCs have many times asked CORESTA to provide data for other developments or studies.

## Visit to Cigar Producing Facilities in the Bahia Region of Brazil

Brazil's association with cigarette tobacco is an undisputed fact - Brazil is currently the second largest world producer of the commodity and the largest exporter. A lesser known fact is that Brazil is also a leading cigar tobacco producing country. Cigar tobacco has been grown in Brazil for centuries, but its quality and its potential really came to the fore in the 1960s due to the upheaval in Cuba at the time.

Brazilian cigar tobacco has long been cultivated in the state of Bahia, situated to the north east of the country along the Atlantic coast. The region's capital is Salvador da Bahia, whose colourful historical centre, the Pelourinho, is a UNESCO World Heritage Site. Colonised by Portugal and the first capital of Brazil, Salvador's fortunes were linked to sugarcane, tobacco and precious stones. Due to the former slave trade, Salvador's population is 78 % of African origin and much of its culture, traditions and cuisine have their origins in Africa.

Tobacco has always mainly grown in the Mata Fina region that has thin tall vegetation (mata "vegetation", fina "thin"). The different microclimates of the area make for different tasting tobaccos highly prized for premium cigars. The main dark tobacco variety grown is named Mata Fina (after the region) but it is divided into sub-varieties named after each particular location, such as Mata Sul, Mata São Gonçalo and Mata Norte. Other varieties grown include Arapiraca and Brazilian Sumatra.

The Agrochemicals Advisory Committee (ACAC) and Scientific Commission (SC) meetings being held in Salvador da Bahia provided the ideal opportunity for members to visit the area's cigar production facilities. A tour of cigar manufacturing sites was kindly organised by Fumex Tabacalera, a subsidiary of the Hail and Cotton Group, and SindiTabaco/BA.

First cigar port of call was the Menendez Amerino cigar factory. It is located in São Gonçalo dos Campos in the Reconcavo Bahiano region of Bahia, which combines all the right conditions to grow Mata Fina and Mata Norte used in the company's cigars. The origins of Menendez Amerino are in Cuba where the Menendez family used to produce the well-known Montecristo cigars. Moving from Cuba to the Canary Islands in the 1960s, the family began producing the Montecruz cigar until rising labour costs, and their tobacco supplier, Mario Amerino Portugal, convinced them to seek greener pastures in Brazil. Here, with Amerino Portugal now a business partner, the company Menendez Amerino was born in 1977 and has since established a solid reputation with, amongst others, the famous Dona Flor cigar (named after a novel by the well-known Brazilian author Jorge Amado in which Amerino Portugal is mentioned by name) and the Alonso Menendez brand.

While touring the factory, it was explained that tobacco is sourced from the local growers and sorted and fermented onsite. Fermentation takes between 6-9 months with piles of tobacco humidified and rotated daily - outside to the middle and vice versa - until a temperature of 40-50 °C is reached. Two tobacco crops are grown in the (southern hemisphere) summer and winter months with harvesting done in November and June. Generally, a hectare will grow about 20 000 plants with a yield of 1000-1800 kg. Filler tobacco is stalk cut while wrapper leaves are harvested one by one by hand. Curing takes about 40 days.

The cigars are rolled onsite by a team of women producing up to 150 cigars per day. An interesting anecdote: northeast Brazil is renowned for its lace-making women (*rendeira*) whose handcrafting dexterity is particularly useful for rolling cigars! The cigars are then frozen after production to kill any cigar beetles (*Lasioderma*).





The second cigar port of call was the Centro Dannemann in São Félix. São Félix is directly across the famous town of Cachoeira, which takes over from Salvador as the capital of the Bahia State every year from 1 July to 15 August, and was the last stand for Brazil's independence from Portugal in 1823. The word "port" is not being used haphazardly: the area has a quick and easy access to the Bay of All Saints via the Paraguaçu River that runs between the two towns, making it convenient for the transport of tobacco, sugarcane and formerly slaves. Interestingly, the British-built Dom Pedro II iron bridge that links the two towns was originally destined to cross the Nile but having been built too short it was redirected to Brazil in 1885 by the founder of Dannemann.



Dannemann has a long tradition as an international producer of cigars and cigarillos. It produces brands such as Moods and Al Capone. The company was started by Geraldo Dannemann in 1873 who had emigrated from Germany. He established a factory in São Félix that combined the export of tobacco with the manufacture of cigars. He very quickly became a major player on the cigar tobacco scene with a strong position on the European markets.



The Centro Dannemann has a front section dedicated to cultural events (at the time of the visit there was a demonstration of capoeira – an Afro-Brazilian martial art developed by slaves that combines dance, acrobatics and music) and a back section dedicated to the production of cigars. Eight *charuteiras* skillfully and calmly rolled cigars under the watchful eyes and camera lens of visitors. The whole cigar tobacco production process was explained in detail: seed to finished product takes on average two years. The particularity of Dannemann cigars is that they are paper-wrapped instead of going into a press to maintain their shape. All of Dannemann's tobacco is grown by farmers under contract and paid according to leaf quality.



Dannemann is intensively involved in environmental protection and sustainability. At its Terra Dannemann Centre at Santo Antonio do Retiro, it has an "Adopt a Tree" reforestation project whereby anyone who wishes may plant a tree and follow its progress remotely or visit it in the future. Native species are grown to reestablish the biodiversity of the area. The project was launched in 2001 - the growing forest is already impressive and is re-attracting local flora and fauna. ACAC and SC members have now all been attributed their own Brazilian tree species!



The third port of call was the Leite & Alves cigar producing factory in Cachoeira and its very interesting Museu do Charuto displaying artefacts related to the region's cigar history. Founded in 1854, the company, one of the oldest cigar manufacturers in Brazil, sells its cigars under the brand names Leite & Alves and Talvis. Here too, women were hard at work deftly rolling cigars that were offered for sale in the factory shop.

With cigars steadily attracting increasing interest, the insight into cigar production in the Bahia region has enabled ACAC and SC members to better understand and appreciate the mechanisms and players in the manufacture of cigars in Brazil. Grateful thanks were extended to the organisers from Fumex Tabacalera and SindiTabaco/BA for the factory visits.



-----  
All persons connected with cigars or with an interest in the production of dark tobacco are reminded that CORESTA has a Guide (No. 21) on "Best Practices and Crop Protection in Cigar Dark Air-Cured Tobacco" (available from the CORESTA website at [www.coresta.org](http://www.coresta.org)).

# CORESTA WEBSITE – Latest Developments

www.coresta.org

The CORESTA website project is divided into three development phases:

**Phase 1:** the public section.

**Phase 2:** the general Members' section.

**Phase 3:** the Sub-Groups, Task Forces and Committees working section.

Phase 1 and Phase 2 were completed in 2016 and the public section and the members section have been operational since that time with a few improvements, such as the addition of a webform feature.

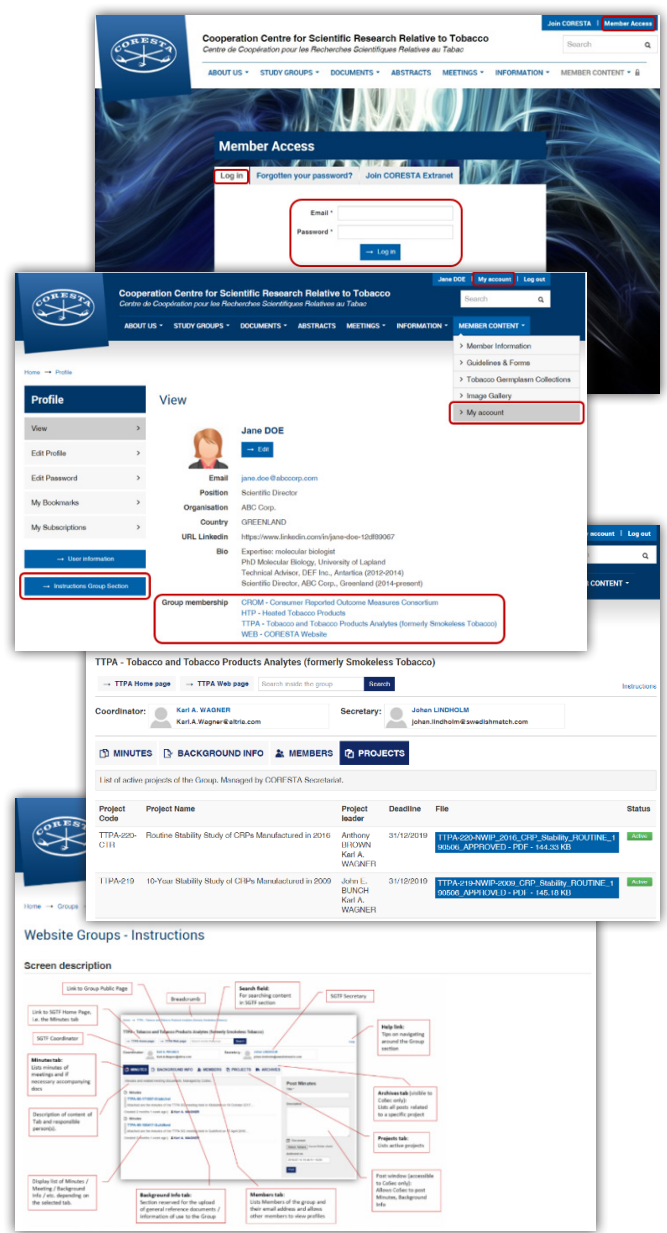
Phase 3 of the development is undergoing its final testing stage with Board and Scientific Commission members, together with working group Coordinators and Secretaries reviewing the different aspects of their working sections. Once finalised, the Working Groups section will be opened to all Working Group members.

The section contains the following information tabs:

- Minutes
- Background Info
- Members
- Projects
- Archives (for Coordinators & Secretaries only)

The Coordinators, Secretaries and CORESTA Secretariat manage the content of the sections. An Instructions page explains the different parts and their use and lists the different access rights.

The groups section was designed to be a simple document repository for easier access to documentation relative to the work of the different Sub-Groups and Task Forces. It cannot be used as a Project Management tool.



## Acronyms / Abbreviations used in the Newsletter

ABNT	Associação Brasileira de Normas Técnicas	LC	Low Converter
ACAC	CORESTA Agrochemical Advisory Committee	LNTP	Collaborative Study of Low Nicotine Tobacco
AP2019	2019 Agronomy & Leaf Integrity and Phytopathology & Genetics Joint Study Groups Conference		
B[a]P	Benzo[a]pyrene	MBA	Master of Business Administration
BSI	British Standards Institution	NAB	N-nitrosoanabasine
CEN	Comité Européen de Normalisation	NAT	N-nitrosoanatabine
CO	Carbon Monoxide	NGPs	Next Generation Products
CORESTA	Cooperation Centre for Scientific Research Relative to Tobacco	NGTX	21st Century Toxicology for Next Generation Tobacco and Nicotine Products
CM	CORESTA Monitor	NFDPM	Nicotine Free Dry Particulate Matter
CPA	Crop Protection Agent	NNK	Nicotine-derived nitrosamine ketone
CROM	Consumer Reported Outcome Measures	NNN	N-nitrosornicotine
CRM	CORESTA Recommended Method	NO	Nitrogen Monoxide
CTG	CORESTA Technical Guide	NOx	Nitrous oxides
CTR	CORESTA Technical Report	Q&A	Question & Answer
ECMA	European Cigar Manufacturers' Association	R&D	Research & Development
ENDS	Electronic Nicotine Delivery Systems	SC	Scientific Commission (CORESTA)
EU	European Union	SC	Sub-Committee (ISO)
EVAP	E-Vapour	SDGs	Sustainable Development Goals
FDA	Food & Drug Administration (USA)	SG	Sub-Group
GFN	Global Forum on Nicotine	SGTF	Sub-Group and Task Force
GHG	Green House Gases	SSPT2019	2019 Smoke Science and Product Technology Joint Study Groups Conference
HHP	Highly Hazardous Pesticides	TC	Technical Committee
HPHCs	Harmful and Potentially Harmful Constituents	TF	Task Force
HTP	Heated Tobacco Product	TPD	Tobacco Product Directive
ICVAAM	Interagency Coordinating Committee on the Validation of Alternative Methods	TRB	Tobacco Research Board
IT	Information Technology	TSNA	Tobacco Specific Nitrosamines
ISO	International Organization for Standardization	UK	United Kingdom
KT&G	Korea Tomorrow & Global Corporation	USA	United States of America
LC	Liquid Chromatography	WG	Working Group
		VOCs	Volatile Organic Compounds

## OBITUARY – LESLIE T.V. COUSINS



Les Cousins passed away on 21 July 2019 after a long illness.

Les's career was entirely focused on Zimbabwe tobacco. After being awarded a Tobacco Research Board (TRB) undergraduate bursary, he graduated with an agronomy degree from the University of Natal in South Africa and later obtained a Master's degree from the University of Rhodesia. He went on to join the TRB as an agronomist in charge of research programmes at the research station in Trelawney and then in charge of establishing a third research station to study oriental tobacco. He moved up the ranks to become Senior Agronomist, Deputy Director, and finally Director of the Kutsaga Research Station in Harare, which he had helped set up back in 1979. He retired in 2001 but continued as a consultant Agronomist for a few years before retiring permanently in South Africa.

Les was involved in CORESTA from 1966 until his retirement. He was elected Secretary to the CORESTA Agronomy Study Group in 1982 and served on the Scientific Commission in several capacities within the Study Group. He was President of the Scientific Commission from 1992-1994. The Tobacco Research Board was re-elected to the CORESTA Board in 1992 and Les served on the Board from then until 2000, having been Vice-President from 1998-2000. From 1984 to 1988 he co-ordinated a Collaborative Study on sucker control, and led the Organising Committee for the CORESTA Congress held in Harare in 1994. He was awarded a bronze medal in 1988, a silver medal in 1994 and a gold medal in 2002.

Les's untiring commitment to tobacco science and his longstanding contributions to CORESTA and the Zimbabwe tobacco industry are acknowledged with much gratitude by all his peers and the tobacco industry as a whole. On a personal level, Les advised and assisted whenever possible all with whom he came in contact and in many cases significantly contributed to their careers – he will be fondly and gratefully remembered for his scientific expertise, professionalism, cheerfulness and kindness and by all who knew him.

His CORESTA colleagues and friends present their most sincere condolences to his wife, Caroline, and his sons and their families. Their loss is CORESTA's and the tobacco world's loss as well.

