



# NEWSLETTER

Issue 53 – April 2019

## FOREWORD

*The new year has so far been very busy with CORESTA activities gaining momentum on every front. The newly elected Scientific Commission members have taken up their new roles and are eagerly directing CORESTA's scientific activities under the strategic umbrella of the re-elected Board and with the full cooperation of Sub-Group and Task Force Coordinators. Development of CORESTA Recommended Methods, Guides and publication of Technical Reports continues unabated – a full list is regularly communicated to members and is included in this Newsletter. A successful Workshop on Heated Tobacco Products was held in Paris last month and work is underway to establish a working group on the topic.*

*Opportunities to visit tobacco production sites and liaise with CORESTA members continued with a visit by the Agrochemical Advisory Committee (ACAC) and the Scientific Commission (SC) to the Cuban region of Pinar del Rio. A brief report is included in this Newsletter.*

*Arrangements for the 2019 CORESTA Study Group Conferences are in full swing and it is anticipated that a large number of delegates will converge in Hamburg, Germany, and Victoria Falls, Zimbabwe, both very attractive venues. The Call for Papers is open and a programme of high level research and much interest is expected.*

*On a sad note, CORESTA bade farewell to Marcel Crijnen who passed away in January. Marcel was Secretary to the Cigar Smoking Methods Sub-Group for many years and will be greatly missed.*

## 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**.

The meeting will be kindly hosted by Borgwaldt KC and Sodim.

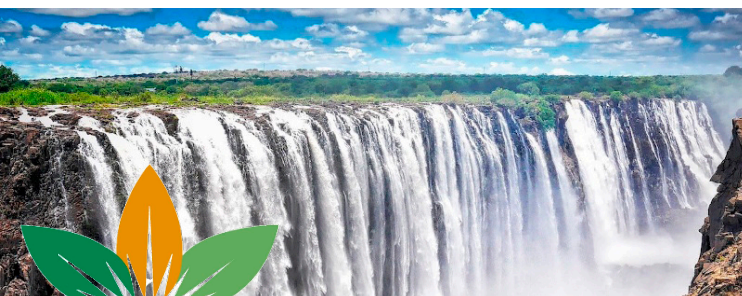


Website: <http://sspt2019.coresta.org>

Hamburg is known as Germany's "gateway to the world". It is Europe's second largest container port and a major hub for international trade. Tobacco has always been part of the goods transiting through the city, so much so that at one time Hamburg was known as "the tobacco capital of Europe", thus making it a fitting venue for the gathering of CORESTA's international delegates.

**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**.

This meeting is being organised by the Tobacco Research Board of Zimbabwe.



Website: <http://ap2019.coresta.org>

Zimbabwe, a major tobacco producing country, is proud to welcome the delegates to the AP2019 Conference at the mighty Victoria Falls (locally known as "Mosi oa-Tunya" - the smoke that thunders), one of the largest waterfalls in the world, located in western Zimbabwe along the Zambezi River. Victoria Falls town is a prime international conference destination combining top quality meeting facilities, spectacular scenery and an exciting range of safari and adventure activities.

## GENERAL INFORMATION

<b>Call for Papers and Abstract Submission:</b>	Available online via Conference and CORESTA websites
<b>Abstract Submission Deadline:</b>	Friday, 17 May 2019
<b>Abstract selection by Reading Committee:</b>	Wednesday, 5 June 2019
<b>Author notifications and programme publication:</b>	End of June 2019
<b>Meeting Registration:</b>	Available on Conference websites end of April, early May

## CORESTA Scientific Commission and Board Meetings

The **SCIENTIFIC COMMISSION** met in Havana, Cuba, on 16-17 January, kindly hosted by the Instituto de Investigaciones del Tabaco with the help of LTC International (see pg 10).

- The Scientific Director of the Institute presented INVESTA (see pg 11). The theme is "Building on our heritage" and the target audience (est. 200) includes scientists, factories, growers, etc. He invited CORESTA to nominate speakers for this event.
- Board President Huub VIZÉE emphasised the progress made by the Strategy Committee with the significant inputs from the SC. More discussions will help with prioritisation.
- ISO/CEN: There was an important review of the work on-going in these two bodies, some of which related to CRMs (see pg 7). It was reported that some other constituents for which CRMs have been developed would be worth becoming ISO standards.
- ACAC: The data processing procedure for Guidance Residue Levels has been completed. \*\* ACAC is considering actions on Highly Hazardous Pesticides (HHPs). \*\* ACAC will develop a practical technical manual to complement Guide No. 19 on responsible use of CPAs.
- Agronomy & Leaf Integrity: The Residue Field Trial group will start its 3rd three-year programme. Results of the 2nd round expected mid-2019.
- Phytopathology & Genetics: Blue Mould and Virus group final reports published. \*\* Vigiplant has been integrated into the Di@gnoplant application. Further contribution is needed for new inputs. \*\* BIO and RFT groups to collaborate. \*\* A paper to be submitted on tobacco alkaloid genetics to a peer-review journal.
- Product Technology: RAC to test nicotine-related CRMs on very low nicotine products. \*\* EVAP to present on CRM development issues at ENDS (London) and GFN (Prague) in June.

- Smoke Science: PUB published an article on e-cig. topography in Beiträge. \*\* CROM TF created. \*\* SMA to cooperate with ISO on the intense smoking version of a number of CRM-based standards.
- Standards and PMO: One guideline to be completed. \*\* PMO process defined, to be developed.
- Website: Phase 3 under ultimate review.

\* \* \* \* \*

The **BOARD** met on 26-27 February in Geneva, Switzerland, invited by JT International.

- In EU, FDA formal rules remain awaited and have first to be economically evaluated. \*\* Swedish snus should be approved. \*\* In EU, the Single Use Plastics regulation will impact cigarette butt collection costs, but not filter production (however alternatives should be found).
- As was done in the past years, the Board invited a top executive from a member organisation to discuss perception of and expectations from CORESTA and the working groups, and which areas they feel are more important than others.
- The Heated Tobacco Products workshop outlines were presented, and speed emphasised considering ISO has already launched some work on these products. Complementarity must be sought.
- Stéphane COLARD presented a point-in time report on his MBA project on Corporate Social Responsibility. The topic has gained interest within organisations worldwide. Scientific measurement tools are needed.
- Board Committees (Strategy, Finance, Events, Communication and IT) presented their reports. Strategy included inputs from SC and the committee will work on a prioritised short list and score card.
- The Budget was discussed and the Board confirmed the same Membership fee as for the last two years.



### UPCOMING CORESTA MEETINGS (2019)

Meeting	Date	Location
SG Product Use Behaviour (PUB)	23 May	Montreal, Canada
SG Biomarkers (BMK)	23 May	Montreal, Canada
TF Consumer Reported Outcome Measures Consortium (CROM)	24 May	Montreal, Canada
Agrochemical Advisory Committee (ACAC)	3-4 June	Salvador de Bahia, Brazil
Reading Committee & Scientific Commission	4-7 June	Salvador de Bahia, Brazil
Board	19-20 June	Seoul, South Korea
SG Agrochemicals Analysis (AA)	3-4 July	Dubai, United Arab Emirates
<b>SMOKE SCIENCE and PRODUCT TECHNOLOGY</b>	<b>6-10 October</b>	<b>Hamburg, Germany</b>
INFESTATION CONTROL CONFERENCE (ICC / PSMST)	7-8 October	Manila, Philippines
SG Pest and Sanitation Management in Stored Tobacco (PSMST)	9-10 October	Manila, Philippines
<b>AGRONOMY &amp; LEAF INTEGRITY and PHYTOPATHOLOGY &amp; GENETICS</b>	<b>13-17 October</b>	<b>Victoria Falls, Zimbabwe</b>

## CORESTA SUB-GROUPS & TASK FORCES

### PHYTOPATHOLOGY & GENETICS Study Group

#### **Disbanded:** Task Force Agro-Phyto Information Collection (APIC)

Following publication of the Guide No. 16, this Task Force (formed in 2012) completed its first objective to compile details of all known molecular markers in tobacco, published and unpublished. Its second objective, to compile experimental results of studies testing the efficacy of alternative products, was cancelled due to lack of participants including a new coordinator, and the group was formally disbanded by the Scientific Commission.

DISBANDED

### SMOKE SCIENCE Study Group

#### **Objectives confirmed:** Task Force Consumer Reported Outcome Measures Consortium (CROM)

##### Objectives:

1. To develop a CROM approach for tobacco and nicotine products under the guidance of industry, academia and regulatory agency stakeholders.
2. To adopt validation guidelines for CROM for use in the assessment of products with reduced risk potential.
3. To create a repository of existing and new CROM instruments outlining measurement and validation approaches.

UPDATE

#### **New Task Force:** 21st Century Toxicology for Next Generation Tobacco and Nicotine Products (NGTX)

##### Objectives:

1. To review emerging technologies and application to Next Generation Products (NGP) testing.
2. To identify appropriate approaches and application of emerging technologies to NGP testing.
3. To provide guidance documents to support assay application for NGP testing using toxicity testing in the 21st century (TT21C) relevant assays.

NEW

For more information please contact Marianna Gaca – British American Tobacco, U.K.  
([marianna\\_gaca@bat.com](mailto:marianna_gaca@bat.com))

### Physical Test Methods Sub-Group Meetings (China & France)

Since the last year, the Physical Test Methods (PTM) Sub-Group has held two meetings, the 27<sup>th</sup> meeting in Kunming, China, on 22 October 2018 and the 28<sup>th</sup> meeting in Orléans, France, on 3 April 2019.

The meeting in Kunming was the first meeting outside of Europe for several years and offered the participants the opportunity to enjoy the Chinese hospitality in the beautiful city of Kunming, and for some to return to China after the PTM Sub-Group meeting held Hangzhou in spring 2015. The 28<sup>th</sup> meeting in Orléans provided the participants with the option to visit the town of Joan of Arc who has played an important role in the history of France.

In the meetings, the status of all projects was reviewed and the routine work items such as the annual collaborative study on physical parameters and the round robin tests of calibration standards for air permeability, pressure drop and filter ventilation are well on track or about to be completed. The PTM Sub-Group decided to carry out a further collaborative study on physical parameters in 2019, again covering important physical parameters of cigarettes and filters, such as weight, diameter, pressure drop and filter ventilation. Preparations for this study are already ongoing.

Air permeability of cigarette papers was identified as one of the more important physical parameters that are not yet covered by a regular collaborative study. Consequently the Sub-Group decided to launch a project in this respect with the support of eight members. Also for this study preparations are already ongoing.

The review of documents forms another important part of the work in the PTM Sub-Group and decisions on the validity or revision of all concerned documents were taken. Some of these documents, such as Guide No. 4 on the measurement of pressure drop and CRM No. 53 on paper wrapper burn speed have in the meantime been revised and were published on the CORESTA website. Further documents, particularly Guide No. 6 on the use of balances and Guide No. 10 on the measurement of diameter will also be revised. Also CRM No. 77 and its corresponding Guide No. 14 on diffusion capacity are due for revision, but it was decided that for practical reasons the revision will be limited to an editorial revision.

With a final collaborative study during summer 2018 the development of CRM No. 90 on pouch sealing strength has been completed and the Technical Report and the CRM were submitted to the Scientific Commission and were published in March 2019.

For the near future the PTM Sub-Group plans to launch a project on the measurement of the crush strength of flavour capsules in cigarettes. At least eight CORESTA members have declared their willingness to participate, but a few details still need to be finalised, before the New Work Item Proposal can be filed.

The PTM Sub-Group intends to meet again in autumn 2019, but date and location have yet to be defined.



Bernhard EITZINGER  
PTM SG Coordinator



Patricia MÜLLER  
PTM SG Secretary



## HEATED TOBACCO PRODUCTS – A CORESTA WORKSHOP

### Paris, France – 26 March 2019

*“How to set the stage to produce credible science for the international community”*

On March 26, 2019, CORESTA organized a workshop in Paris to discuss Heated Tobacco Products (HTP) and how the Association would work on these new generation of nicotine delivery devices.

Out of the 60 participants registered, 53 attended, involved in the fields of agronomy, regulations, business, development, testing, standardization and counsel. In his welcome address, CORESTA Secretary General Pierre-Marie GUITTON stated that the outputs of the day would come from the discussions and recommendations from the participants. Dr. Rob STEVENS, Vice-President of the Scientific Commission, and chairman and moderator of the workshop, stressed the fact that the emphasis was on science and each person's expertise, with no regards to positions or size of organisation, which was not even indicated on the name tags.

The first part of the morning was dedicated to educational presentations on the HTP landscape, in terms of products, tobacco leaf options, benchmark with other categories, worldwide regulations, and issues related to the analytical work to be carried on, up to standardization. Again, it was underlined that CORESTA work has to be based on science, and robust facts made available for whoever needs to make decisions, e.g. with regards to regulations. Reduced risk cannot be the scope of the work undertaken, which must remain focused on analytical robustness.

It was pointed out that DIN, the German standardization body, had launched a project on HTP, which has been taken over at ISO level on the same terms. However, at this point, no analytical deliverables are expected so CORESTA will be the place to complement this work. Considering that many of the same laboratories are involved in ISO and CORESTA, duplicating the work would make no sense.

The presentations were followed with an open discussion where various questions were raised, and concerns expressed.

Then, considering the variety of participants, it was proposed that they physically visualize their distribution by standing in different areas of the room, first in terms of geographical zones (America [13], Asia [5, plus 5 apologies], and Europe [35]), then in terms of expertise (agronomy [5], business [7], regulations [5], R&D [15], standardisation [6] and testing [15]). This confirmed the strong interest in science, even if the choice between categories was difficult for some.

The participants had to position themselves regarding a number of questions, such as should CORESTA focus on emissions, consumables or devices. There was a general consensus regarding emissions, however all agreed that there could be no emissions without a consumable, and that device characterisation considerations would have an impact. Furthermore, all stated that, should CORESTA launch a working group, they would like to contribute.

In the afternoon, participants were invited to suggest themes to build the agenda for two 50-minute sessions of discussions. Those who suggested themes were to moderate the discussion, other participants were to either stay in the group or walk-in and walk-out as they felt relevant with regards to the topic. 16 themes were brought forward, and 8 groups were organised to meet during the two sessions with the proposer of the theme being the facilitator of the group. Participation in the discussions were passionate and fruitful, as reported later by the facilitators. All confirmed strong commitment and contribution in future work.

As expected, some topics raised within the various groups could be merged, and after a last round of discussion, three immediate priorities could be set for a working group to be defined:

- Terminology and definitions
- Aerosol generation and collection parameters
- Analytical methods (CRM suitability/New methods)

Rob STEVENS indicated that the next step was to report swiftly to the Strategy Committee of the CORESTA Board in order to prepare a proposition to be presented to the Scientific Commission prior to their meeting early June. The Board would then validate the project mid-June.



## CORESTA PROJECTS

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

- **Project 204: 12th Collaborative Study on Physical Parameters**  
(Sub-Group Physical Test Methods) - Approved December 2018
- **Project 205: 15th FAPAS CPA Analysis Proficiency Test - 2019**  
(Sub-Group Agrochemicals Analysis) - Approved January 2019
- **Project 206: Systematic Review of CRM 83**  
(Sub-Group Smoke Analytes) - Approved January 2019
- **Project 207: Field Residue Trials - 3rd three-year cycle**  
(Sub-Group Agrochemical Residue Field Trials) - Approved February 2019
- **Project 208: 6th Proficiency Test for Detection of Transgenic Tobacco**  
(Proficiency Testing for Detection of Transgenic Tobacco) - Approved February 2019
- **Project 209: 15th Round Robin Test on Pressure Drop Calibration Standards**  
(Sub-Group Physical Test Methods) - Approved March 2019
- **Project 210: LOD and LOQ Values for Metals in E-liquid and E-vapor Aerosol Samples**  
(Sub-Group E-Vapour) - Approved April 2019

## CORESTA GUIDES

### Revision - CORESTA Guide No. 4

A User Guideline for the Measurement of Pressure Drop of Cigarettes and Cigarette Filter Rods  
(January 2019) [PTM-192-CTG-04]

CORESTA Guide No. 4 is intended as a reference for manufacturers of cigarettes and cigarette filter rods as to the best practice for the measurement of pressure drop. The document was subject to a periodic technical and editorial review by the CORESTA Physical Test Methods (PTM) Sub-Group; section 4.3 PD values of interest were changed from 100 to 800 mmWG to a range of 50 mmWG to 800 mmWG.

### New - CORESTA Guide No. 16

Molecular Markers in Tobacco (March 2019)  
[APIC-094-CTG-16]

Conventional plant breeding usually identifies genetic variation by visual or chemical selection. The process of developing new crop varieties can take up to 25 years. However, with the advancements in molecular biology, the duration has been considerably shortened to 7-10 years. One of the important techniques that makes it efficient for scientists to select plant traits is Marker-Assisted Selection (MAS). In this guide, the most commonly used molecular techniques in tobacco have been surveyed, different types of molecular markers are explained in detail, and recommendations made.

### New - CORESTA Guide No. 23

Placement of Data Loggers in Air-cured Barns and Data Logger Maintenance (February 2019)  
[TSNA-034-CTG-23]

CORESTA Guide No. 23 describes the placement of data loggers in air-curing barns to monitor humidity and temperature during curing. These data are useful in studies relating aspects of leaf chemistry, such as tobacco-specific nitrosamines and leaf quality, to the barn environment.

### New - CORESTA Guide No. 24

Sample Handling of Mentholated Cigarettes and Cut Filler (April 2019)  
[RAC-116-3-CTG-24]

The appropriate storage and preparation of the samples prior to analysis is important to ensure representative analytical results. A laboratory can only produce high quality results if the integrity of samples is maintained. Guide No. 24 is applicable for the sample handling of mentholated cigarettes and cut filler of mentholated cigarettes before analysis and it also includes guidance for collection of sealed pack samples including mentholated cigarettes.

## CORESTA RECOMMENDED METHODS

### New

- **CRM No. 88** – Determination of Water Activity of Tobacco and Tobacco Products  
(January 2019) [TTPA-172-3-CRM-88]

This CRM is applicable to the measurement of water activity within a measurement range of 0.250-1.000 aw of smokeless tobacco (e.g. moist snuff, snus, chewing tobacco, and dry snuff), cigarette filler and ground cigars. The method is based on the results of the Collaborative Study published in the CORESTA Tobacco and Tobacco Products Sub-Group Technical Report 2018 *Collaborative Study for the Determination of Water Activity of Tobacco and Tobacco Products*, January 2019.

- **CRM No. 89** – Tobacco – Determination of the Content of Total Sugars – Continuous-Flow Analysis Method using Hydrochloric Acid / P-Hydroxy Benzoic Acid Hydrazide (PAHBAH)  
(April 2019) [RAC-054-2-CRM-89]

This CRM specifies a method for the determination of the content of ‘Total Sugars’ as glucose in tobacco by CFA using hydrochloric acid (HCl) for hydrolysis and p-hydroxybenzoic acid hydrazide (PAHBAH) for colour formation. This method is applicable to unprocessed tobacco lamina and processed tobacco such as cigarette blend tobacco and roll-your-own (RYO) tobacco. The method is based on the results of the Collaborative Study published in the CORESTA Routine Analytical Chemistry Sub-Group Technical Report 2015 *Collaborative Study Developing a CRM for the Determination of Total Sugars in Tobacco by Continuous Flow Analysis*, March 2019.

- **CRM No. 90** – Determination of Dry and Wet Sealing Strength of Pouches for Smokeless Tobacco and Derivative Products – Definitions and Measurement Principles  
(March 2019) [PTM-060-2-CRM-90]

This Recommended Method specifies a physical test method for the determination of dry and wet sealing strength of pouches for smokeless tobacco and derivative products (SADP). This method is based on the results of the Collaborative Study published in the CORESTA Physical Test Methods Sub-Group Technical Report *Collaborative Study on Sealing Strength of Pouch Materials*, March 2019.

- **CRM No. 91** – Determination of 15 PAHs in Tobacco and Tobacco Products by GC-MS/MS or GC-MS  
(April 2019) [TTPA-117-2-CRM-91]

The method is used to quantitatively determine the concentration of 15 polyaromatic hydrocarbons (PAHs) in tobacco and tobacco products using gas chromatography (GC) connected to a single mass spectrometer (MS) or tandem mass spectrometer (MS/MS). The method is applicable to single grades of tobacco, cigarette filler, cigar filler, and smokeless tobacco products. The method is based on the results of the Collaborative Study published in the CORESTA Tobacco and Tobacco Analytes Sub-Group Technical Report *Collaborative Study on 2017/2018 PAHs in Tobacco and Tobacco Products*, March 2019.

- **CRM No. 92** – Determination of Menthol in Cigarettes and Cut Filler by Gas Chromatography  
(April 2019) [RAC-116-2-CRM-92]

This method is applicable to the gas-chromatographic determination of menthol in mentholated cigarettes and in cut filler of mentholated cigarettes. The method is valid only for cellulose acetate filtered cigarettes as the extraction efficiency has not been tested for other types of filters. The method is based on the results of the Collaborative Study published in the CORESTA Routine Analytical Chemistry Sub-Group Technical Report *Collaborative Study of Menthol in Cigarettes and Cut Filler*, April 2019.

### Revised

- **CRM No. 53** – Determination of Paper Wrapper Burn Speed  
(Second edition – January 2019) [PTM-201-CRM-53]

CRM 53 was subject to a periodic technical and editorial review by the CORESTA Physical Test Methods Sub-Group and editorial changes were made in line with the CORESTA Guidelines for writing a CRM.

- **CRM No. 63** – Determination of Tobacco Specific Nitrosamines in Cigarette Mainstream Smoke - GC-TEA Method  
(Second edition – January 2019) [SMA-163-CRM-63]

CRM 63 was subject to a periodic technical and editorial review by the CORESTA Smoke Analytes Sub-Group and the method summary section was clarified.

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



## CORESTA RECOMMENDED METHODS (continued)

### CRMs developed into ISO Standards

The International Organization for Standardization (ISO) Technical Committee on Tobacco and Tobacco Products (TC 126) has published the following standards based on CORESTA Recommended Methods proposed as ISO New Work Item Proposals by CORESTA:

- **ISO 21330:2018** – Cigarettes -- Determination of selected volatile organic compounds in the mainstream smoke of cigarettes -- Method using GC/MS (*published November 2018*)  
**based on CRM 70** - Determination of Selected Volatile Organic Compounds in the Mainstream Smoke of Cigarettes - Gas Chromatography-Mass Spectrometry Method.  
CRM 70 will also be the basis of ISO Standard 23923, under development, for the determination of selected volatile organic compounds in the mainstream smoke of cigarettes with an intense smoking regime.
- **ISO 21766:2018** – Tobacco and tobacco products -- Determination of tobacco-specific nitrosamines in tobacco products -- Method using LC-MS/MS (*published August 2018*)  
**based on CRM 72** - Determination of Tobacco Specific Nitrosamines in Tobacco and Tobacco Products by Liquid Chromatography - Tandem Mass Spectrometry.
- **ISO 21160:2018** – Cigarettes -- Determination of selected carbonyls in the mainstream smoke of cigarettes -- Method using high performance liquid chromatography (*published November 2018*)  
**based on CRM 74** - Determination of Selected Carbonyls in Mainstream Cigarette Smoke by High Performance Liquid Chromatography (HPLC).  
CRM 74 will also be the basis of ISO Standard 23922, under development, for the determination of selected carbonyls in the mainstream smoke of cigarettes with an intense smoking regime.
- **ISO 21045:2018** – Tobacco and tobacco products -- Determination of ammonia -- Method using ion chromatographic analysis (*published August 2018*)  
**based on CRM 79** - Determination of Ammonia in Tobacco and Tobacco Products by Ion Chromatographic Analysis.

CORESTA Recommended Methods having ISO equivalents now total 42, with one (CRM No. 85) remaining under development by ISO and two others (CRM Nos 78 and 83) serving as the framework for the development of related ISO standards.

## CORESTA and ISO:

### Agrochemical Analysis Sub-Group Response to ISO Regarding Resolution on Maleic Hydrazide

The issue of the revision of ISO Standard 4876:1980 “Tobacco and tobacco products - Determination of maleic hydrazide residues” has been discussed on several occasions by the ISO/TC 126/SC2.

At the ISO meeting in May 2018, the committee members reiterated the decision made at the ISO/TC 126/SC2 meeting in October 2016 to “wait for the clarification of the work of CORESTA Agrochemicals Analysis Sub-Group (AA SG) before considering the initiation of a new work item proposal”.

In response to this decision, the AA SG compiled an overview of its work on maleic hydrazide since 2015. Due to the complexity of the distribution of maleic hydrazide (MH) throughout the tobacco plant, the AA-SG had conducted three Joint Experiment Technical Studies (JETS) to assess how to analyze it correctly. A further metabolism study had been done by Japan Tobacco Inc.

Based on the results of these studies, it was concluded that data from the proposed replacement method of the current ISO Standard was not comparable, and that further work needed to be done. Due to many other commitments by labs, it may take some time to undertake further studies and come to a definite conclusion.

## CORESTA REPORTS

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

- **2018 Collaborative Study for the Determination of Water Activity of Tobacco and Tobacco Products**  
Technical Report [TTPA-172-2-CTR] – January 2019 (Sub-Group Tobacco and Tobacco Products Analytes)

In October 2017 CORESTA Tobacco and Tobacco Products Analytes Sub-Group (TTPA) initiated a proficiency study for the determination of water activity in smokeless tobacco products, ground tobacco, cigarette filler, and cigar filler. Following this study, published in August 2018 [TTPA-172-1-CTR], and upon recommendation of the TTPA Sub-Group, a collaborative study was subsequently carried out in 2018 for the determination of water activity in tobacco products where the protocol specified the use of a water activity meter equipped with a TDL sensor. This report outlines the results of the collaborative study, which were used to finalise the CORESTA Recommended Method (CRM) No. 88.

- **Medium-Term Variability of Commercial Cigarettes through Select Cigarette Constituent Testing**  
Technical Report [CVAR-082-CTR] – January 2019 (Task Force Cigarette Variability)

Scientists measure tobacco and smoke constituents for a variety of reasons. In order to make science-based decisions, the scientific community needs to fully understand all aspects of the variability associated with these measurements, including those due to agricultural factors or due to factors related to commercial cigarette production. To meet this need, the Cigarette Variability (CVAR) Task Force was formed and has developed a three-phase study: Phase 1 focused on understanding the short-term (1 week) variability of commercial cigarette products, Phases 2 and 3 of the study focused on medium-term (1 year) and long-term (3 years) variability. This report focuses on the results for Phase 2 of the study.

- **Collaborative Study on the Suitability of Certain Substrates for the Ignition Propensity Test According to ISO12863:2010**

Technical Report [RAC-106-CTR] – January 2019 (Sub-Group Routine Analytical Chemistry)

For testing the ignition propensity of cigarettes ISO 12863:2010 describes a method which requires placing lit cigarettes on a defined commercial substrate. The CORESTA Routine Analytical Chemistry (RAC) Sub-Group conducted a large international collaborative study to evaluate the efficacy, stability and reliability of other paper substrates in the ISO ignition propensity test. Three test pieces were tested on four different paper substrates to check if the substrates differed in their performance. Results showed that there were no significant differences in performance and the results may also be used as a basis to optimise standard specifications for paper substrates used in the study. In addition, comparison with past data showed that CM IP 2 is stable and suitable as a monitor test piece on all of the substrates covered in the study.

- **13th Round Robin Test for Multi-Capillary Pressure Drop Calibration Standards (2017/2018)**

Technical Report [PTM-159-CTR] – January 2019 (Sub-Group Physical Test Methods)

The above report is part of a nominally annual cross-check that is open to calibration laboratories to compare their capability to calibrate standards used in physical test instrumentation. The testing provides a baseline of Pressure Drop (PD) instrument performance across the industry, since this standard type is used in the PD instrumentation of each supplier. The results of this round robin test continue to conform to the historical performance of the method presented in ISO 6565:2011 and the results of previous round robin tests.

- **2018 Collaborative Study of CORESTA Monitor 8 (CM8) and 9 (CM9) for the Determination of Test Piece Weight, TPM, Water, Nicotine, NFDPM, Carbon Monoxide and Puff Count Obtained under Mainstream 'ISO' and 'Intense' Smoking Regimes**

Technical Report [RAC-187-CTR] – February 2019 (Sub-Group Routine Analytical Chemistry)

The Sub-Group Routine Analytical Chemistry (RAC) is responsible for organising the annual testing of the CORESTA Monitor test piece. The 2018 study was designed to measure mainstream ISO and Intense smoke yields of nicotine-free dry particulate matter (NFDPM), nicotine and carbon monoxide (CO) to verify the current monitor test piece CM8; to determine intra- and inter-laboratory variability for the measured ISO and Intense smoke yields for the CM8 and CM9; to verify the conditioned weight for the CM8 and CM9, and to release CM9 as a new monitor test piece. The analytical results for the CM8 and CM9 test pieces confirmed that they can be used as monitor test pieces in smoke analysis.



## CORESTA REPORTS (continued)

- **6th Round Robin Test for Multi-Capillary Ventilation Calibration Standards (2017/2018)**

Technical Report [PTM-166-CTR] – March 2019 (Sub-Group Physical Test Methods)

This report covers the results of the sixth filter ventilation standards cross-check conducted between October 2017 and October 2018. The CORESTA Physical Test Methods (PTM) Sub-Group organises a nominally annual cross-check for calibration laboratories to compare their capability to calibrate standards used in physical test instrumentation. The testing provides a baseline of ventilation instrument performance across the industry, since this standard type is used in the pressure drop / ventilation instrumentation of each supplier. Each laboratory is also able to use the result set in internal and external audit assessments. The results are broadly in line with the historical performance of the method.

- **2016 Collaborative Study on Aromatic Amines in Mainstream Cigarette Smoke**

Technical Report [SMA-048-2-CTR] – March 2019 (Sub-Group Smoke Analytes)

From 2014 to 2017, the CORESTA Smoke Analytes (SMA) Sub-Group evaluated through a series of joint experiments and a collaborative study an analytical method for measurement of aromatic amines. This report covers the collaborative study undertaken to evaluate the GC/MS(NCI) method for the determination of aromatic amines in ISO and Intense mainstream smoke of a range of products. The generated data and corresponding statistical analysis indicated that the analytical method currently does not support development of a CORESTA Recommended Method (CRM). However, several aspects of the methodology were identified as key for further investigation and an amended method will be tested on reference products.

- **2015 Collaborative Study for the Determination of Total Sugars in Tobacco by Continuous Flow Analysis**

Technical Report [RAC-054-1-CTR] – March 2019 (Sub-Group Routine Analytical Chemistry)

The CORESTA Recommended Methods Nos. 37 and 38 are available for the analysis of the respective tobacco parameters but there is no harmonised method available for the analysis of 'Total Sugars' in tobacco. The CORESTA Scientific Commission approved a study project, coordinated within the Routine Analytical Chemistry (RAC) Sub-Group, for the development of a harmonised method, based on CRM No. 38, for the determination of 'Total Sugars' by continuous flow analyses (CFA) in tobacco and tobacco products. This report outlines the collaborative study leading to the development of CRM No. 89.

- **Collaborative Study on Sealing Strength of Pouch Materials**

Technical Report [PTM-060-1-CTR] – March 2019 (Sub-Group Physical Test Methods)

This collaborative study was carried out by the Physical Test Methods (PTM) Sub-Group in order to determine repeatability and reproducibility statistics of the newly developed CORESTA Recommended Method (CRM No. 90) on sealing strength of pouches for smokeless tobacco and derivative products. The results show that laboratories are in general able to reliably perform the measurement of sealing strength as described in the CRM.

- **Collaborative Study of Menthol in Cigarettes and Cut Filler**

Technical Report [RAC-116-1-CTR] – March 2019 (Sub-Group Routine Analytical Chemistry)

The CORESTA Routine Analytical Chemistry (RAC) Sub-Group conducted a collaborative study of menthol in whole cigarettes and cut filler. The purpose of this study was to evaluate repeatability and reproducibility (r & R) values of the methodology. The results proved favourable and a new CORESTA Recommended Method was subsequently developed (CRM No. 92). In addition, a Guide was also produced (Guide No. 24).

- **Collaborative Study on 2017/2018 PAHs in Tobacco and Tobacco Products**

Technical Report [TTPA-117-1-CTR] – March 2019 (Sub-Group Tobacco and Tobacco Products Analytes)

The Tobacco and Tobacco Products Analytes Sub-Group (TTPA) carried out a collaborative study for the analysis of 18 polyaromatic hydrocarbons (PAHs) in tobacco and tobacco products. Five smokeless tobacco products, two cigarette fillers, two cigar fillers and one ground tobacco were included in the study. The report includes tabulated data and repeatability and reproducibility values along with a recommendation to create a CORESTA Recommended Method for the subset of analytes that were analysed with consistent results between laboratories. This resulted in the development of CRM No. 91.



## Cuba Tobacco Production: Visit to Tobacco Research Institute and Tobacco Farming Area



Cuba = cigars! Cuba conjures up images of sandy beaches, music, salsa, 1950s vehicles, coloured Spanish style architecture, sugarcane, rum, revolution, Fidel and Che Guevara ... but first thoughts are inevitably of cigars and tobacco.

The Agrochemical Advisory Committee (ACAC) and Scientific Commission (SC) had the unique opportunity to have their January 2019 meetings hosted in Havana by the Tobacco Research Institute, kindly assisted by LTC International. This unique opportunity to discover the Cuban tobacco industry generated much enthusiasm and members of the two committees made every effort to attend.

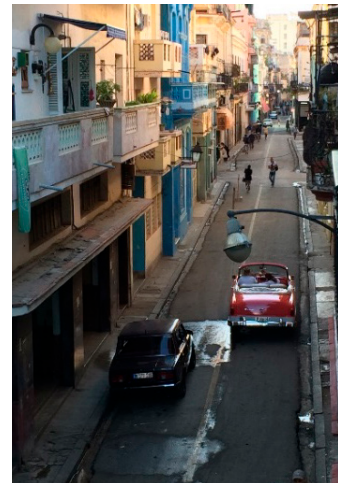
The Lonely Planet guide describes Cuba as being “timeworn but magnificent, dilapidated but dignified, fun yet maddeningly frustrating – Cuba is a country of indefinable magic”. This may be true for many aspects of Cuban life, but where tobacco is concerned, Cuba is definitely in a league of its own!

Tobacco has been part of Cuban agriculture for many centuries, long before it became known in Europe. It was part of local practices to “drink smoke” from the burning leaves of the “cohiba” tobacco plant wrapped in palm or plantain leaves. Following the arrival of Christopher Columbus in Cuba 1492, his discovery of tobacco, and the subsequent introduction of smoking in Europe, tobacco exports from Cuba to Spain became a thriving business. Tobacco production on a larger scale was begun by the Spanish in 1531 and the first cigar factory was established in Cuba in 1542. Other world powers at the time followed suit, and the rest is history! Cuban tobacco seeds and know-how have spread throughout the world with many of today’s cigar tobacco varieties tracing back their origins to Cuba, e.g. Connecticut Wrapper, and Cuban cigars having achieved worldwide fame.

It is with this historical backdrop that the “Instituto de Investigaciones del Tabaco” (IIT) undertakes its research, vital to Cuba’s economy. Cuba has the second largest area planted with tobacco of all countries worldwide and tobacco is the country’s third largest source of hard currency.

The IIT’s mission is “to provide the scientific basis for the effective and efficient development of the whole tobacco network”. Created in 1967 by the Ministry of Agriculture as an experimental centre, it became an institute in 1985, and in 2000 was incorporated into the Tobacco Entrepreneurial Group TABACUBA. It is located in the San Antonio de los Baños municipality in the Artemisa Province.

Tobacco research began officially in 1937 with the establishment of a tobacco experimental station focused on seed production and tobacco quality in San Juan y Martinez, Pinar del Rio Province. Research was extended in 1940 with a station in Cabaiguan, Sancti Spiritus Province, that maintains a germplasm collection. Direction of these two research stations was subordinated to the Institute, along with the subsequent groups; Granma formed in 2003 and Villa Clara formed in 2009 to develop technological projects and provide extension services.



The IIT’s work is centered around three main activities that include research projects, scientific related services and seed production. Research projects focus on phylogenetic resources, agricultural practices, breeding and phytopathology, post-harvest operations and industrial processing of cigars and cigarettes. The projects are developed in line with the IIT’s strategic objectives; to conserve and improve genetic resources, improve variety resistance, improve production processes, responsible use of resources and







reduction of agrochemical residues, diversification and improvement of tobacco products and tobacco derived products and to guarantee seed production. The research is complemented by analysis, diagnosis, standardization and certification services. Extension services and courses disseminating agricultural information to the growers and seed production ensures crop quality is maintained. In addition, the IIT publishes a scientific journal “Cuba Tabaco” and a bulletin “El Productor”.

All the IIT's work is handled by a staff of around 422 employees of which nearly 100 are involved in research. During their tour, ACAC and SC members were shown around the various departments of the IIT and given the opportunity to talk with the researchers.

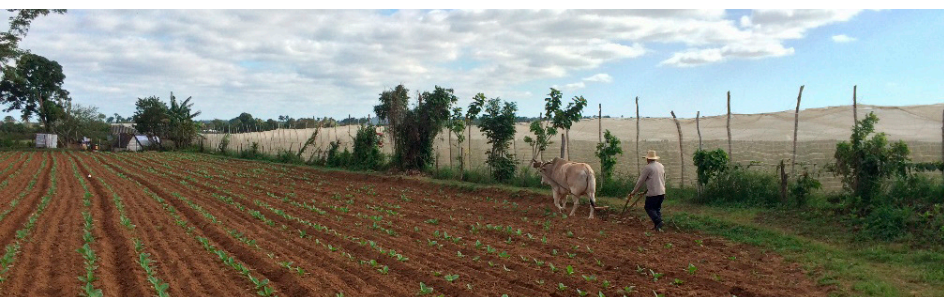
The visit to the IIT was followed with a visit to a tobacco farm close to San Juan y Martinez in the Pinar del Rio Province. Máximo, one of the region's top tobacco growers, warmly welcomed the CORESTA delegation and gave an overview of his operation.

Cuban tobacco growers normally have 5 ha plots of land on which they produce cigar wrapper, binder and filler. Many different tobacco varieties are grown but the choice normally depends on the time of planting. There is national strategy to customize varieties to a particular area (currently the IIT has commercialized 17 varieties of which 10 are dark air-cured). Wrapper leaf can be grown under both shade and sun, but better prices are obtained for shade-grown leaf. Filler and binder leaf is always sun grown. Approximately 10 workers are needed for the operation, and about 14-15 at harvest time. Flood irrigation is the norm. There is no CPA application schedule unless there is a disease or pest outbreak. Every attempt is made to limit this as much as possible with good crop management. Suckering is usually done by hand, although the use of growth regulators is becoming more widespread. Topping is normally done at either the 8 or 10 leaf stage. Due to the small farm sizes, rotations with other crops such as maize, is limited. Growers are normally associated to the National Association of Small Farmers, a cooperative that provides credit and farming services and assists with logistics.

A visit to the fields and curing barns gave delegates more insight into the production of Cuban tobacco, and the tour ended with a most entertaining lunch, under a traditional thatched shelter, giving delegates a true taste of Cuban hospitality.

The members of the CORESTA ACAC and SC expressed their sincere thanks to the IIT and Máximo for the visits to the Institute and the Pinar del Rio tobacco farming district, and to LTC International for facilitating logistical arrangements. The knowledge gained will further enhance the knowledge on cigar tobacco production, which is currently the focus of increased attention. It was reminded that CORESTA recently published its 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)).

In a rapidly changing world environment, Amaury Borges Miranda, the IIT Scientific Director, mentioned that the visit by the CORESTA delegates to Cuba was much appreciated and insisted on the need to increase interactions with the world tobacco scientific community. To this end, the IIT is organizing its first international tobacco Congress, INVESTA, to be held 9-13 December in Havana. Information may be found online at [www.investacuba.com](http://www.investacuba.com).



 **INVESTA**  
1er Congreso Internacional  
de Investigaciones del Tabaco  
9 -13 Diciembre 2019, La Habana Cuba  
**...mejorando nuestra herencia**



## OBITUARY – MARCEL CRIJNEN



On 9 January 2019, Marcel Crijnen passed away after a long illness.

Marcel was a strong supporter of the European and Dutch cigar industry for more than 25 years. He was President of the Nederlandse Vereniging Voor de Sigarenindustrie (the Dutch Cigar Manufacturers Association). He was also the Secretary General of the European Cigar Manufacturers Association (ECMA) since 1999 and in this role he represented the interests of almost 100 % of the European cigar manufacturing industry.

Within CORESTA, Marcel supported the Cigar Smoking Methods (CSM) Sub-Group as Secretary of the group since 2006. Prior to this, he had been Secretary of the Cigars Sub-Group from 1996 until it was disbanded in 2006. He was able to combine secretarial support and his engineering background to contribute to the activities and deliverables of the groups. With his assistance, cigar smoking methods have been improved and many collaborative studies have been set up and executed.

He became a very good colleague and friend of all with whom he worked and he will be sorely missed for his professional skills and the friendship he has shown. This camaraderie is typical in the European cigar industry, and he was able to extend this to the CORESTA Sub-Group.

Testimony to Marcel's generosity and selflessness, it must be noted that he was awarded a CORESTA Bronze medal in 2012 for his contributions to the work of the association, but declined the award in favour of another CSM SG member whom he felt was more deserving.

Marcel has truly earned respect, appreciation and gratitude. CORESTA wishes to express its sincere gratitude to Marcel for his work on furthering cigar research and presents its most sincere condolences to his family.

