



NEWSLETTER

Issue 49 – December 2017

Joint Meeting of the Smoke Science and Product Technology Study Groups Kitzbühel, Austria / 8-12 October 2017



If mountain climbing would be completely riskless, it would not interest anybody. However the pursuit is always to minimise the risks.

The CORESTA SSPT2017 conference invited all delegates to the mountains from 8-12 October to breathe some fresh air – without risks since alpine ascents were not on the agenda.

We do not know for sure whether skiing was invented in Kitzbühel but we do know that the area is one of the most famous ski resorts in Austria and the Alps. The annual Hahnenkamm downhill race is without a doubt the most famous ski race in the world and the feared Streif slope demands guts.



Organising a conference in such an environment could only be exciting! The delfort Organising Committee (Huub, Gudrun and Sabine) were thrilled to see how the number of participants gradually increased as the CORESTA event approached. As a host of the meeting, delfort is now in first position for the number of participants at an SSPT meeting: 344 persons (including accompanying persons) attended, a record never seen in CORESTA before.

There was great activity already during the weekend as ten Sub-Group meetings were held. This time the Scientific Commission had decided to have half day meetings only so as to avoid adding days to the meeting and focus on main items. CORESTA Board members who came to Kitzbühel also took the opportunity to hold a meeting on Sunday. However, Sunday's highlight was the In Vitro Toxicology Workshop.

In Vitro Toxicology (IVT) Workshop

People listened with avid interest to what Martha Moore from Ramboll Environ, Inc., USA, had to say about "Guidance related to the use of genetic toxicology assays for international regulation of tobacco products." Martha is an internationally recognised expert in the use of genetic toxicology data in both chemical hazard identification and mode-of-action related to cancer risk assessment. She provided an historical overview on the CORESTA recommended in vitro genetic toxicology/cytotoxicity test batteries and invited the audience to discuss the new regulations being put in place and their impact on them.

Julie Clements from Covance Laboratories Ltd, UK, captured the audience's attention with her presentation on the many technical and practical challenges linked to in vitro genetic toxicology tests in the light of prevailing regulations. Her field of expertise is regulatory testing across different industry types and she encouraged the public to consider the regulatory compliance perspective.



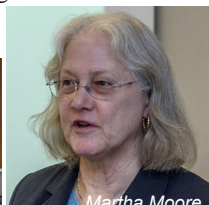
SSPT2017 at a glance:

- Hosted by delfort
- Held at the K3 KitzCongress Centre, Kitzbühel, Austria
- 283 delegates (plus 37 only attending SGTF meetings), 24 accompanying persons
- 21 nations represented
- Sessions: 17; Workshops: 2; SGTF meetings: 10
- Presentations: 65 oral, 2 Intergroup, 54 posters, 12 SGTF reports

Abstracts, available presentations and full texts, published on the CORESTA website www.coresta.org



In Vitro Toxicology Workshop



Martha Moore



Julie Clements



Welcome Cocktail

All sports lovers know that refueling prior to exercise is to maximise muscle glycogen storage. A scientific meeting certainly needs to be considered quite a “sporty” performance for speakers and those who follow the first-rate presentations over several days, not to mention those who organise the event.



Sunday’s welcome cocktail was held in the charming Hotel Zur Tenne in the centre of Kitzbühel’s pretty old town. It was the first ‘refueling’ stop for delegates prior to the four-day conference week. It gave a foretaste of the substantial scientific programme and Austrian flavours for the coming week. In his opening speech, Martin Zahlbruckner, Chief Executive Officer of delfort AG, warmly welcomed all the delegates. He invited them to enjoy the relaxing and healthy environment of Kitzbühel and the conference venue, where they could share ideas and discuss subjects of mutual interest. Michael Meger, President of the CORESTA Scientific Commission, also admired the exceptional working environment offered to CORESTA in the middle of such beautiful Austrian scenery. He was delighted to share such an international platform with scientists to express their knowledge in science and regulatory affairs.



CORESTA’s Role

At Monday’s opening session the Standards Task Force presented its report. The audience was reminded that the Task Force's role was to improve, structure and document the process of CORESTA cooperation. They were also informed that a new Task Force, Project Management Office (PMO), had been approved by the Scientific Commission in order to deliver an appropriate framework within CORESTA as regards to definition and achievement of the organisation objectives, improved integration of projects within the organization and oversight of entire project cycles.

Intergroup (IG) Papers

Two IG papers were selected to be presented at both the SSPT and AP meetings because their subjects are of common interest to both sides.

The first paper, by Michal Morton, Altria Client Services, USA, described the demonstrated variability in measured levels of NNN in smokeless tobacco products. It dealt with NNN levels measured in dark air-cured, dark fire-cured and Burley tobaccos used to produce smokeless tobacco products over either a six or ten year crop period.

The second IG paper, by Oliver Yiend, AB Sustain, UK, dealt with sustainability, in particular the AB Sustain "Sustainable Tobacco Programme", which was launched in 2016. The programme’s core is continuous improvement of the crop production cycle, with a strong focus on providing supply chain information/data needed to help drive positive change in tobacco processing sites and their supplying farms.

Workshop Cigars

This workshop could easily have been entitled: “All you wanted to know about cigars but never dared to ask.” At the end of the workshop one had a better overall understanding of the diversity of cigars, as well as the difficulties faced by regulators and testing laboratories to handle this diversity.

The three speakers of the workshop approached cigars from different perspectives:

Katherine Ciambone, senior Vice President & Chief Compliance Officer, ITG Brands, USA, presented the regulatory side of cigars. She spoke on the subject of the building blocks of a regulated product and briefly explained why cigars pose a unique challenge to the regulators. She pointed out difficulties in achieving the right balance in regulators' mission concerning cigars.

Michael Hartley, Vice President, Agronomy, Universal Leaf Tobacco Company, USA, presented the agro side view. He gave a detailed description of cigar tobacco, the different production practices and their impact on required quality (which differs greatly to that of cigarette tobacco), and finally the differences between cigars.

Cigars Workshop speakers – Peter Joza, Michael Hartley, Katherine Ciambone



The third speaker was Peter Joza, Director of Science & Technology, Labstat International ULC, Canada. He commented how challenging the testing of cigars could be and the role CORESTA Recommended Methods have played (CRM 64 and 65) on the foundation of the additional testing of mainstream constituents in cigar smoke.

Many questions from the floor were asked and answered and it was agreed that much work still needs to be done, in particular on different reference products. However, the main message was put in a nutshell by the chairman, Rob Stevens, “we need to work together, we have to collaborate.”

Other Presentations

October was somewhat too early for skiing season in Kitzbühel and snow was seen only on the peaks, which was good, and allowed all the participants to fully concentrate on the presentations selected by the Reading Committee. Delegates were offered 133 high level presentations (including posters and Sub-Group and Task Force reports) in different sessions dedicated to filters, biomarkers, cigarette design, physical methods, aerosol characterisation, analytical methods and exposure/liability. Nevertheless, the main focus at this event was in particular e-vapour products, cigars and regulation.



CORESTA has become more and more active in e-vapour products since 2013, responding to an urgent demand by e-cigarette and e-liquid manufacturers, academia, regulators, equipment suppliers, and testing labs. During the Kitzbühel conference, two sessions were dedicated to treating this topic; first the E-Vapour Products session, then the E-Vapour Methods session. The E-Vapour Sub-Group also held its meeting in Kitzbühel with a record number of participants.

On Tuesday afternoon a large poster session took place in K3 Conference Hall. All in all, 54 posters were displayed, presentations were vivid, and many questions and answers were in the air as people circulated in between the rows of poster panels.

Networking Afternoon

The mountains are and will remain wild whichever way you ascend. On Wednesday afternoon, most of the CORESTA delegates used the cable cars to go up the mountain, but a few decided to go up on foot. Once at the summit, all were charmed by the stunning views of the massive mountain ranges from the sunny terrace where a second 'refueling', a delicious buffet lunch, was waiting for them. These moments of relaxation are necessary breaks for participants and offer them the opportunity to network with colleagues and develop new relationships with peers.



Those who chose to return on foot may have had a vague idea of the unimaginable courage needed by downhill skiers to "fly" down the slopes at motorway speed. It made them realise that you have to bear the responsibility of your actions and that mistakes can be irreversible. Independently of transport used, the networking afternoon was highly appreciated by all participants.

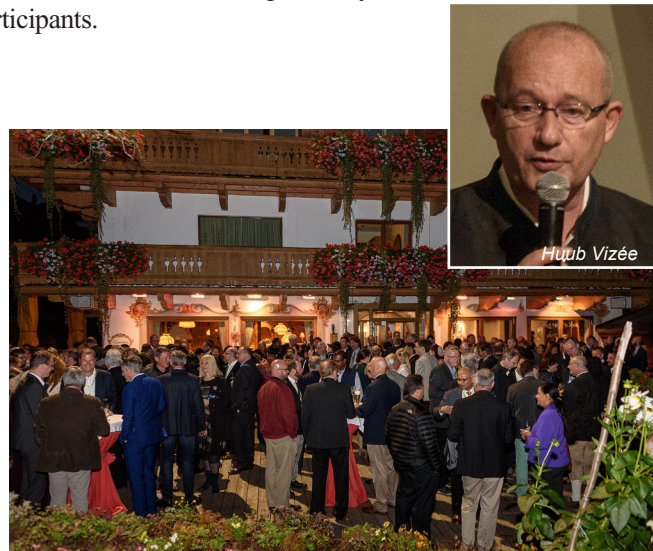
Tyrolean Evening

At the Tyrolean evening at the end of the last day of the event, Huub Vizée, Head of Regulatory Affairs, delfort AG, Chairman of the SSPT2017 Organising Committee, and President of CORESTA Board, underlined the fact that the scientific information is the main priority of CORESTA. Huub was happy that delfort was able to offer this opportunity for so many participants from various backgrounds to present their work. He was impressed by the excellent presentations, and how willing people were to share their ideas with fellow colleagues, discuss their work, and develop new projects.

Thanks to delfort, it is not only world-class skiers who benefitted from Kitzbühel's invigorating atmosphere but all CORESTA delegates and accompanying persons participating at the conference. It was a great event which lifted people to their potential and they certainly went back home 'refueled' by science and Austrian hospitality.

Accompanying Persons

24 accompanying persons made the most of the charming town and surroundings of Kitzbühel, Innsbruck and the medieval castle of Kufstein. They also had the opportunity to visit a traditional glass craftsmanship centre and the world famous Swarovski Kristallwelten. The beauty of the Tyrol region was enhanced by the sunny weather and delicious food.



Joint Meeting of the Agronomy & Leaf Integrity and Phytopathology & Genetics Study Groups

Santa Cruz do Sul, Brazil / 22-26 October 2017



The Oktoberfest was over but the sun was shining, people were smiling and spring was arriving in Santa Cruz do Sul, when the CORESTA AP2017 conference took place from 22-29 October. 258 scientists from 22 countries came to the tobacco capital of the world, to present their work, share and learn from each other. SindiTabaco generously hosted this event for the second time, with contributions from local companies, and made it even better based on their former experience and know-how.

During the week local press and radio provided the Santa Cruz population with a daily briefing on the

event and related how the event was gathering together a fine spectrum of specialists from different sectors: technicians, agronomists, phytopathologists, geneticists, researchers, university professors and other professionals, in one way or another connected to tobacco production.

As per tradition, Sub-Groups, Task Forces and ACAC took the opportunity to organise their own meetings on Saturday and Sunday. Ten meetings in all were organised prior to the conference.



Welcome Reception

The hosts welcomed participants on Sunday, 22 October, by organising a welcome reception at the Santa Cruz Country Club where the President of SindiTabaco and Chairman of the AP2017 Organising Committee, Iro Schünke, announced that it was a great honour to host the event for the second time in twelve years: "Opportunities like this are rare and we are very happy to be able to host this meeting that brings together the world's leading experts in research and development." Responding to the host, Lea Scott, the Vice President of the CORESTA Scientific Commission, thanked the organisers of this year's meeting for their generosity and mentioned that the large number of delegates were proof of the importance of Santa Cruz do Sul to the tobacco industry.

Working Programme

Monday's programme began with the official opening in the central auditorium of the University of Santa Cruz do Sul (UNISC). The theme of the opening paper presented by Iro Schünke was: "Tobacco production in Brazil". CORESTA was honoured to have as a second speaker, the superintendent of the Ministry of Agriculture, Livestock and Food Supply (Mapa) in Rio Grande, Bernardo Todeschini. He gave a presentation on "Brazilian agribusiness overview" and how tobacco fitted into this context. The following session dealt with good agricultural practices (GAP), and the afternoon was reserved for tobacco specific nitrosamines (TSNAs) and biotechnology.



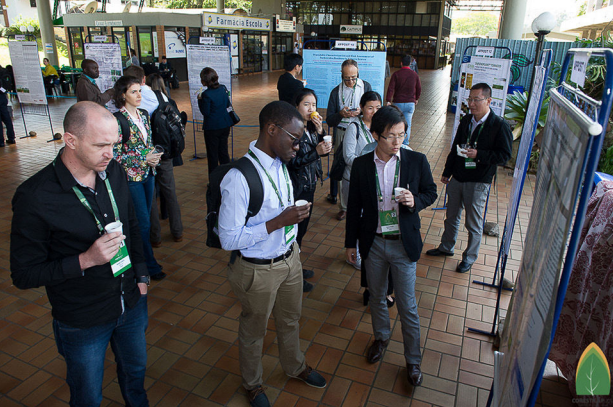


CORESTA AP 2017
Santa Cruz do Sul - Brazil

AP2017 at a glance:

- Hosted by SindiTabaco (with local financial and logistical assistance)
- Held at the University of Santa Cruz do Sul (UNISC)
- 258 delegates, 8 accompanying persons
- 22 nations represented
- Sessions: 14; Workshop: 1
SGTF/Cttee meetings: 10
- Presentations: 54 oral, 2 Intergroup, 11 posters, 10 SGTF reports

Abstracts, available presentations and full texts, published on the CORESTA website www.coresta.org



Tuesday morning was entirely dedicated to production practices, followed by molecular breeding and nutrients sessions in the afternoon. The posters were already on display during the coffee breaks although the main poster session took place the following day. To the great delight of all participants, the Tuesday evening culminated in an amazing Gaucho style barbecue dinner with traditional Gaucho dances and songs.

Following the Wednesday Workshop and tobacco field trip, Thursday was the last day of the intense four-day working programme. The morning presentations covered different topics related to breeding, crop protection agents (CPAs) and residues. The first afternoon session concerned bio-control of diseases and insects and the day ended with the second session on viruses started on Wednesday. At the end of the conference a total of 81 presentations had been made altogether.

Workshop Sustainable Tobacco Production

The Workshop on Sustainable Tobacco Production started early in the morning on Wednesday with five panelists. They were all concerned with maintaining tobacco production and industry in a sustainable way, how to make the most of the advantages of modern technology, and how to transfer tobacco farming knowledge to the younger generations.

The first to speak was Oliver Yiend, Business Development Director for AB Sustain, UK. Oliver explained how he helped to create AB Sustain's Sustainable Tobacco Programme to deliver a service to the tobacco industry. He explained that industry expectations had to be taken into consideration and how farmers could meet its needs.

The second speaker was Lea Scott, Vice President of Agronomy Services at Universal Leaf Tobacco Company, USA. In his presentation on "Agronomic data collection, management, and analysis: an overview of the MobiLeaf system" he pointed out that the tobacco industry is now in the era of big data. He explained that MobiLeaf mobile device could also be used for data collection on child labour prevention.

Iro Schünke, President of SindiTabaco and also President of Growing-Up Right Institute since 2015, took his turn to evoke "Actions against child labour and alternatives to rural youth." These actions are in particular related to offer learning alternatives and professionalisation opportunities for adolescents in rural areas in Brazil so that they stay in the countryside. When asked how to motivate them to do so, Iro explained that adolescents (14-18 years) participating in the Young Apprentice Program received wages for their activities carried out during their schooling.

The fourth speaker of the workshop was Shepard Ndlela, Entomologist in the Plant Health Services Division at the Tobacco Research Board, Zimbabwe. His presentation dealt with "Reshaping pest management in the tobacco agro system: biological control and judicious use of pesticides." He explained how the tobacco aphid, one of the most important pests of economic importance in the world, was managed in Zimbabwe.

The last to speak was Marco Prat, Global Product Integrity Director, JTI Global Leaf Agronomy, Germany, and Chairman of the CORESTA Agrochemical Advisory Committee (ACAC). He presented the ACAC Report with emphasis on how the committee's activities are geared towards sustainable tobacco production where CPA residues are concerned.

Amongst the many questions raised during the discussion period, an important one was addressed to Marco concerning the future of tobacco production: "What is the key message to young people?" He answered that in his time the most important ground rule was simple: "Be humble and learn from others." He added that the tobacco industry had since changed and today the new generation receives much and captures everything. According to Marco, this is not enough and they should also give in return and remember that priority should be the people and this is where CORESTA is important as it should be considered as 'a family'.



Oliver Yiend



Lea Scott



Iro Schünke



Shepard Ndlela



Marco Prat



Excursion

A very educational excursion was organised on Wednesday afternoon. Six buses fully packed with CORESTA delegates visited in turn three different tobacco farms operated by farmers contracted to three companies, Philip Morris, JTI and BAT Souza Cruz. On each farm technicians made short presentations on their tobacco operations. One explained, for example, what kind of protection equipment workers had to wear to avoid green tobacco sickness (GTA). Another one presented a crop calendar showing different tasks to do at the right time of the year. A typical tobacco farm profile was explained at one of the venues, and the ratio of preserved native forest was underlined in another presentation. Delegates could also see tobacco seedling production in Brazilian float systems, different growth stages, curing barns and even attempt to transplant seedlings into the field. Some did it well, some had never tried it before, so it was an experience. All in all, the excursion was interesting for the entire afternoon, people asked many questions and always received thorough answers.

Gala Dinner

The last evening an exquisite dinner was held at the Santa Cruz Country Club by the hosts. The President of the CORESTA Board, Huub Vizée, expressed in his speech satisfaction on the outcome of the event. He said he was pleased with the increasing trend in number of participants and quality of presentations and the overall content of the programme. According to him, this showed the continued support of companies and organisations involved in agronomy and phytopathology issues. And what is more, he added, it demonstrated once again the growing value of international cooperation in the research work carried out by CORESTA and reinforced the association's vision "to be recognised by its members and relevant external bodies as an authoritative source of publicly available and credible science and best practices related to tobacco and its derived products."

Huub warmly thanked SindiTabaco and the other contributors: "The conference was perfectly organised by SindiTabaco, highly appreciated by both CORESTA and delegates. The two events held in Santa Cruz do Sul in 2005 and 2017 have the largest number of participants in the history of the CORESTA Agro-Phyto conference. SindiTabaco has created the perfect environment for networking opportunities, which is a vital part of CORESTA's foundation of existence; we are very grateful for the hospitality of the Brazilian tobacco industry", he concluded, adding a special word of thanks for the excellent work of Carlos Sehn and the AP2017 Organising Committee and the Promopress staff.

Accompanying Persons

In addition to 258 delegates, eight accompanying persons attended the event. They were kept busy with activities such as a city tour of Santa Cruz do Sul, excursions, a fashion show, a dance class, a beauty parlour and spa session, which were much enjoyed. And of course they heartily participated in the delegates' social events during the conference.



CORESTA REPORTS

The following reports have been published on the CORESTA website at www.coresta.org:

- **Agrochemical Residue Field Trials First 3-year Programme Report**
Technical Report [RFT-049-CTR] – September 2017 (Sub-Group Agrochemical Residue Field Trials)
Guidance Residue Levels (GRLs) have been developed by the CORESTA Agro-Chemical Advisory Committee (ACAC) to provide guidance to tobacco growers and those in the tobacco industry with interest in the application of Crop Protection Agents (CPAs) that are in compliance with the implementation of Good Agricultural Practices (GAP). Residue data from field trials complying with label instructions are an essential part of the process to establish GRLs. To this end the Agrochemicals Field Trials Task Force (now a Sub-Group) was established. In the light of the objectives of the group, this report describes the first 3-year trial programme and the main achievements through to 31 December 2015.
- **2014 Preliminary Aerosol Proficiency Study**
Technical Report [EVAP-089-CTR] – October 2017 (Sub-Group E-Vapour)
In 2014, the CORESTA E-cigarette Task Force (now the E-Vapour Sub-Group) conducted a preliminary proficiency study to determine the inter-lab variability for the quantification of the major constituents of e-cigarette aerosol. The study results demonstrated that aerosol delivery for the study samples was relatively variable and that the analyte deliveries for a given product tended to be proportional to Aerosol Collected Mass (ACM) deliveries. Evaluation of analyte results normalised to ACM delivery yielded acceptable r&R values. Based on these results, a follow-up study was recommended and conducted in 2015 which resulted in CORESTA Recommended Method (CRM) No. 84.
- **2017 Collaborative Study of CORESTA Monitor 8 (CM8) 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-134-CTR] – November 2017 (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 2017 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; to verify the conditioned weight for the CM8. The analytical results for the CM8 test piece confirmed that it can be used as a monitor test piece in smoke analysis.
- **12th Round Robin Test for Multi-Capillary Pressure Drop Calibration Standards (2016/2017)**
Technical Report [PTM-112-CTR] – November 2017 (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 in subsequent tests.

CORESTA RECOMMENDED METHODS and ISO

CORESTA CRM No. 85 submitted to ISO

CORESTA has brought a New Work Item Proposal to the International Organisation for Standardization (ISO) Technical Committee on Tobacco and Tobacco Products (TC126).

- ◆ **CRM No. 85 - Tobacco - Determination of the Content of Total Alkaloids as Nicotine - Continuous Flow Analysis Method using KSCN/DCIC.** When the ISO/TC 126 was launching the systematic review of its standard ISO 15152 "Determination of the Content of Total Alkaloids as Nicotine - Continuous Flow Analysis Method" CORESTA pointed out that the Routine Analytical Chemistry Sub-Group was working on an improved method using safer chemistry. The new method was to replace CRM35 - Determination of Total Alkaloids (as Nicotine) in Tobacco by Continuous Flow Analysis, which had been the basis for ISO 15152. Both CRM35 and 85 methods were compared in a collaborative study whose results confirmed the benefit of CRM85 and were published in a Technical Report in March 2017. CRM85 was published in April 2017 and subsequently proposed to ISO/TC 126 to be considered in the revision of ISO 15152. CORESTA's proposal was approved in December 2017, with the launch of a new project (NP) 22980 to replace ISO 15152.

In addition to CRM85, CORESTA has five other CRMs (70, 72, 74, 79 and 81) under development by ISO.

CORESTA REPORTS

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

- **Project 156: Review of Human Abuse Liability Assessments**
(Sub-Group Product Use Behaviour) - Approved August 2017
- **Project 157: CM8 Study Data for ISO/TC126-WG17 (Revision ISO10362-1)**
(Sub-Group Routine Analytical Chemistry) - Approved September 2017
- **Project 158: Best Practices and Crop Protection in Cigar DAC Tobacco**
(Agrochemical Advisory Committee) - Approved August 2017
- **Project 159: 13th Round Robin Test on Pressure Drop Calibration Standards**
(Sub-Group Physical Test Methods) - Approved August 2017
- **Project 160: 13th Collaborative Study on Cigar Smoke Analysis (2017-2018)**
(Sub-Group Cigar Smoking Methods) - Approved December 2017
- **Project 161: Status Summary of Biomarkers of Effect/Harm**
(Sub-Group Biomarkers) - Approved October 2017
- **Project 162: Phenols (CRM78) Collaborative Study Technical Report**
(Sub-Group Smoke Analytes) - Approved September 2017
- **Project 163: Periodic Review of CRMs (Review of CRMs 58, 63 and 70)**
(Sub-Group Smoke Analytes) - Approved October 2017
- **Project 164: Mouse Lymphoma Assay Inter-Laboratory Proficiency Study**
(Sub-Group In Vitro Toxicity Testing) - Approved October 2017
- **Project 165: Neutral Red Uptake Assay Inter-Laboratory Proficiency Study**
(Sub-Group In Vitro Toxicity Testing) - Approved November 2017
- **Project 166: 6th Round Robin Test on Filter Ventilation Calibration Standards**
(Sub-Group Physical Test Methods) - Approved October 2017
- **Project 167: 11th Collaborative Study on Physical Parameters**
(Sub-Group Physical Test Methods) - Approved October 2017
- **Project 168: Presentation at the International Conference on Environment Mutagens 2017 in Incheon, South Korea, November 2017**
(Sub-Group In Vitro Toxicity Testing) - Approved October 2017
- **Project 169: Scientific Evidence on Very Low Nicotine Cigarettes (VLNC)**
(Sub-Group Product Use Behaviour) - Approved November 2017
- **Project 170: Metals Collaborative Study**
(Sub-Group Tobacco and Tobacco Products Analytes) - Approved November 2017
- **Project 171: Water and Moisture (OV) Interlaboratory Study**
(Sub-Group Tobacco and Tobacco Products Analytes) - Approved November 2017
- **Project 172: Water Activity Proficiency Test**
(Sub-Group Tobacco and Tobacco Products Analytes) - Approved November 2017

CORESTA GUIDES

New - CORESTA Guide No. 20

Biomarker Studies - Requirements for the Certification of Analytical Reference Standards (*Sept 2017*)
[BMK-027-CTG]

CORESTA Guide No. 20 presents the minimum requirements for a Certificate of Analysis for chemical reference standards used for identification or content determination to support analytical and bioanalytical work. This is viewed as essential to reinforce the validity of the analytical and bioanalytical results generated by the industry and independent testing laboratories. The guideline is applicable for current and future work undertaken by the CORESTA Biomarkers Sub-Group.

Biomarkers Sub-Group Meeting (Kitzbühel, Austria)

The Biomarker Sub-Group (BMK SG) met in Kitzbühel, on 8 October 2017, prior to the SSPT2017 conference. This BMK SG meeting was the most attended over the past few years with the participation of 38 delegates.

At this meeting several topics pertaining to the objectives of the BMK SG were discussed, which led to some important action items: 1) A presentation on the application of biomarkers used in clinical pharmacology studies and their application to tobacco products, led to a potential new project on meta analyses of data on biomarkers of effect; 2) Further to completion of the interlab comparison of bioanalysis of NNAL, new follow up projects were discussed; and 3) Similarly, after the publication of the first technical guide on reference standards used in the bioanalysis of tobacco consumers, a potential new project on categorizing biomarker assays was proposed.

A writing committee for working on a critical review on biomarkers of effect, with a focus on lung biomarkers, was introduced and the project plans were presented. In a separate presentation, results from a clinical study aimed at evaluating changes in the biomarkers of effect in smokers who switched to electronic cigarettes were presented. Another presentation outlined the development of a data-sharing platform known as INTERVALS.

An additional important outcome from this meeting is that both BMK SG and In Vitro Toxicity Testing SG will share meeting agendas, meeting presentations, and promote participation in each other's meetings to foster collaboration between the Sub-Groups.



Participants at the BMK SG meeting in Kitzbühel

Tobacco Biotechnology and Omics Task Force

The Tobacco Biotechnology and Omics Task Force (TBO TF) was proposed by Dongmei Xu and Marcos Lusso of Altria Client Services. The New Work Item Proposal was forwarded to the CORESTA Scientific Commission on 29 May 2017, and Project TBO-151-CTR was approved with only minor modifications on 9 June 2017. The TBO TF has the single objective of producing a Technical Report (TR) that will be published on the CORESTA website by the end of 2018. The TR will objectively summarize and interpret the scientific literature concerning the use and application of biotechnology and omics-based technologies on crops and agriculture around the world, and will include the benefits, risks, and outcomes of biotech crops since their initial adoption in 1996. The TR will also provide an unbiased, science-based assessment of the potential use of biotechnology and omics (such as genomics, transcriptomics, proteomics, and metabolomics) in tobacco, and give a perspective on these technologies as they relate to the future of the tobacco industry and the global leaf supply. The final part of the TR will be a glossary that will provide clear and concise definitions of terms and nomenclature used in the report, written in a way that will be readily accessible to both technical and non-scientific audiences.

The first TBO TF meeting was held at the AP2017 conference in Santa Cruz do Sul on 22 October 2017. Approximately 30 people attended the introductory presentation, during which potential subject areas were presented and discussed. Ten people expressed their willingness to participate in the TF. The initial goal of the TBO TF is to finalize an outline for the TR by the end of 2017. The subject areas and the format of the TR will be determined by consensus of the TF members. Literature/reading assignments will be made in early 2018, with the expectation that writing will commence before the summer. The draft document will be assembled by September of 2018, and the edited version will be presented at the CORESTA Congress in China in October 2018. The intention is to have the final TR published on the CORESTA website by the end of December 2018, after which the TF will be disbanded.



David ZAITLIN
TBO TF Coordinator

CORESTA COMMUNICATION AT EXTERNAL EVENTS

12th International Conference and 5th Asian Congress on Environmental Mutagens (ICEM-ACEM 2017)



CORESTA had the opportunity to show the scientific activities of its In Vitro Toxicity Testing Sub-Group (IVT SG) at the 12th International Conference and 5th Asian Congress on Environmental Mutagens held in Incheon, South Korea, from 12-16 November 2017. The IVT SG activities (establishments, inter-laboratory proficiency studies, *in vitro* whole smoke) were presented by Kei Yoshino, Coordinator of the IVT SG, at one of the symposiums entitled "Overview of the Application of Genetic Toxicology to International Tobacco Product Regulation" chaired by Martha Moore (Ramboll Environ, USA; Member of the US Environmental Mutagen and Genomics Society and the United Kingdom Environmental Mutagen Society). This gave CORESTA the chance to provide visibility to its global scientific work at an event where *in vitro* science was discussed.

Next Generation Nicotine Delivery (NGN 2017)



CORESTA was once again invited to speak at an event dedicated to what is generally named the « vape industry ». After the Electronic Nicotine Delivery Systems (ENDS) conference in London and the Global Forum on Nicotine (GFN) in Warsaw, both in June and reported in Newsletter No. 48, CORESTA was part of the Next Generation Nicotine Delivery (NGN) conference held 14-15 November, in London.

The programme was very diverse, with political, medical, analytical, industrial and regulatory views. The CORESTA Secretary General, Pierre-Marie Guitton, presented on CORESTA's "Contribution to Develop Standards for The Global Vapour Industry." Although his presentation was based on that presented at the ENDS conference by Derek Mariner in June, Pierre-Marie addressed some 250 participants with focus on the need for laboratories to join in collaborative work within CORESTA or within national standardisation bodies. The process of developing robust methods and the contribution of CORESTA in the international standardisation process raised much interest. The vape industry is young and is facing a number of challenges that others have learned to tackle and for which they have developed expertise. Collaborative work will be the key to science based information on the risk continuum and the relative position of the new and future nicotine delivery devices.

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

CORESTA Board Meeting

The Board Member representatives present in Kitzbühel for the SSPT2017 took the opportunity to organise a meeting on Sunday, 8 October. Three main topics were discussed during a half-day meeting:

- Board Committees (Administration & Finance, Events, Science Communication, IT-Website, Strategy). The scopes and Committee Members had been reviewed in June and the chairmen presented updates on action plans.
- CORESTA Monitor. As the ninth version (CM9) was encountering regulatory issues, an action plan was defined to meet the proper EU persons and explain the importance of the test piece for regulators and laboratories worldwide.
- Tobacco Heated Products. CORESTA must contribute to the scientific work regarding these innovative products and the interest raised. An ad hoc group was constituted to define the next action steps, which will be endorsed by the Scientific Commission and Board early January.



UPCOMING CORESTA MEETINGS (2018)

Meeting	Date	Location
Agrochemical Advisory Committee (ACAC)	14 January	Myrtle Beach, SC, USA
TF Project Management Office (PMO)	17 January	Myrtle Beach, SC, USA
Scientific Commission	18-19 January	Myrtle Beach, SC, USA
SG In Vitro Toxicity Testing (IVT)	January*	Southampton, UK
Board	27-28 February	Guangzhou, China
SG Smoke Analytes (SMA ex SPA)	April*	UK*
SG E-Vapour (EVAP)	April*	UK*
SG Routine Analytical Chemistry (RAC)	April*	UK*
SG Tobacco and Tobacco Products Analytes (TTPA ex STS)	April*	UK*
SG Product Use Behaviour (PUB ex TSB)	April*	Geneva, Switzerland
SG Biomarkers (BMK)	April*	Geneva, Switzerland
SG Cigar Smoking Methods (CSM)	20 April	Cava de' Tirreni, Italy
Infestation Control Conference (PSMST)	7-8 May	Winston-Salem, NC, USA
SG Pest and Sanitation Management in Stored Tobacco (PSMST)	9-10 May	Winston-Salem, NC, USA
SG Physical Test Methods (PTM)	24 May	Austria*
CORESTA CONGRESS	22-26 October	Kunming, China

* Date / Location to be advised



The **2018 CORESTA Congress** will be held at the Intercontinental Hotel Kunming in Kunming, China, from 22-26 October, kindly hosted by the China National Tobacco Corporation (CNTC).

Kunming is the capital city of Yunnan Province in southwest China. Known as "the City of Eternal Spring" due to its climate and blooming flowers all year round, it has a history covering over 2400 years and is now a prosperous modern city. It is the Province's political, economic, communications and cultural centre and the seat of the provincial government. The city consists of

an old city, a modern commercial district and residential and university areas. It is located at the edge of the large Lake Dian and surrounded by temples and impressive hill landscapes.

The CNTC is actively preparing the Congress and will have a website online early 2018 with all the relevant information required for delegates to plan their attendance.



*Season's Greetings from the CORESTA Staff!
Merry Christmas, Happy Holiday Season,
and all the best for the New Year 2018.*



The Insect Free Post

CORESTA Sub-Group on Pest and Sanitation Management in Stored Tobacco Issue 7 – November 2017

Sub-Group objectives:

- To educate about, and promote best Integrated Pest Management practices for post-harvested tobacco worldwide.
- To conduct collaborative studies on pest control and sanitation practices for post-harvested tobacco.
- To investigate new technologies and issues related to infestation control in post-harvested tobacco.

There have been a number of developments and events since the last Post from the Sub-Group in 2014. Here are some of the highlights:

Infestation Control Conference



ICC 2015 was held in Lilongwe, Malawi, on 18-19 May and ICC 2017 was held in Santa Cruz do Sul, Brazil on 8-9 May thanks to the support of Universal Leaf and Limbe Leaf (2015) and SindiTabaco and BAT (2017). There was good participation at both events with about 70 attendees each. There was a good mix of leaf suppliers, fumigators and logistics in Lilongwe while in Santa Cruz do Sul the majority of attendees were leaf suppliers.

In addition to the consistent ICC presentations the attendees had the privilege to hear about the importance of tobacco to Malawi and Brazil and pest control from members of the Malawi Tobacco Beetle Monitoring Committee (MTBMC) and from the president of SindiTabaco.

The conferences included field demonstrations of phosphine fumigations, emphasizing safe and proper fumigation practices.



Following the training, participants divided into groups and were presented with real life scenarios and asked to apply what they learned.

Sub-Group Meetings

In addition to the research presentations and discussions about Sub-Group activities (highlighted in the Headlines section), the past three meetings all had unique elements to them.

In Lilongwe (2015), recognizing the impact that the MTBMC could have on the significant pest control issues in the region, the Sub-Group invited the Committee to share about their efforts to address the issues.



The CORESTA Congress was held in Berlin in 2016. The Sub-Group had its meeting in conjunction with the Congress giving many Sub-Group members the opportunity to experience a CORESTA Congress for the first time.

In Santa Cruz do Sul (2017), following a presentation of research being done at the university about using parasitoid wasps to control beetle populations in tobacco, the Sub-Group was given a tour of the entomology laboratory at the university by Prof. Köhler.



Headlines

The current methods of treating tobacco for infestations are fumigation with phosphine, freezing, or controlled atmospheres (CA). Phosphine resistance continues to be a major concern of the Sub-Group. Efforts are underway to better understand the mechanisms of phosphine resistance and to establish parameters needed to kill positively identified strong resistant cigarette beetle strains. CA parameters are being re-evaluated in light of reports of CA failures. Research is ongoing to investigate the efficacy of alternate fumigants.

The next ICC and Sub-Group meeting will be held in Winston-Salem, NC, USA, on 7-8 May and 9-10 May 2018, respectively.

For more details on any of the subjects covered in this Newsletter please contact your local CORESTA Sub-Group representative.