

# 담배煙氣와 關聯한 CORESTA 學術活動 現況

## 이 문 수

한국인삼연초연구원 분석검사부

## 요 약

최근 담배연기 성분에 대한 사회적 문제점이 대두되면서 이들 성분에 대한 분석법의 개발과 감소방안에 대한 연구에 CORESTA가 주도적 역할 담당하고 있으며, 국제 공동 연구 등을 통하여 담배산업에 대한 각종 규제와 압력에 공동대처 방안을 모색하고 효과적인 정책수립에 기여하고 있다.

이에 그 동안 CORESTA의 국제 공동연구 현황을 소개하고, 담배연기성분에 대한 효과적인 연구 방향을 설정하므로써 담배산업의 발전을 위한 기초자료를 제공하고자 한다.

## CORESTA Membership

- 22nd General Assembly (1998.Oct,15,U.K.)
- 194 Full members, 53 Countries, 58% of them from Europe
- 1956, Founded
- Since, KGTRI(Member 158), KT&G.

## 23rd Coresta General Assembly(2000,Oct.19th)

- English as only working language Documents and Abstract.
- French version for minutes of general assembly, internal rules.
- Dr. P. Sadler, President of the Coresta Board
- Dr. M. Rocha, President of the Scientific Commission

## Completed Working(2000)

- Pub. Tobac. Monograph by Blackwell Science(99)
- Pub. Review on Compensation(99)
- Conclusion of the T.F. on Filter Vent.(RM No.6)
- F/R, Roll-Your-Own Tobac.(Bull.1999-2)
- F/R, Genetically Modified Tobac. Detection Method(1999-3)
- F/R, Cig.Butt Degradability
- Survey of Indoor Air Quality,Ventilation and Smoking Activity in Restaurants(KGTRI/7members)
- F/R, Cig. Ignition Propensity

## New Task Force/Set up

- TF Genetically Modified Organisms; Detection Method(98), Collaborative Study(00)
- TF Filter Ventilation(98)
- TF Cig.Paper Combustibility(98)
- TF Sidestream Smoke(99)
- TF Special Analytes(99)
- TF Alternative Smoking Regimes(00)

## Interesting Topics

- The Canadian Regulatory Situation, by P.Dunn(99,U.K.)
- Roll-Your Own, by P.Sadler(99, Brazil)
- Low Tar Cigarette, by R.Baker(00,Holland)
- Regulations on CO, by H.Thomsen(00,Holland)

## Scientific Commission

- Smoke Group
- President, Y. Saint-Jalm(Altadis-Seita)
- Vice President, D Mariner(BAT)
- Secretary, M.Ogden(RJR)
- Members, R. Hofer(PM Swiss) & K.G. Hoppe(Tabacofina)
- Technology Group
- President, J. Hollweg(BAT)
- Vice-President, J. Boder(PM)
- Secretary, N. Sinclair(JTI)
- Members, I. Bailay(Imperial) & K. Thelen(Wattens Papier)

## Agronomy Study Group(3)

- S/G, Harvesting & Curing of Tobacco(90), Peele,RJR.
- S/G, Alternative Transplant Production Technologies(93), C.Nicolas, Anitta, France.
- S/G, Good Agricultural Practice(97), B. Blair, TRB,Zimbabwe.

## Phytopathology Study Group(11)

- S/G, Pest and Sanitation Management in Stored Tobacco (93), L.Ryan,PM.
- S/G, Blue Mould Warning Service (63), F. Jacob, Coresta.
- S/G, Collaborative Study of Blue Mould Pathogenicity (64), J.Verrier,Seita.
- S/G, Black Shank Collaborative Study(90), M.Nielsen, KT Univ.
- S/G, Collaborative Study on Potato Virus Y(95),J.Verrier, Seita.
- S/G, Collaborative Study on Bacterial Wilt(95), A.Robertson, TRB,Zimbabwe.

- S/G, Collaborative Study on Broomrape (95), K.Wegmann, Tübingen Univ.
- S/G, Collaborative Study on Post Plant Resistance to Insects (95), A. Johnson, Clemson Univ.
- S/G, Update of the Nicotiana Catalogue (93), V.Sisson, NC Univ.
- T/F, Methodology for Detection of Genetically Modified Organisms(GMO s) (98), F.Gadani, PM.

## Smoke Study Group(8)

### 1. S/G, Pesticide(72), J.Renaud, de Tabac Reunies, Swiss

Object:

- , To recommend method for pesticide residues.
- , To prepare control tobaccos, with residues of identified pesticides for the purpose of testing RMs.
- , To organise ring trials in a regular programme so that results from methods used at member labs. Contract facilities may be assessed for agreement.
- , To research and circulate, within the Sub-Group, member information relevant to pesticide residue analysis.

#, R/M, No.4, Maleic hydrazide residue,1976,76/2(Bull.)

#, R/M, No.2, Organochlorine pesticide,1977,77/1(Bull.)

#, R/M, No.1, Dithiocarbamates, 1978,78/2(Bull.)

### 2. S/G, Cigar(72), G.Poppe, Tobacofina.

Object:

- , To investigate the technical problems associated with mechanical smoking of cigars.
- , To develop a method for the mechanical smoking of cigars that provides a credible and useful comparison of the smoke chemistry of cigars of all shapes and size.
- , To prepare and publish a practical method for sampling and mechanical smoking of cigars which meets the second term of reference.

**3. S/G, Routine Analytical Chemistry(85), H. Thomsen, House of Prince, Denmark.**

Object:

- , To develop and update CORESTA Recommended Methods as requested by the Scientific Commission.
- , To check on an annual basis the CORESTA monitor test piece by conducting collaborative experiments.

**4. S/G, Environmental Tobacco Smoke(87), M. Ogden, RJR.**

Object:

- , To develop Coresta Recomm. Methods for the determ. Of various constituents in ETS as requested by Scientific Commission.
- , To study the effectiveness of vent. & design of various smoking location.
- , To provide recommendations for conducting representative sampling and to provide guidance on the interpretation of ETS measurements in the context of overall air quality.
- , To review the relevant studies, experiments and publish the Chem.& Physical properties of SS/ETS.

**5. T/F, Metals in Tobacco & Smoke(73), R.Cox,PM,USA.**

Object:

- , To gather, file and document literature references on metals in tobacco and tobacco smoke.

**6. T/F, Sidestream(99),J. Piade,PM Swiss.**

Object:

- , To develop a method for the collection of sidestream cigarette smoke and the measurement of its taqr, nicotine and carbon monoxide content.

**7. T/F, Special Analytes(99), H.Klus, Austria Tabak, Austria.**

Object:

- , To develop methods for the determination of some components of cigarette smoke to be specified by the Scientific Commission.
- , In the first instance these components are tobacco specific nitrosamines(NNK,NNN,NAB and NAT) and B(a)P.

**8. T/F,Alternative Smoking Regimes(00), M. Borgerding, RJR. & Y. Saint-Jalm, Seita.**

Object:

- , To develop correlation models for smoking yields between ISO and representative alternative smoking regimes.
- , In the first instance the models will address tar/nicotine/CO. This will be followed by benchmarking the yields of specified smoke constituents from international products.
- , Smoke constituents will be specified by Scientific Commission.

**Technology Study Group(2)**

- President, J.Hollweg,BAT, Germany.
- Vice President, J. Boder, PM, Swiss.
- Secretary, N. Sinclair, JTI, Swiss
- Concerned with the study of technologies, processes and operation of tobacco processing and manufacture facilities, physical properties, quality aspects, environmental protection.

**1. S/G, Environmental Protection in Production(95), D. Robinson,BAT,UK.**

Object:

- , To develop methods, make recommendations concerning the use and applicability of exciting methods for the determination of specific constituents in the atmospheric emission of tobacco factories.
- , In the first instance, concentrate on methods for odor, nicotine, VOC, and measurements of tobacco dust in factory emission.

- , To procedure and periodically update, surveys of methods available for reducing/eliminating odor in factory emission and effluent. For each method, the cost, efficiency, pros and cons, and any specific experience of CORESTA.
- , To document legislation from various countries.
- , To keep abreast of document, state of the art methodology from other industries.
- , To liaise with the Pest and Sanitation Management in Stored Tobacco S/G. with emission from fumigations for infestation control in cured tobacco.

**T/F, Cigarette Paper Combustibility(98), K. Thelen, Wattens Paper, Austria.**

Object:

- , To develop a reproducible laboratory method for the measurement of cigarette paper combustibility.
- , The method should include guidelines for how results from the measurement may be used and any limitations, if any, for the use of results.

**Special Committees Reporting Directly to the Scientific Commission**

#, Agro-Chemical Advisory Committee(90), L. Muller, JTI, Germany.

- , S/C for the purpose of supporting the needs of the industry with regard to agro-chemical issues.
- , Agro-chemicals, Leaf production, Regulatory issues, Transgenic tobaccos varieties.

#, Committee on Smoking Behavior(96), R. Baker, BAT, UK.

- , To critique and terms of review published papers on smoking behavior and publish the critical review in a peer-reviewed journal.
- , To identify gaps in total information and suggest suitable work to provide the information.

**List of Hoffman s Compounds in MS/SS**

- ◊ Proposed FTC(96),MS,TX,MT,FL,(97)
- ◊ B.C,Canada(98),Tobacco Control Program(99).
- ◊ Brazil,etc.

#, Ammonia, Aromatic amines(4), PAH(BaP), Crbonyls(8), Vapor phase(3), Metals(7), Oxides of Nitrogen(2), Nitrosamines(6), Semi-Volatiles(4), Phenols(6), pH, Tar(Nicotine/Water), Volatiles(6). Total 44s

## Test Conditions

	Standard ISO	Realistic Smoking
Puff Vol.	35mL	56mL
Puff Int.	60secs	20secs
Puff Dura.	2secs	2secs
Vent. Holes	Not Blocked	Blocked

- If will refer to realistic smoking condition, even 2 or 3 times high value with each compounds.
- Those conducted by Health Canada and the FTC.

## Results of ETS S/G Study

- Report to CORESTA, Survey of indoor air quality, ventilation, and smoking activity in restaurants(Part1),97., Part 2),98. Final report to Coresta Committee(99).
- Draft Report to Coresta, Environmental Tobacco Smoke Analysis Collaborative Study Program, July,2000, 11 Labs., Coresta Recommended Methods and ISO.
- Next Meeting,June 21, Munich, Germany.

## Results of SS T/F Study

- Initiated in 1987(30 Part., 24 Organ.)
- Impact of change in ISO norms for MS on SS methods(Fishtail Chimney)
- New Organization, Geneva, June 99.
- Still 3 times Colla. Study.(18 Labs.)
- Draft 3 CORESTA Sidestream T/S, Determination of Tar/Nicotine is Sidestream Smoke.
- Next Meeting, May 31th in Paris(Final Discuss).



## Results of Special Analytes T/F Study

- First Meeting in Vienna, June 15th 99. Based on the proposal of SC in Feb.99. Refer to political situation in USA and Canada(Hoffman s 44 Subs.)
- To development & Validation of Determination of BAP and TSNA in MS.
- BAP is HPLC with Fluorescence Detection or GC/MS.
- TSNA is Determination by GC/TEA.
- 2 Times Trial Study, 3rd trial for BaP and TSNA.
- Next Meeting,May 22th in Bristol UK.