



Tobacco and Tobacco Products Analytes Sub-Group (TTPA) Annual Report

CORESTA SSPT – Hamburg, Germany

October 10, 2019



- ❖ **Coordinator and Scientific Commission Liaison**
 - Karl Wagner, Ph.D. (Altria Client Services, United States)
- ❖ **Secretary**
 - Johan Lindholm, Ph.D. (Swedish Match, Sweden)
- ❖ **Established in November 2008**
- ❖ **Meet twice a year**
 - ~ 50 attendees
 - ~ 40 companies represented
- ❖ **Meetings since 2018 CORESTA Congress, Kunming, China**
 - 24th meeting – Richmond, United States (April 2019)
 - 25th meeting – Hamburg, Germany (October 2019)



Sub-Group Objectives

- ❖ To organise the manufacture of and maintain smokeless tobacco reference products (CRPs)
- ❖ To propose and maintain CORESTA Recommended Methods (CRMs) and related documents for the analysis of tobacco and unburned tobacco products
- ❖ To organise interlaboratory testing



CORESTA Reference Products

- ❖ CRP 1.1: Swedish style snus pouch
- ❖ CRP 2.1: American-style loose moist snuff
- ❖ CRP 3.1: American-style loose dry snuff powder
- ❖ CRP 4.1: American-style (chopped) loose-leaf chewing tobacco

2009 CRPs



2016 CRPs





Supply of 2009 CRPs

	Dec 2009	Dec 2010	Dec 2011	Dec 2012	Dec 2013	Dec 2014	Dec 2015	Dec 2016	Dec 2017	Dec 2018	Sept 2019
CRP 1	7000	6135	5443	4895	3975	3242	1992	1195	1160	1134	1086
CRP 2	7020	6363	6093	5082	4453	3680	1723	620	592	576	528
CRP 3	7040	6653	6207	5520	5113	4691	4191	2169	2063	1915	1867
CRP 4	7000	6806	6567	6374	6236	6040	5686	2309	2278	2218	2177



Supply of 2016 CRPs

	Apr 2016	Dec 2016	Dec 2017	Dec 2018	Sept 2019
CRP 1.1	10000	9312	8873	8382	7860
CRP 2.1	10000	9061	8285	7348	6450
CRP 3.1	7000	6340	6040	5691	5025
CRP 4.1	7200	6769	6563	6149	5828

❖ Collaborative studies to assess stability:

- Nicotine,
- TSNAs,
- pH,
- Moisture (oven volatiles)

❖ Stored at -20 °C

❖ Distributed by North Carolina State University

Ground Tobacco Reference Products

University of Kentucky, Center for Tobacco Reference Products



Dark Fire
Cured



Flue Cured



Dark Air
Cured



Oriental



Burley



Flavored
Cigar Filler



Unflavored
Cigar Filler

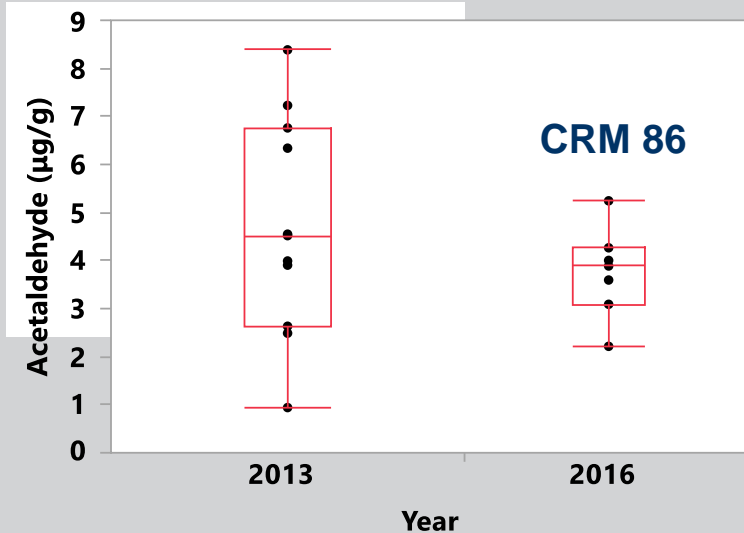


Documents Published (past 12 months)

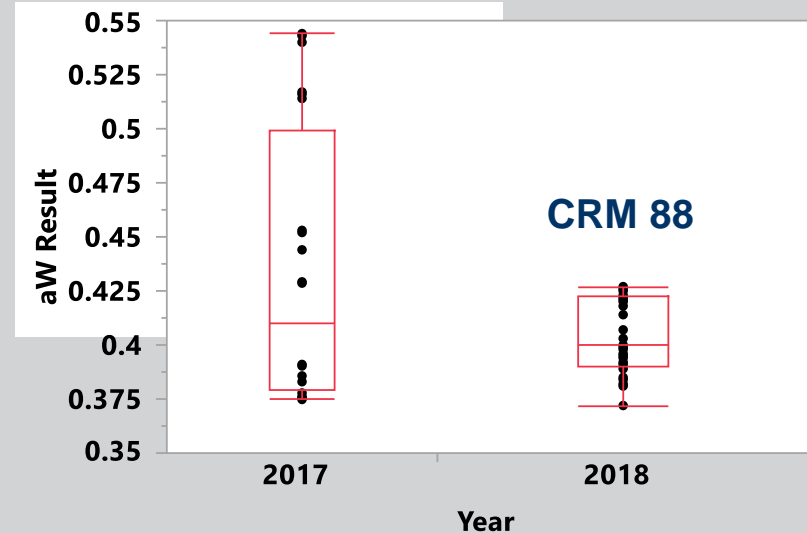
- 1) 2018 Collaborative Study for the Determination of Water Activity of Tobacco and Tobacco Products (Jan 2019)
 - 2) CRM No. 88 - Determination of Water Activity of Tobacco and Tobacco Products (Jan 2019)
 - 3) 2017/2018 Collaborative Study PAHs in Tobacco and Tobacco Products (April 2019)
 - 4) CRM No. 91 - Determination of 15 PAHs in Tobacco and Tobacco Products by GC-MS/MS or GC-MS (April 2019)
- **26 Technical Reports and 16 CRMs have been published since the inception of the Sub-Group**

❖ Comparison of variability between initial and final studies

Carbonyls - CRP 2 (Moist Snuff)



Water Activity - CRP 3.1 (Dry Snuff)





Ongoing Work Items

- 1) **Metals collaborative study**
 - **Finalize technical report and CRM**
- 2) **Update the CORESTA Technical Guideline for sample handling of STPs**
 - **Finalize technical report and guide**
- 3) **Modify CRM 62 (GC-FID) and CRM 87 (GC-MS) for very low nicotine containing products**
 - **Finalize technical report, and revise CRMs**
- 4) **Maintenance of the CORESTA Reference Products**
 - **10-year stability study for 2009 CRPs**
 - **Biennial 2016 CRP stability study**
 - **Draft technical reports**



New Work Items

- 1) Joint Study with EVAP Sub-Group: Nicotine and nicotine degradants proficiency study for tobacco free nicotine pouches and e-liquids**
- 2) Characterization of University of Kentucky reference cigars for un-burned analytes**



Constituents of Regulatory Concern

Unburned Tobacco Filler (cigarettes, cigars, RYO, etc.)

Constituent	CRM	ANVISA (Brazil)	Health Canada	China STMA	US FDA
Nitrate	36	✓	✓	✓	NA
Humectants	60, 61	✓	✓	✓	NA
Nicotine	62, 87	✓	✓	✓	✓
pH	69	✓	✓	✓	NA
TSNAs	72	✓	✓	✓	✓
Moisture	82	✓	✓	✓	NA
Ammonia	79	✓	✓	✓	✓
B[a]P	82	✓	✓	NA	NA
Metals	TBD	✓	✓	✓	✓

NA = not required



Constituents of Regulatory Concern

Smokeless Tobacco

Constituent	CRM	ANVISA (Brazil)	Health Canada	Swedish NFA	US FDA
Nitrate	36	✓	✓	NA	NA
Humectants	60, 61	✓	✓	✓	NA
Nicotine	62, 87	✓	✓	NA	✓
pH	69	✓	✓	NA	✓
TSNAs	72	✓	✓	✓	✓
Moisture	82	✓	✓	NA	NA
Ammonia	79	✓	✓	NA	✓
B[a]P	82	✓	✓	✓	✓
Carbonyls	86	NA	NA	NA	✓
Metals	TBD	✓	✓	✓	✓



Benefits to the Scientific Community

- ❖ **Production and maintenance of CRPs**
- ❖ **Development of robust methods with defined repeatability and reproducibility values**
- ❖ **Interlaboratory studies**
 - **Provides laboratory performance feedback**
 - **Supports ISO 17025 accreditation**
- ❖ **Study results and methodology are a source of engagement with authorities and regulators**



Acknowledgements

- ❖ **Participating laboratories and their management's support**
- ❖ **John Bunch**
 - **WG4 Coordinator (reference products)**
- ❖ **Michael Morton**
 - **Statistical Support**