



Sub-Group Agrochemicals Analysis AA (1972)

2018 CORESTA Congress

Kunming, China

24th October 2018



AA SG – Objectives

- ❖ To perform **regular proficiency testing** of **Multi-Residue Methods** for the analysis of agrochemical residues on tobacco.
- ❖ To undertake **joint experiments** to resolve unanswered questions arising from proficiency tests; to expand knowledge base on agrochemical residues and their analysis.
- ❖ To produce and maintain a series of **Technical Notes** (on different agrochemical residue classes and selected individual compounds) to supplement the **Technical Guideline** and aid method development and improvement.



AA SG – Governance

Coordinator

- Masahiro Miyoshi – Japan Tobacco Inc., Oyama, Japan

Secretary

- Heather Westberg – Global Laboratory Services Inc., Wilson – NC, USA

Liaison

- Keisuke Nakayama – Japan Tobacco Inc., Tokyo, Japan

AA SG moved from Product Technology into Agronomy & Leaf Integrity Study Group in 2016



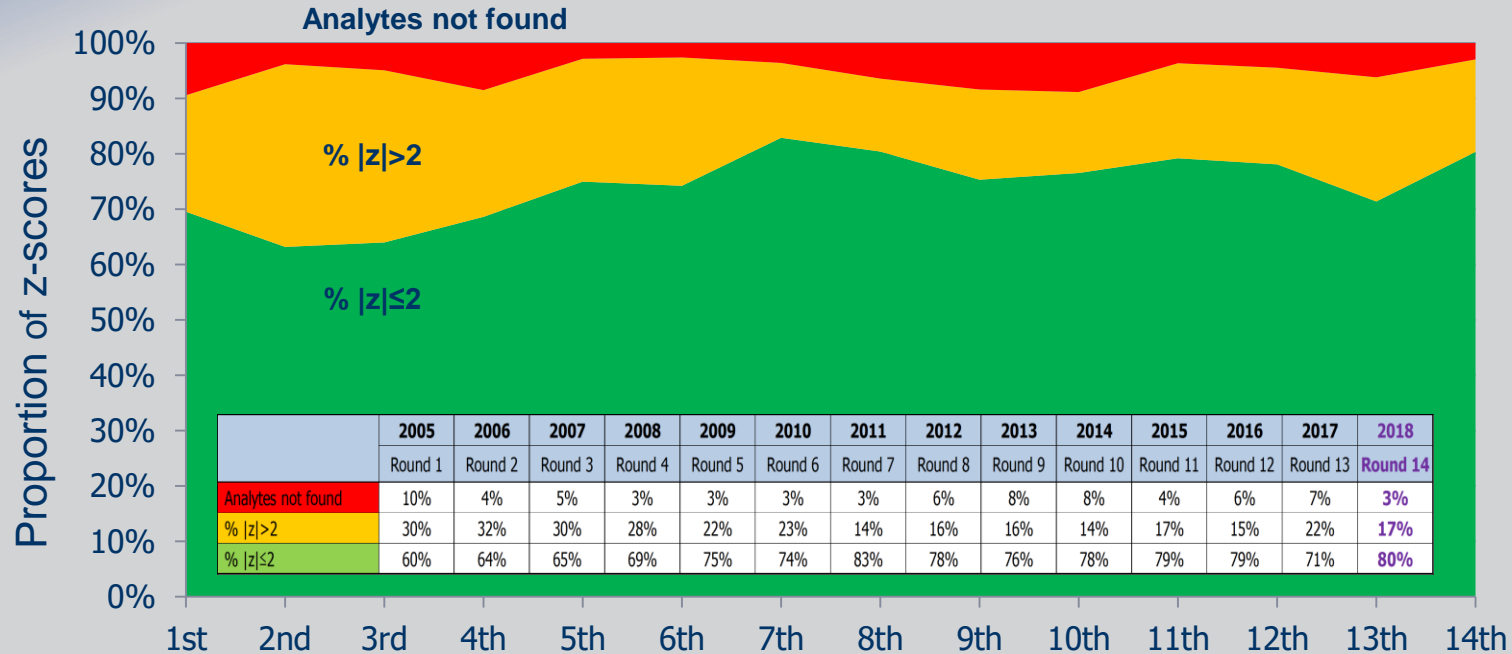
Proficiency test 2018 (FAPAS FT0114)

- CPAs defined in CORESTA Guide No.1 and its candidates
- Direction on reporting the sum of CPAs
 - Residue definition and Conversion factor
- Test materials (artificially spiked and agronomically incurred)
 - 17 CPAs spiked on blank Burley tobacco
 - 12 CPAs in incurred Burley tobacco (provided by the RFT SG)
- 25 laboratories from 19 countries
- z-score evaluation
- FAPAS Report (May 2018)
- Analytical methods from the laboratories included in the FAPAS Report



AA SG - Activities

z-score trend (FAPAS FT0101-FT0114)





Follow-up of Joint Experiment Technical Study (JETS) 17/1 on Maleic Hydrazide

- Review of the outcome of JETS 17/1
- Tobacco plant metabolism study with [¹⁴C] maleic hydrazide
- Made a summary of the current findings for submitting to the ISO/TC 126/SC 2, in response to Resolutions 88/2016 and 94/2018 regarding ISO 4876:1980

CORESTA Guide No. 5

- *“Technical Guideline on Pesticide Residues Analysis on Tobacco and Tobacco Products”* was revised in October 2018.

Technical Note #001 (Maleic hydrazide)

- Revised in October 2018

2018 AA SG meeting


- ❖ Gothenburg (Sweden) on June 27-28, 2018
- ❖ Hosted by Eurofins-Sweden
- ❖ 25 participants from 13 countries





Communication at external event

- Participated in EPRW 2018 (12th European Pesticide Residue Workshop) in Munich, Germany, from 22 to 25 May
- Poster presentation entitled “CORESTA Agrochemicals Analysis Sub-Group”
- After the EPRW 2018, several laboratories inquired for participating in the proficiency test.


CORESTA Agrochemicals Analysis Sub-Group

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INTRODUCTION

CORESTA is an association founded in 1956 to promote international cooperation in scientific research relative to tobacco and its derived products. CORESTA established the Agrochemicals Analysis Sub-Group (AA-SG) in 1972 to improve methods for the analysis of the most used Crop Protection Agents (CPAs) in tobacco production. The group's objectives are 1) to perform regular proficiency testing of Multi-Residue Methods for the analysis of agrochemical residues on tobacco; 2) to undertake joint experiments to resolve unanswered questions arising from proficiency testing, and to expand the knowledge base on agrochemical residues and their analysis; 3) to produce and maintain a series of Technical Notes on different agrochemical residue classes and selected individual compounds to supplement the tobacco Guidance and its method development and improvement.

PROFICIENCY TESTING WITH FAPAS

Since 2005, the CORESTA AA-SG conducted annual proficiency tests in collaboration with Fapas¹ Food Analysis Performance Assessment (formerly from Fapa Science Ltd. (Paris) in the UK).

This collaboration has facilitated the realization of the only official proficiency testing conducted on the tobacco matrix. 56 laboratories from 27 countries participated in CORESTA Fapas proficiency testing contributing to consistent performance improvements by the participating laboratories. Around 25 laboratories have taken part in each of the last 5 rounds.



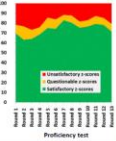
The laboratory performance assessment has allowed the tobacco industry to work with internal and commercial laboratories worldwide ensuring reliable and timely results and able to cover an extremely large testing scope, including all CPAs listed in the CORESTA Guide No. 1² Guidance Residue Levels (GRL) and other CPAs which are part of a company's internal standard and regulatory compliance requirements.

The participating laboratories are performance based based on a score, which can be interpreted as:

- (j) ≤ 2 satisfactory
- 2 < (j) ≤ 3 questionable
- (j) > 3 unsatisfactory

The rate of satisfactory scores for all participants has been fluctuating from a minimum of 65% to a maximum of 85% and is stable over 70% in the last 5 rounds.

To resolve questions arising from each round of proficiency testing, the CORESTA AA-SG holds an annual discussion which expands knowledge based on these CPA residue analysis in tobacco to that laboratory's performance can be improved.




Proficiency test

TECHNICAL DOCUMENTS

A Technical Guide for Pesticide Residue Analysis on Tobacco and Tobacco Products (CORESTA Guide No. 5³) and numerous Technical Notes have been produced by the CORESTA AA-SG to provide laboratories with the know-how for CPA residue analysis on tobacco, with specific information on the analysis of certain CPAs.

- TNE01-GM-2014 Malic Hydrate
- TNE02-GM-2014 Chlorthalonyl
- TNE03-GM-2014 Methamidophos
- TNE04-GM-2014 Pyrethroids
- TNE05-GM-2014 Acid herbicides
- TNE06-GM-2017 Dihydrocarbanilates




About CORESTA

The name of "CORESTA" is derived from the French version of its full title (Cooperation Centre for Scientific Research Relative to Tobacco), a name that reflects the founding purpose of the association, namely to respond and offer practical solutions to the non-competitive issues associated with tobacco production and product manufacture, control and use.

There are four Study Groups which are Agronomy & Leaf Integrity, Phyto-pathology & Genetics, Smoke Science and Product Technology.

The Agrochemicals Analysis Sub-Group belongs to the Agronomy & Leaf Integrity Study Group and works closely with the Agricultural Advisory Committee (AAC).



JOINT EXPERIMENT TEST STUDIES

Organization of the CORESTA-Fapas proficiency testing; also permits the identification of issues with either Multi-Residue Method or Single-Residue Method analysis of specific CPAs and for which dedicated Joint Experiment Test Studies (JETS) are conducted among laboratories.

- Repeat JETS
 - JETS 301 Cyfluthrin
 - JETS 323 Endosulfans
 - JETS 342 Dihydrocarbanilates
 - JETS 362 Malic Hydrate
 - JETS 371 Malic Hydrate

TOBACCO LABORATORY COOPERATION

CORESTA, through its AA-SG, provides a service to the tobacco industry with the evaluation of laboratory performance. It consequently offers the tobacco industry the possibility to work with many laboratories worldwide and to have confidence in their results.

ACKNOWLEDGMENT

The authors wish to thank all members of the CORESTA AA-SG and all laboratories participating in the CORESTA Fapas proficiency testing, JETS, or other activities.

Special thanks to test providers, Mr. Dennis Anderson and Mr. Markes Sales in Fapa.

References: CORESTA, Guide No. 1: The Concept and Implementation of Agrochemical Residue Levels, July 2005, https://www.coresta.org/files/default/technical_documents/meyr/GuideNo1-GRLevels-05en-14.pdf
 CORESTA, Guide No. 5: Technical Guide for Pesticide Residue Analysis on Tobacco and Tobacco Products, February 2006, https://www.coresta.org/files/default/technical_documents/meyr/GuideNo5-Pesticide-Residue-Analysis_Feb06.pdf

Proficiency test 2019 (FAPAS FT0115)

- Spiked and incurred tobacco samples
- Incurred tobacco materials provided by the RFT SG

New Joint Experiment Test Study

- Matrix effect from DAC tobaccos
- Compare with the different tobacco types and solvent standards





Thank you for your attention!