



Proficiency Testing for Detection of Transgenic Tobacco Sub-Group

Santa Cruz do Sul, Brazil

23rd October 2017



Organization & Objectives

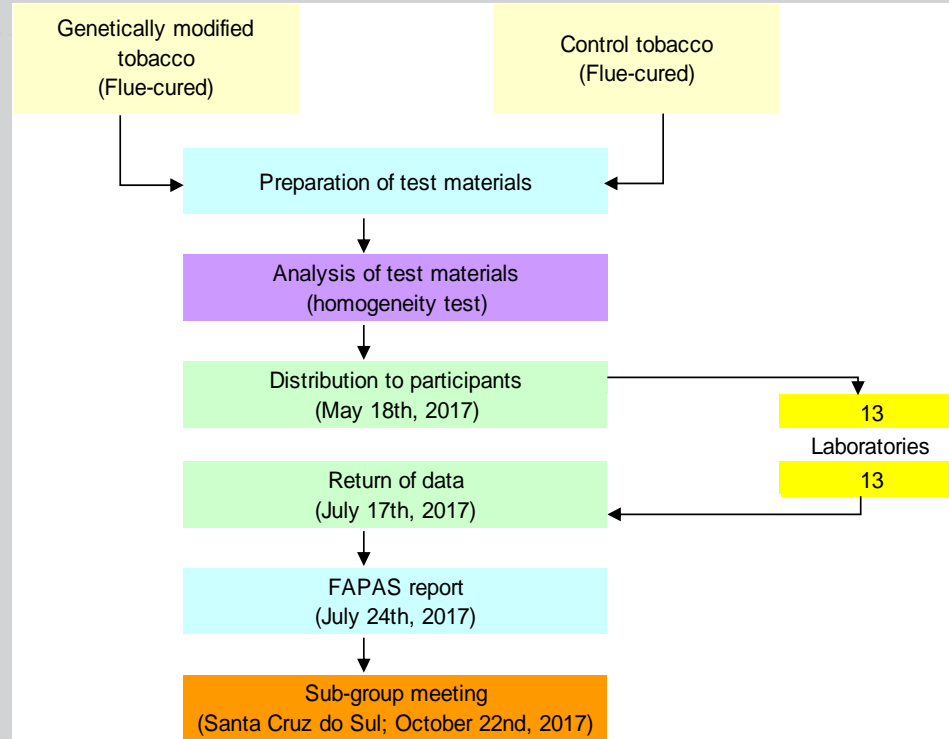
❖ Organization

- Coordinator: François Dorlhac de Borne (Imperial Tobacco)
- Secretary: Masahiro Miyoshi (Japan Tobacco)
- Liaison: Yongfeng Guo (Tobacco Research Institute, CAAS)

❖ Objectives

- To study routine procedures used in participating laboratories
- To provide an independent assessment of the quality of data being produced by participating laboratories, through the Tobacco Proficiency Testing Scheme

❖ Course of events





CORESTA-FAPAS PT “GeMST04”

❖ 13 participating laboratories from 9 countries

Laboratory	Country
ADGENE Laboratoire	France
Agricultural Biotechnology Research Institute, Faisalabad	Pakistan
Cevre Endustriyel Analiz Lab. Hizmerleri Tic. A.S.	Turkey
Chinwong Food Co., Ltd	Thailand
Eurofins GeneScan GmbH	Germany
Genetic ID (USA)	USA
Global Laboratory Services, Inc.	USA
Intertek - Can Tho Branch	Vietnam
Japan Tobacco, Inc.- Tochigi	Japan
Lifefprint GmbH	Germany
Microbac Laboratories, Inc.	USA
Tobacco Molecular Genetics Key Laboratory of China Tobacco (Guizhou Academy of Tobacco Science of CNTC)	China
USDA-AMS-S&T-FLS	USA

❖ Test round contents

- Novel GM tobacco material (Flue-cured, single copy of *p35S* and *tNOS*) kindly offered from Guizhou Academy of Tobacco Science of CNTC
- 3 test materials and 2 control materials (positive & negative leaf tobacco) distributed
- Participants requested to determine the presence of *p35S* and *tNOS* in the test materials
- Participants invited to record qualitative and quantitative data
- Electronic submission of the results and method information
- Identity of specific laboratories is not listed in the Report issued by FAPAS
- A |z-score| of less than or equal to 2 is considered satisfactory.



CORESTA-FAPAS PT “GeMST04”

❖ Qualitative results

- Test Material GeMST04A: **NEGATIVE** for *p35S* (92% consensus)
NEGATIVE for *tNOS* (92% consensus)
- Test Material GeMST04B: **POSITIVE** for *p35S* (100% consensus)
POSITIVE for *tNOS* (100% consensus)
- Test Material GeMST04C: **POSITIVE** for *p35S* (100% consensus)
POSITIVE for *tNOS* (100% consensus)

❖ Quantitative results

Test material	Analyte	Assigned value, x_a %	Number of satisfactory scores: $ z \leq 2$	Total number of scores	Satisfactory ($ z \leq 2$) %
GeMST04A	<i>p35S</i>	<i>Negative</i>			
	<i>tNOS</i>	<i>Negative</i>			
GeMST04B	<i>p35S</i>	1.05	4	5	80
	<i>tNOS</i>	1.10	4	5	80
GeMST04C	<i>p35S</i>	4.57	4	5	80
	<i>tNOS</i>	4.75	3	5	60

❖ Summary of outcome

- Novel GM tobacco material found to be a good Standard Reference Material for GMT detection.
- Results were submitted by all 13 participants (100%) before the closing date for this test.
- For qualitative test, except for one participant, the submitted results for both targets in all positive test materials were evaluated as satisfactory. One participant detected a false-positive in GeMST04A.
- For quantitative test, only one participant could not obtain the consensual results for both analytes in positive test material, while another participant could not obtain the satisfactory result for *tNOS* in one positive test material.



CORESTA-FAPAS PT “GeMST04”

❖ Point at issue

- One member failed taking part in GeMST04 because of a challenge in getting payment to go through on time.
- One member almost missed their participation due to the registration problem.
- Six laboratories who participated in the last test (GeMST03) did not take part in this year’s test, although five new ones joined in. One of these six last participating laboratories did not know there was GeMST04 this year.
- Only three laboratories participated in all four rounds of this GMT proficiency test consecutively.
- Making the GMT proficiency test more attractive would keep some participants from quitting.



List of participating laboratories

Laboratory	Country	GeMST01	GeMST02	GeMST03	GeMST04
Biolvtix AG.	Switzerland	x		x	
Biopremier S.A.	Portugal	x			
Conden Biotechnologie GmbH	Germany	x			
Eurofins Dr. Specht Laboratorien/GenScan GmbH	Germany	x	x	x	x
FSBI Chelvabinsk interregional veterinary laboratory	Russian Federation	x			
Genetic ID (Europe) AG	Germany	x			
Global Laboratory Services, Inc.	USA	x		x	x
Guizhou Academy of Tobacco Science of CNTC	China	x	x	x	x
Japan Tobacco Inc. -Tochiqi	Japan	x	x	x	x
RIKILT –Wageningen UR	Netherland	x			
SGS Bulgaria LTD	Bulgaria	x			
UFAG Laboratorien AG	Switzerland	x	x		
Chinwong Food Co., Ltd	Thailand		x	x	x
DXN Pharmaceutical Sdn. Bhd.	Malaysia		x		
Eurofins Scientific Analysis	France		x		
Genetic ID AG	USA		x		x
KT&G Research Institute	Korea		x		
Nona Shim Co., Ltd	Korea		x		
Tobacco Research Board	Zimbabwe		x	x	
ADGENE LABORATOIRE	France			x	x
Central Lab for Food and Feed	Egypt			x	
China National Tobacco Corporation, Heilongjiang Branch, Mudanjiang Tobacco Science Research Institute	China			x	
Dr. Blasv - Dr. Busse	Germany			x	
Landesamt für Umweltschutz Sachsen Anhalt	Germany			x	
Synerq Health Laboratory Services Ltd	UK			x	
Microbac Laboratories, Inc.	USA			x	x
Agricultural Biotechnology Research Institute, Faisalabad	Pakistan				x
Cevre Endustrivel Analiz Lab. Hizmetleri Tic. A.S.	Turkey				x
Intertek - Can Tho Branch	Vietnam				x
Lifeprint GmbH	Germany				x
USDA-AMS-S&T-FLS	USA				x
Total number		12	11	14	13

- ❖ Periodicity: one round per year
- ❖ Scheme: qualitative and/or quantitative test
- ❖ Targets: *p35S*, *tNOS*, or other genes?
- ❖ New sample types:
 - Stem of the GMT used in GeMST04
 - Sample at various stages during maturity & curing/procedure of the GMT
- ❖ Next meeting with Guizhou Academy of Tobacco Science of CNTC or FAPAS, if necessary.



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