



Proficiency Testing for Detection of Transgenic Tobacco Sub-Group

Report

Kunming, China - 23rd October 2018



Organization & Objectives

❖ Organization

- Coordinator: François Dorlhac de Borne (Imperial Brands)
- 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.



CORESTA-FAPAS PT “GeMST05”

❖ Test round contents

- GM tobacco material kindly offered from Guizhou Academy of Tobacco Science of CNTC.
- 6 test materials (GeMST05A, B, C, D, E and F) and 4 control materials (positive & negative lamina and stem tobaccos) were 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.



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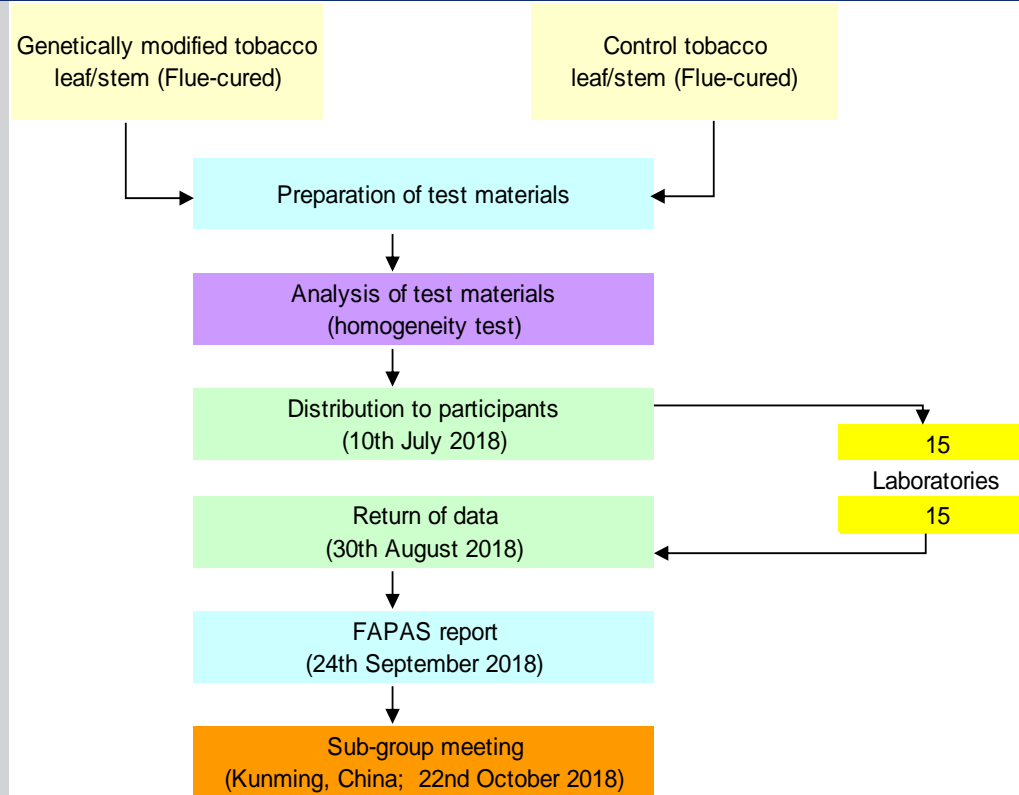
❖ 15 participating laboratories from 12 countries

Laboratory	Country
Al Hoty Stanger Laboratories	UAE
Biolytix AG	Switzerland
BIOMI Ltd.	Hungary
Chinwong Food Co., Ltd	Thailand
Congen Biotechnologie GmbH	Germany
Eurofins GeneScan GmbH	Germany
Gesellschaft für Bioanalytik, Hameln	Germany
Global Laboratory Services, Inc.	USA
Government Laboratory, HKSAR	Hong Kong
Japan Tobacco, Inc.- Tochigi	Japan
KT&G Research Institute	Korea
Mersin Gıda Kontrol Laboratuvar Müdürlüğü	Turkey
PT. Angler BioChem Lab	Indonesia
Tobacco Research Board	Zimbabwe
USDA-AMS-S&T-FLS	USA



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❖ Course of events





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❖ Qualitative results

- Test Material GeMST05A:
[non-GM lamina]
NEGATIVE for *p35S* (87% consensus)
NEGATIVE for *tNOS* (93% consensus)
- Test Material GeMST05B:
[0.3% GM lamina]
POSITIVE for *p35S* (100% consensus)
POSITIVE for *tNOS* (100% consensus)
- Test Material GeMST05C:
[4.0% GM lamina]
POSITIVE for *p35S* (100% consensus)
POSITIVE for *tNOS* (100% consensus)
- Test Material GeMST05D:
[4.6% GM stem]
POSITIVE for *p35S* (100% consensus)
POSITIVE for *tNOS* (100% consensus)
- Test Material GeMST05E:
[non-GMT stem]
NEGATIVE for *p35S* (93% consensus)
NEGATIVE for *tNOS* (86% consensus)
- Test Material GeMST05F:
[0.4% GM stem]
POSITIVE for *p35S* (93% consensus)
POSITIVE for *tNOS* (93% consensus)

❖ Quantitative results

Test material	Type	Analyte	Assigned value, x_a %	Number of satisfactory scores: $ z \leq 2$	Total number of scores	Satisfactory ($ z \leq 2$) %
GeMST05A	leaf	<i>p35S</i>		<i>Negative</i>		
		<i>tNOS</i>		<i>Negative</i>		
GeMST05B		<i>p35S</i>	0.63	4	5	80
		<i>tNOS</i>	0.63	4	4	100
GeMST05C		<i>p35S</i>	9.79	4	5	80
		<i>tNOS</i>	9.88	4	4	100
GeMST05D	stem	<i>p35S</i>	20.1	4	5	80
		<i>tNOS</i>	20.0	3	4	75
GeMST05E		<i>p35S</i>		<i>Negative</i>		
		<i>tNOS</i>		<i>Negative</i>		
GeMST05F		<i>p35S</i>	1.15	4	5	80
		<i>tNOS</i>	1.20	4	4	100



Participating laboratories the last 5 years

Laboratory	Country	GeMST01	GeMST02	GeMST03	GeMST04	GeMST05
Biolytix AG.	Switzerland	x		x		x
Biopremier S.A.	Portugal	x				
Congen Biotechnologie GmbH	Germany	x				x
Eurofins Dr. Specht Laboratorien/GenScan GmbH	Germany	x	x	x	x	x
FSBI Chelyabinsk interregional veterinary laboratory	Russian Federation	x				
Genetic ID (Europe) AG	Germany	x				
Global Laboratory Services, Inc.	USA	x		x	x	x
Guizhou Academy of Tobacco Science of CNTC	China	x	x	x	x	
Japan Tobacco Inc. -Tochigi	Japan	x	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	x
DXN Pharmaceutical Sdn. Bhd.	Malaysia		x			
Eurofins Scientific Analysis	France		x			
Genetic ID AG	USA		x		x	
KT&G Research Institute	Korea		x			x
Nong Shim Co., Ltd	Korea		x			
Tobacco Research Board	Zimbabwe		x	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. Blasy - Dr. Busse	Germany			x		
Landesamt für Umweltschutz Sachsen Anhalt	Germany			x		
Synergy Health Laboratory Services Ltd	UK			x		
Microbac Laboratories, Inc.	USA			x	x	
Agricultural Biotechnology Research Institute, Faisalabad	Pakistan				x	
Cevre Endustriyel Analiz Lab. Hizmerleri Tic. A.S.	Turkey				x	
Intertek - Can Tho Branch	Vietnam				x	
Lifeprint GmbH	Germany				x	
USDA-AMS-S&T-FLS	USA				x	x
Al Hoty Stanger Laboratories	UAE					x
BIOMI Ltd.	Hungary					x
Gesellschaft für Bioanalytik, Hameln	Germany					x
Government Laboratory, HKSAR	Hong Kong					x
Mersin Gıda Kontrol Laboratuvar Müdürlüğü	Turkey					x
PT. Angler BioChem Lab	Indonesia					x
Total number		12	11	14	13	15



CORESTA-FAPAS PT “GeMST05”

❖ Overview

- Stem as well as leaf found to be good materials to perform tests.
- Detection difficulty: stem > lamina samples.
- Registration problem was fixed.
- Method submission format improved.
- Important turnover: 7 new laboratories participated and several former participants stopped.



Next test

- ❖ Periodicity: one round per year.
- ❖ Scheme: qualitative and/or quantitative test.
- ❖ Targets: *p35S*, *tNOS*.

- ❖ Next meeting with Guizhou Academy of Tobacco Science of CNTC.



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