



Proficiency Testing for Detection of Transgenic Tobacco (GMO) Sub-Group

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Coordinator and SC Liaison

Cancun, Mexico

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- To establish a Proficiency Testing Scheme to enable participants to monitor their laboratory testing performance by means of interlaboratory comparisons of analytical results obtained by using appropriate PCR methods for the detection of GM tobacco.
- In January 2020, the objectives of the group were amended to more adequately represent its activities.

• Current Objectives

1. To provide an independent assessment of the quality of data being produced by participating laboratories through Tobacco Proficiency Testing
2. To update the GMO dossier in collaboration with ACAC



CORESTA-FAPAS Proficiency Test

- **SG established 1999**
- **Process administered by United Kingdom-based**
Food Analysis Performance Assessment Scheme (FAPAS)
- **Test materials:**
 - 4 to 6 unknown GMO samples
 - control samples (+ve & -ve, leaf & stem)
- **Participants to determine presence of 35S and t_{nos}**
 - qualitatively and quantitatively
- **Results and method information submitted to FAPAS electronically**
- **Confidentiality of laboratory ID maintained in FAPAS report**
- **GeMST08**
 - **Completed in 2021 despite logistical issues created by lockdowns and Brexit**
 - **Results reported at 2021 AP Conference**



Current & Future Status

- **Coordinator unable to continue after 13 years**
- **In absence of any other volunteers, Kentucky Tobacco Research & Development Center (KTRDC) take over coordination**
- **Suggested restructuring – splitting responsibilities of coordinator:**
 - Proposed PT coordinator
 - Separate coordinator for International GMO regulations
- **Proposed re-evaluation of proficiency test objectives in line with current methods in biotechnology**



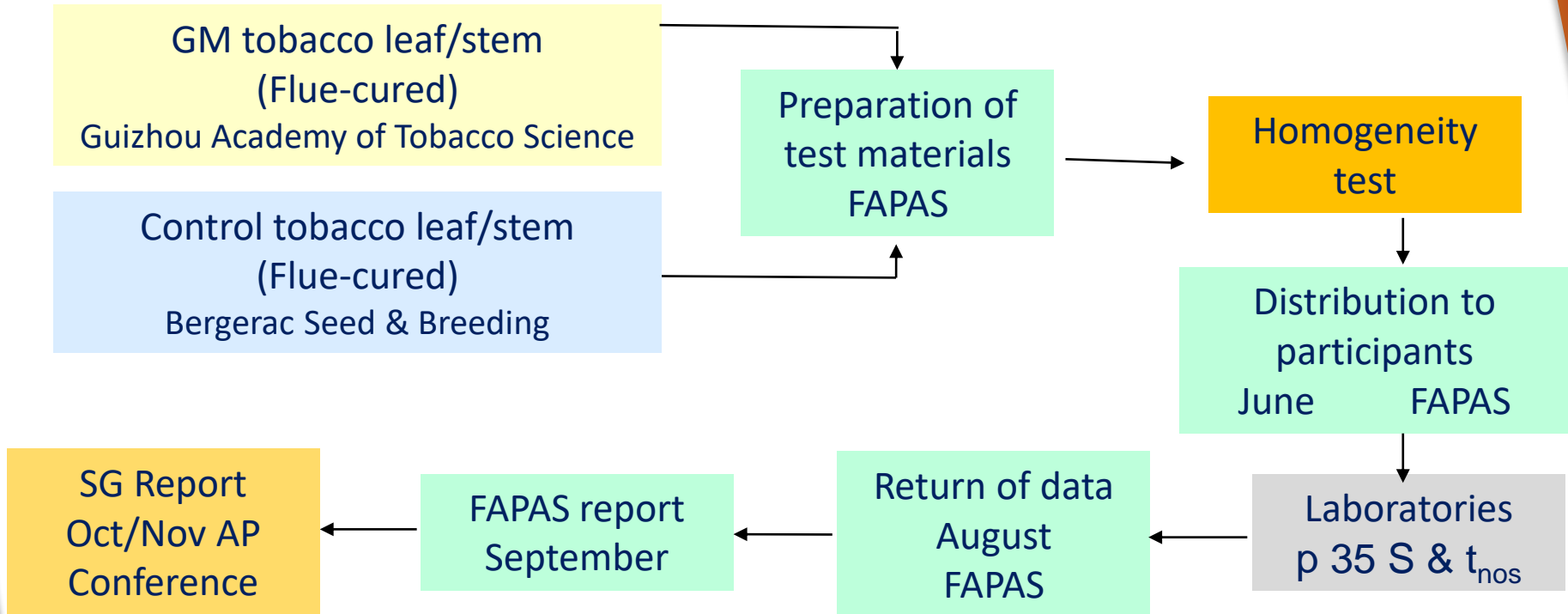
Current & Future Status

- **Since inception of SG in 2004, many advances genetical modification techniques**
 - Availability of alternative promoters and terminators
 - Gene editing techniques

- **Antibes SG & TF meetings – April 2023**
 - Despite advances in biotechnology
 - **GMO PT Program still relevant**



GMO Proficiency Test Workflow





2 & 5-year Plans

Restart requirements

1. How many labs participate?
2. Contract FAPAS
3. Homogeneity testing lab
4. Source of control lamina & midrib
5. Source of 35S and t_{nos} material
 - flue-cured

➤ Objective # 2

Update of GMO dossier

- Previously done by European-based SG coordinator
- Now done within ACAC
- **Objective dropped from GMO SG**



Proposed PT coordinator*

Dr. Sitakanta “Pintu” Pattanaik

- PhD in Plant Science
- Came to US from India in 2001; joined KTRDC as a post-doctoral fellow
- Currently staff scientist at KTRDC
- Areas of Interest:
 - (i) molecular mechanism of regulation of natural products, such as flavonoids, and alkaloids especially nicotine biosynthesis and conversion, in plants.
 - (ii) Isolation and characterization of novel promoters for plant genetic engineering
 - (iii) the influence of suckercide on tobacco gene expression
 - (iv) regulation of nicotine biosynthesis and conversion - US patent on regulatory genes involved in nicotine-to-nornicotine conversion granted this month

* subject to SC confirmation



Thank you:

- **Participants**
- **Meeting attendees**