



Tobacco Biotechnology and Omics (TBO) Task Force

Santa Cruz do Sul, RS, Brazil

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TBO TF was proposed by Dongmei Xu and Marcos Lusso (Altria):

- 1. Describe and summarize the publicly-available literature regarding the use of biotechnology and “omics” techniques and the nomenclature commonly used in agriculture in different countries.**
- 2. Prepare clear and concise definitions of the biotechnology and omics nomenclature and techniques.**
- 3. Application of biotechnology and omics technologies to tobacco**



AP2017 Objectives

- 1. Invite/recruit CORESTA members to participate in the TBO Task Force.**
- 2. Discuss potential subject areas to be covered**
- 3. Present a basic outline for the Technical Report that will be prepared and presented in 2018**



Proposed Milestones

- 1. Recruit TF members at CORESTA AP meeting (October 2017)**
- 2. Identify & prioritize objectives and proposed subject areas to be covered; discuss at CORESTA AP meeting**
- 3. Produce a draft outline, assign tasks to TF members, start compiling references, and begin reading and writing (late 2017)**
- 4. Assemble draft document, edit, and have all TF members review it before September 2018**
- 5. Present draft document at CORESTA meeting in China (October 2018)**
- 6. Revise and edit the draft as needed, finalize Technical Report for release and publication in December 2018**

- ❖ **Produce a descriptive document on crop biotechnology that is accessible to both technical and lay audiences that includes a detailed glossary of technical terms used**
- ❖ **The Technical Report will explain, in a clear and unbiased manner, the benefits, risks, and negative outcomes of biotech crops since their adoption in 1996**
- ❖ **The TR will examine the benefits of applying the various technologies, including gene editing (CRISPR/Cas9), to traits that will reduce the risk of using tobacco products and that will satisfy regulators in the light of current governmental regulations.**



- ❖ **The TBO Task Force will need input from experts who work in the tobacco industry and who have a perspective on transgenic and/or biotech tobacco**
- ❖ **~30 AP2017 participants attended the introductory meeting on Sunday; 10 expressed interest in participating in TBO-151 TF**



Expected Milestones for TBO-151 TF

- ❖ **The objectives and subject areas to be covered and the format will be set and prioritized by consensus to produce the final outline**
- ❖ **TF members will then be assigned tasks to find and compile references, and to read and write**
- ❖ **The draft Technical Report will be reviewed by TF members no later than September 2018 and will be presented at the CORESTA congress in China, October 2018**
- ❖ **The TR will be published on the CORESTA website in December 2018, after which the TF will be disbanded**



Proposed Outline for TBO

- 1. The Introduction will describe the early efforts to develop transgenic plants and the history of biotech crops. It will stress the importance of tobacco to this early research**
 - a. We will also discuss the impact of genomics and other “-omics” technologies (proteomics, transcriptomics, and metabolomics?) on modern crop breeding and development**
- 2. We will then summarize the benefits, risks, and negative outcomes that have resulted from biotech crops. Farmer and consumer benefits and adoption rates in the US, EU, and some other countries will be included.**



Potential Topics to be Covered

- ❖ **Economic impacts**
- ❖ **Benefits/risks of 1st & 2nd generation transgenic crops**
- ❖ **Ethical considerations**
- ❖ **Sustainability/environmental effects**
- ❖ **Negative aspects and public perceptions of GMO crops**
- ❖ **Regulations, EU and USA**
- ❖ **Developing countries/Africa**



Areas to be Covered (2)

- ❖ **Food security**
- ❖ **Future prospects; epigenetic modifications, stress and pest resistances**
- ❖ **Tobacco:**
 - **Potential benefits of transgenic tobacco to growers, consumers, and the environment**
 - **Gene editing technologies**
 - **Targets for gene editing**
 - **Use of FT plants in breeding**
 - **Harm reduction**
 - **Regulation**