



Potential Application of 'GM' Technology in the Production of Tobacco for its Traditional Uses – Preliminary Results of Our Comprehensive Review

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Purpose

- **Genetically Modified (GM) plants used successfully in many branches of agriculture**
- **GM not used in tobacco because of industry standards**
- **Prospective for change in industry attitudes**
- **Large amount of research done in GM tobacco for traditional production**

History of Transgenic Tobacco

- **First 'GM' Plant (1983)**
- **First field trials (1980's)**
- **Plant made pharmaceuticals (PmP)**
- **Classical Production**
 - **Herbicide tolerance**
 - **Pest resistance**
 - **Disease resistance**
 - **Risk mitigation**

GM Review Project

- **Funded by Tobacco Education and Research Council (TERC)**
- **Collaboration between University of Kentucky and Clemson University**
- **K.T.R.D.C.**
- **GOAL: Comprehensive review of 'GM' research for classical production**

Methods

- **Top-Down approach**
- **Search Terms**
 - **GM terms**
 - **Tobacco terms**
 - **Authors**
- **Web based databases**

Methods

o Literature Databases

- CAB abstracts
- BIOSIS Previews and Abstracts
- AGRIS
- Medline
- AGRICOLA
- Tobacco Abstracts
- ISI Web of Knowledge
- Others

Methods

○ Patents

- Delphion
- U.S. patent office

○ Field trials

- Virginia Tech listings from APHIS

○ Combining

- c.100,000 results
- 75 % redundant

Methods

- **Filtering and Classifying**
 - *Phenotype Category Key*
 - AP - Agronomic Properties
 - BR - Bacterial Resistance
 - FR - Fungal Resistance
 - GC - Genetic Containment
 - HT - Herbicide Tolerance
 - IR - Insect Resistance
 - OO - Other
 - PQ - Product Quality
 - VR - Virus Resistance

Results

- c.1500 papers and patents
- Projected late spring publication
 - Report of progress in each transgenic category area
 - Complete reference list of papers and patents
 - Transgenic containment evaluation

Follow Up

- Free distribution of paper to interested parties
- Presentation of results at various tobacco conferences

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