TSNA in Air-Cured and Fire-Cured Tobacco Sub-Group Report

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Izmir - 2015
Objectives

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Revised Objectives:

1. To determine proper placement of data loggers in curing barns to best represent the true curing conditions within the barn.
2. To review the issues of post cure tobacco storage and ventilation parameters.
3. Sampling
   (a) To define proper sampling method of post-cure tobacco for TSNA determination.
   (b) To determine the optimal method for sample preparation for TSNA determination.
4. To collect available TSNA presentations and papers and publish them on the CORESTA website.
Objective 1

- Analysis of correlation between curing conditions and corresponding TSNA levels at various locations within curing barns
  - M.S. project for Mitchell Richmond
  - Supported by CORESTA study grant
- Experiment conducted in 2012 and 2013
  - Project completed, final report submitted and approved by CORESTA Board
  - Manuscript nearing completion for submission to Tobacco Science journal
- Effects of within-barn position and conditions cannot be easily predicted
  - Negative correlation between temperature and TSNA
  - Positive correlation between RH and TSNA
Draft on use of data loggers and methods for data logger calibration.

Draft recommendations for placement of data loggers in curing structures

distributed to subgroup members for review Oct 2014.
Review issues of post-cure storage and ventilation parameters

Experiments and manuscripts

Significant TSNA responses to high temperature and nitrate


Other research needed?
Sampling:

(a) To define proper sampling method of post-cure tobacco for TSNA determination

(b) To determine the optimal method for sample preparation for TSNA determination
3a. Sampling method:

Evaluate bale sampling procedure

- University of Kentucky, 2015 & 2016
- Funding:
  - Analysis: Altria, KTRDC, PMI, RJR
  - Sample bales supplied by AO
- Two bale sizes:
  - 6 large (200 kg) – 36 core samples
  - 6 small (40 kg) – 120 core, hand grab, individual leaves
- Stemmed, freeze dried
- Results:
  - TSNA range 0.17 – 43 µg g⁻¹
  - Currently with Applied Statistics Laboratory, Kristen McQuerry
3b. Sample preparation

- Draft protocol was developed but re-evaluated
  - University of Kentucky test:
    - Air dry
    - Freeze dry
    - Oven dry temperature
  - Funding: Council for Burley Tobacco

- 2 revisions developed and reviewed by members
  - Protocol submitted to Scientific Commission
Objective 4

Available TSNA publications being published on CORESTA website