

REFERENCE MEMORANDA

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INTEROFFICE MEMORANDUM

Subject: Nicotine Variation

Date: February 22, 1983

To: Mr. Joe Morgan  
Leaf Processing & Storage

From: E. H. Villegas  
Tobacco Blending  
Technology  
Applied R&D

On February 1, 1983, twenty hogsheads of K10X-ET-82 were cored at Brook Cove and samples analyzed to determine the extent of nicotine variation within or between hogsheads.

All hogsheads sampled had been cored in one corner for routine NIR nicotine and moisture analysis. Samples for our study were taken from the center and corner opposite the NIR core. Each core sample of approximately 30 inches was divided into top, middle, and bottom layers (of approximately 10 inches). This gave a total of 120 samples (6 per HHD x 20 HHDs).

Each sample was ground and analyzed by NIR for nicotine using the same equipment and procedure as routine NIR analyses. These values were then statistically analyzed by Mr. T. J. Steichen of R&D (Attachment 1). The results showed variations between hogsheads to be greater than variation within hogsheads. There was little difference between samples from a given depth or position; e.g., the corner top layer is no different from the center middle layer. Of the three sources of variance - hogshead, layer, position - hogshead was the greatest. When compared with the original NIR analysis, the mean nicotine value (20 containers) of both center (2.863) and opposite corner (2.929) were different from the standard (2.739). Since the QA prediction error on this method is  $\pm .22^*$ , these values are within prediction error.

<sup>50</sup>  
The sampling was done very efficiently which was largely due to the planning and coordination by Stemmary personnel.

E. H. Villegas  
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\*Phone conversation with Tom Long, QA, 2/8/83.

Xc: Dr. J. P. Dickerson  
Dr. J. M. Rivers  
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