

C84-02606

U. S. A.  
RESPONDENCE  
GINIA

To: J. Swain Date: May 30, 1984

From: M. E. Parrish

Subject: TDL NH<sub>3</sub> Deliveries for Cigarettes with 25% DIET and 25% ET

Cigarettes made with 25% DIET (X6D4LY, pack #8042) and cigarettes made with 25% ET (X6D4LZ, pack #8043) were analyzed for their NH<sub>3</sub> deliveries using the TDL procedure. Five determinations of each sample were performed and the results are given below in Table I:

Table I

Averaged NH<sub>3</sub> Deliveries for 25% DIET and 25% ET Blended Cigarettes

<u>Sample</u>	<u>Puff Count</u>	<u>µg/cigt</u>	<u>SD</u>	<u>µg/puff</u>	<u>SD</u>
X6D4LY (25% DIET)	7.6	2.3	±0.4	0.31	±.04
X6D4LZ (25% ET)	8.0	4.7	±1.1	0.58	±.13

The NH<sub>3</sub> delivery is increased by 100% when 25% ET is used in the blend compared to a similar blend using 25% DIET. However, the ability to perceive a sensory difference between the two cigarettes relative to their NH<sub>3</sub> deliveries may be related more to what the differences are based on the first five puffs instead of the total cigarette. Therefore, the results were calculated based on the first five puffs and are listed in Table II:

Table II

NH<sub>3</sub> Deliveries Based on First Five Puffs

<u>Sample</u>	<u>µg(total for five puffs)</u>	<u>SD</u>	<u>µg/puff</u>	<u>SD</u>
X6D4LY (25% DIET)	1.1	±0.1	0.22	±.03
X6D4LZ (25% ET)	1.7	±0.2	0.34	±.05

Based on the first five puffs only, the NH<sub>3</sub> delivery is increased by only 55% compared to 100% for all puffs. If sensory evaluation is performed using only the first portion of the burning cigarette, the chances of detecting a difference between the two cigarettes due to the NH<sub>3</sub> delivery may be more difficult. It is not clear at this point that a factor of

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two or even a factor of ten difference in  $\text{NH}_3$  delivery is sufficient for a smoker to detect. As you are aware, this problem is currently being addressed. If there are any questions or comments, please bring them to my attention.

*Matthew Smith*

MEP/clc

cc: M. Hausermann  
J. Charles  
L. Meyer  
W. Farone  
D. Daylor  
W. Kuhn  
C. Levy  
R. Ikeda  
H. Spielberg  
A. Kallianos  
R. Cox  
G. Vilcins  
H. Lanzillotti

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