

TO: Mr. J. A. Scherr
FROM: D. C. Watson
SUBJECT: Menthol Analyses

May 27, 1969

E. L. Dillard
MAY 28 1969

In regard to your memo of May 16, 1969 (Mr. L. L. Long) we have compiled a more comprehensive study of the data involved.

The graphs used in the memo are correct for the data. They are, however, misleading as they are taken from CI reports which are the averages of three months values for a given brand. A more realistic plot of this data is shown in Graph I. It shows a plot of Menthol Total vs Menthol Delivered for the four brands over the past 12 months.

An even more representative picture is shown in Graphs II and III. Here the Menthol Total is plotted vs Menthol Delivered for the past 56 months for Alpine (AL6) and Salem (SL6). Note that even though these samples were made and analyzed over a 4 1/2 year period, a general linear relationship exists that falls within the analytical error limits as defined in the methods manual.

A third method of viewing the data is shown in Graph IV. Here the menthol delivered is plotted by individual CI pickup for October 1964 through May 1969. The trend for increasing menthol deliveries during July 1968 - January 1969 is particularly evident in Alpine (AL6) and Kool (KL6). The trend is less evident for Salem (SL6) and for Marlboro Green (MR6u) occurs during July 1968 to October 1968. There is no significant increase in the delivery of a specially made and equilibrated control (Menthol Monitor).

Table I demonstrated the precision of the menthol in smoke procedure. The average standard deviation at the 2 sigma level is calculated by month for the period July 1968 through May 1969. Data is presented for experimental cigarettes (from normal requests), for commercial brands (SL6, AL6, and KL6), and for the Menthol Monitor (where enough data exists for valid calculations).

In all cases the deviation is equal to or less for the experimental cigarettes than for commercial cigarettes. This points out the need for care in comparisons of data from unrelated experiments. CI values are aimed at determining brand averages from different places of manufacture and detecting changes in the brands. Experimental cigarettes are more closely controlled as to matrix and equilibration.

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