

MR 3551

BROWN & WILLIAMSON TOBACCO CORP.

TOP-LINES

MENTHOL PRODUCT TEST

PROJECT # 1974-202

SUBJECT: 100% HUMECTOSE Replaced With Liquid Sugar

SAMPLE: 250 KOOL / 250 Salem

CIGARETTES: #938/#958 - Current KOOL 84

#958/#938 - Current KOOL 84 except with 100% of the HUMECTOSE in the burley and flue-cured casings replaced with liquid sugar (SOUTHDOWN).

PREFERENCE:

	<u>KOOL</u>	<u>Salem</u>		
<u>Current</u>	<u>45</u>	<u>50</u>		
<u>100% Liquid Sugar</u>	<u>55</u>	<u>50</u>		

ATTRIBUTES:

	<u>KOOL</u>		<u>Salem</u>				
	<u>100%</u>		<u>100%</u>				
	<u>Cur</u>	<u>Liq.Sug.</u>	<u>Cur</u>	<u>Liq.Sug.</u>			
STRENGTH	- 9	-10	+14	+14			
HARSHNESS	- 3	- 4	+16	+15			
AMOUNT MENTHOL	-21	-28	-15	-17			
MENTHOL TASTE	-26	-11*	-33	-25			
SATISFYING	-40	-29*	-46	-45			
AFTERTASTE	+18	+10	+30	+26			

* Statistically Significant

NOTICE

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MEMORANDUM

File
November 11, 1974

TO: C.I. McCARTY

cc: J.E. Edens
H.D. Bryant
J.A. Broughton
J.H. Dunford
R.M. Heyward
I.W. Hughes
R.A. Pittman
P.L. Aulbach
R.A. Brown
B.D. Cummins
C.L. Domeck
F.A. Gardner
E.B. McDonald
R.A. Sanford
V.A. Smith
J.W. Groome
V.C. Broach
B.L. Broecker
W.L. Schermerhorn
M.O. Willson

FINAL REPORT
MATERIAL AVAILABILITY
100% REPLACEMENT OF HUMECTOSE
WITH LIQUID SUGAR
(PROJECT #1974-202)

Background

HUMECTOSE, which is presently obtained from one supplier, is currently used on all B&W menthol cigarettes. Several tests are being conducted to determine alternate full replacements for this material in case of an interrupted supply. Two previous tests showed that among KOOL smokers the full replacement of HUMECTOSE with GLOBE was a directional preference loser and 100% Invert AVALADE a stand-off. A third test in this series has been completed and is as follows:

#938/#958 - Current KOOL 84

Versus

#958/#938 - Current KOOL 84 except with 100% of the HUMECTOSE in the Burley and Flue-Cured casings replaced with liquid sugar (Southdown)

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For each of the HUMECTOSE replacement tests, additional quantity was produced to conduct, if necessary, a product aging test.

Sample for this test consisted of 500 smokers of king-size, menthol cigarettes (250 KOOL 84 and 250 Salem 85). This test was conducted in October, 1974.

Conclusions

1. KOOL smokers scored a nearly significant preference for the experimental in the test of KOOL 84 with 100% liquid sugar (experimental preference 55%).

Salem smokers expressed a preference stand-off (50%).

2. KOOL smokers rated liquid sugar as having a significantly better menthol taste (+15) and as more satisfying (+11) relative to Current KOOL.

Among Salem smokers, cigarettes were perceived to be similar on product attributes.

3. In addition to the current test of liquid sugar as a replacement for HUMECTOSE, tests were previously conducted replacing HUMECTOSE with Invert AVALADE and GLOBE. The nearly significant preference for liquid sugar (55%) and the stand-off for Invert AVALADE (51%) among KOOL smokers were stronger performances than the directional loss expressed for GLOBE (47%). Salem smokers expressed close to a preference stand-off for each of the HUMECTOSE replacement materials (experimental preference: liquid sugar 50%, Invert AVALADE 49% and GLOBE 52%).

Recommendations

In the tests of the three HUMECTOSE replacement materials, KOOL smokers nearly significantly preferred liquid sugar and expressed a stand-off for Invert AVALADE, but a directional loss for GLOBE. Based on these results, it is recommended to conduct product aging tests on liquid sugar and Invert AVALADE and not to conduct an aging test on GLOBE.

Discussion

Preference Results (Excluding No Preference)

Preferred KOOL 84:	KOOL Smokers			Salem Smokers		
	Total	Male	Female	Total	Male	Female
	%	%	%	%	%	%
Current	45	52	38	50	49	51
100% Liquid Sugar	55	48	62*	50	51	49
	100	100	100	100	100	100

*Statistically significant at the 95% confidence level.

KOOL smokers expressed a nearly significant preference for liquid sugar. Preference for the experimental was attributable to females who significantly preferred the liquid sugar. Males expressed about a preference stand-off.

Salem smokers scored a preference stand-off, consistent by sex.

	<u>Attribute Ratings</u>					
	<u>KOOL Smokers</u>			<u>Salem Smokers</u>		
	<u>KOOL 84</u>			<u>KOOL 84</u>		
	100% Liquid Sugar			100% Liquid Sugar		
	<u>Cur.</u> (1)	<u>Sugar</u> (2)	<u>Diff</u> (2-1)	<u>Cur.</u> (1)	<u>Sugar</u> (2)	<u>Diff</u> (2-1)
<u>Strength</u> (+Stronger)	- 9	-10	- 1	+14	+14	0
<u>Harshness</u> (+Harsher)	- 3	- 4	- 1	+16	+15	- 1
<u>Amount Menthol</u> (+More)	-21	-28	- 7	-15	-17	- 2
<u>Menthol Taste</u> (+Better)	-26	-11	+15*	-33	-25	+ 8
<u>Satisfying</u> (+More)	-40	-29	+11*	-46	-45	+ 1
<u>Aftertaste</u> (+More Unpleasant)	+18	+10	- 8	+30	+26	- 4

*Statistically significant at the 95% confidence level.

NOTE: Respondents were asked to compare each test cigarette to the brand they smoke most often. A net rating was obtained by subtracting the percent who rated the cigarette as having less of an attribute from those who rated it as having more of that attribute.

Among KOOL smokers, liquid sugar was perceived to have a significantly better menthol taste and to be more satisfying relative to current. Although not shown, these differences were entirely attributed to females, as males perceived the cigarettes as similar.

Salem smokers perceived the cigarettes as similar on product attributes.

Listed on the following page are experimental preference scores for the three HUMECTOSE replacement materials.

November 11, 1974

Preference For 100% HUMECTOSE Replacement
Product Relative To Current KOOL
(Excluding No Preference)

<u>Preferred KOOL 84 With 100%:</u>	<u>KOOL</u>	<u>Salem</u>
	<u>Smokers</u>	<u>Smokers</u>
	%	%
Liquid Sugar	55	50
Invert AVALADE	51	49
GLOBE	47	52

KOOL smokers expressed a nearly significant preference for liquid sugar, stand-off for Invert AVALADE, and directional logs for GLOBE.

Salem smokers expressed about a preference stand-off with each HUMECTOSE replacement material.

R&D DATA

	<u>KOOL 84</u>	
	<u>Current</u>	<u>100% Liquid Sugar</u>
<u>Blend:</u>		
PCL (13.8%)	10.9	11.7
WTS (12.7%)	12.4	13.2
<u>Physical:</u>		
Circumference (25.00mm)	25.04	25.04
Density (247 mg/cc)	246	242
Pressure Drop (4.2") *	4.2	4.0
Tobacco Section (1.6") *	1.8	1.7
Filter (2.4")	2.4	2.3
<u>Smoke:</u>		
Puffs (7.9) *	7.5	7.5
Tar (15.9 mgs) *	15.2	14.7
Nicotine (1.30 mgs) *	1.31	1.24
pH of TPM	5.9	5.9
<u>Other Analyses:</u>		
Glycerin (1.9%)	1.9	1.7
Propylene Glycol (2.0%)	1.9	1.8
Menthol (0.36%)	0.36	0.36
Moisture (13.0%)	13.1	13.3
Plasticizer (9.5%)	10.7	9.6

*Louisville monitoring data for the period 8/1-15/74.

Overall, cigarettes are within target specifications and close to each other on the various R&D measures.

Robert J. Pellegrini
R.J. Pellegrini

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