

R. J. REYNOLDS TOBACCO COMPANY

INTEROFFICE MEMORANDUM

SENSORY EVALUATION DIVISION

SUBJECT: Acceptance Test Results
August 20, 1986 Test

DATE: August 11, 1986

TO: Debby Kay ✓
Ted Stafford

FROM: Anne Savitt

No. 348 By _____

~~TOP SECRET~~

RESULTS SUMMARY:

Test: Isotherm Study - Shelf Life Model #11 (Baked D70) Fuel Source

75-60 PRODUCT vs. 75-40 PRODUCT was LESS ACCEPTABLE, OVERALL, and had the following differences on acceptance of specific attributes (see Table 1 for more detail):

LESS ACCEPTABLE CIGARETTE SMOKE TASTE
LESS ACCEPTABLE STRENGTH
LESS ACCEPTABLE LIP TEMPERATURE
LESS ACCEPTABLE AFTERTASTE

75-52 PRODUCT vs. 75-40 PRODUCT was LESS ACCEPTABLE, OVERALL, and had the following differences on acceptance of specific attributes (see Table 1 for more detail):

LESS ACCEPTABLE EASE OF LIGHTING
LESS ACCEPTABLE STRENGTH
LESS ACCEPTABLE AFTERTASTE

75-29 PRODUCT vs. 75-40 PRODUCT was NOT DIFFERENT IN OVERALL ACCEPTANCE, but had the following differences on acceptance of specific attributes (see Table 2 for more detail):

LESS ACCEPTABLE EASE OF LIGHTING

75-21 PRODUCT vs. 75-40 PRODUCT was rated NOT DIFFERENT IN OVERALL ACCEPTANCE, but had the following differences on acceptance of specific attributes (see Table 2 for more detail):

LESS ACCEPTABLE STRENGTH

All of the products evaluated fell in the range of BARELY to MODERATELY ACCEPTABLE on the overall acceptance rating. On all of the attribute acceptance ratings, all five products fell in the range from BARELY to VERY ACCEPTABLE (in general, most attributes were in the slightly to moderately

50586 8965

acceptable range). See the attached Duncan's Multiple Range Tables (Table 1 & 2) for the panel mean scores on acceptance.

Comments made by the panelists on the products will be provided to you as soon as possible (they are still being sorted).

CONCLUSION:

It appears that conditioning prototype #11 in humidities of 75/52 and above (75/60) caused a deterioration in the product which resulted in the products being rated less acceptable, overall, than the product held in 75/40 conditions. Holding prototype #11 in humidities lower than 75/40 (down to 75/21) did not appear to be as much of a problem. From these results, it would seem the optimum moisture range for prototype #11 would be from 75/21 to 75/40 (may be able to go a little higher than 75/40 in humidity, but should definitely keep the humidity lower than 52%).



Anne Syvarth

Table 1
Acceptance 5 - 2L Model #11
Duncan's Multiple Range Table^{*} (n = 21)

EASE OF LIGHTING $p = .02$

| | | |
|-------|------|---|
| 75-52 | 3.86 |] |
| 75-60 | 3.52 | |
| 75-40 | 2.90 | |

slightly acceptable
 ↓
moderately acceptable

OVERALL ACCEPTANCE $p = .00$

| | | |
|-------|------|---|
| 75-60 | 4.14 |] |
| 75-52 | 3.95 | |
| 75-40 | 3.19 | |

slightly acceptable
 ↓
moderately acceptable

CIGARETTE SMOKE TASTE $p = .09$

| | | |
|-------|------|---|
| 75-60 | 4.43 |] |
| 75-52 | 3.95 | |
| 75-40 | 3.81 | |

rarely acceptable
 ↓
slightly acceptable

STRENGTH $p = .00$

| | | |
|-------|------|---|
| 75-52 | 3.81 |] |
| 75-60 | 3.76 | |
| 75-40 | 2.95 | |

slightly acceptable
 ↓
moderately acceptable

AEROSOL TEMPERATURE $p = .22$

| | | |
|-------|------|---|
| 75-60 | 3.95 |] |
| 75-52 | 3.76 | |
| 75-40 | 3.43 | |

slightly - moderately acceptable

LIP TEMPERATURE $p = .01$

| | | |
|-------|------|---|
| 75-60 | 4.29 |] |
| 75-52 | 3.62 | |
| 75-40 | 3.52 | |

slightly acceptable
 ↓
(almost) moderately acceptable

AEROSOL DELIVERY $p = .12$

| | | |
|-------|------|---|
| 75-60 | 3.14 |] |
| 75-52 | 2.90 | |
| 75-40 | 2.52 | |

moderately - very acceptable

AFTERTASTE $p = .07$

| | | |
|-------|------|---|
| 75-52 | 3.48 |] |
| 75-60 | 3.33 | |
| 75-40 | 2.83 | |

* means within the same bracket are not significantly different at $p \leq 0.05$.

slightly acceptable
 ↓
moderately acceptable

Table 2
Acceptance 4 S.L. model #11
Duncan's Multiple Range Table* (n=29)

EASE OF LIGHTING $p = .00$

| | | |
|-------|------|-----|
| 75-29 | 4.26 |]] |
| 75-21 | 3.56 | |
| 75-40 | 3.41 | |

slightly acceptable
↓
moderately acceptable

OVERALL ACCEPTANCE $p = .16$

| | | |
|-------|------|-----|
| 75-29 | 4.59 |]] |
| 75-21 | 4.04 | |
| 75-40 | 4.00 | |

slightly - barely acceptable

CIGARETTE SMOKE TASTE $p = .16$

| | | |
|-------|------|-----|
| 75-29 | 5.19 |]] |
| 75-21 | 4.81 | |
| 75-40 | 4.52 | |

barely - slightly acceptable

STRENGTH $p = .15$

| | | |
|-------|------|-----|
| 75-2h | 3.96 |]] |
| 75-29 | 3.70 | |
| 75-40 | 3.33 | |

slightly acceptable
↓
moderately acceptable

AEROSOL TEMPERATURE $p = .31$

| | | |
|-------|------|-----|
| 75-21 | 3.30 |]] |
| 75-29 | 3.22 | |
| 75-40 | 3.11 | |

moderately acceptable

LIP TEMPERATURE $p = .17$

| | | |
|-------|------|-----|
| 75-21 | 3.93 |]] |
| 75-29 | 3.67 | |
| 75-40 | 3.26 | |

slightly - moderately accept.

AEROSOL DELIVERY $p = .41$

| | | |
|-------|------|-----|
| 75-40 | 3.00 |]] |
| 75-29 | 2.85 | |
| 75-21 | 2.56 | |

** Means within the same bracket are not significantly different at $p \leq .05$.*
slightly acceptable

OVERALL AFTERTASTE $p = .37$

| | | |
|-------|------|-----|
| 75-29 | 4.22 |]] |
| 75-40 | 4.07 | |
| 75-21 | 3.78 | |

slightly acceptable