

TOBACCO SUBSTITUTE FFM85 SAVINGS QVS

Management Summary

BIAD 92-31973

Background

R&D is investigating tobacco substitutes as an alternate filler for the savings brands. Several types of puffed grains have been explored and internal testing has indicated that puffed rice toasted to match the color of tobacco has the most potential for development. Because this alternate filler is 80-90% starch and does not contain nicotine, products with puffed rice have been found to increase smoothness and decrease harshness.

An additional advantage of tobacco substitutes is the substantial cost savings. Because of its very large filling capacity, considerable reductions of tobacco filler is possible. The raw material cost for rice is \$. 25 to \$. 50 per pound compared to approximately \$4.00 per pound for G19, and \$2.00 - \$4.00 for tobacco; With a 5% inclusion rate of puffed rice, tobacco weight reduction could be as high as 6 to 12%.

Objective

The objective of this test is to provide initial consumer direction for development of alternate fillers for Savings brands. R&D is particularly interested in the effects of three different levels of tobacco substitute (1%, 5%, 10%).

Key Findings

- **ACCEPTANCE**
For %70+ and mean thermometer, the Control and the 5% prototype were rated superior to the 10% prototype. Also, for %70+, the Control was rated higher than the 1% product.
- **ATTRIBUTES**
There were no differences across products for strength and tobacco taste.

However, the 5% product had an advantage of less harshness and a better aftertaste than all other products (the control, 1% and 10% prototypes.) For smoothness, the control and the 5% prototype were parity, and both were smoother than the 1% and 10% prototypes.

The 10% prototype burned more quickly (a disadvantage) than all other products tested. Also, the 5% prototype burned more quickly than the control.

Conclusions/Recommendations

Prototype C (with 5% rice substitution) has the potential to maintain parity with the control for acceptance supported by parity on strength, tobacco taste, and smoothness perceptions. Additionally, the 5% product decreases harshness and leaves a better aftertaste – advantages versus the control.

R&D is conducting a risk assessment (per PRISMS) to determine if the rice filler substitute can be mixed in with G-13 or even completely replace G-13.



Anita Scism
Business Information Analysis Department

TOBACCO SUBSTITUTE FF NM 85 SAVINGS QVS
FF NM 85, 21+ SAVINGS ONLY
(BIAD#: 92-31973 M/A/R/C#: 1470320)

STRUCTURED ANOVA SUMMARY TABLE

<u>Attribute</u>	<u>Overall</u>
Mean Thermometer	.99
%70+	.86
Strength	.39
Tobacco Taste	.53
Harshness	.78
Smoothness	.80
Burn Rate	.99
Aftertaste	.94

	A: Control	B : 1% filler	C: 5% filler	D: 10% filler	Pooled Ideal
Mean thermometer	67.0	62.3	66.5	61.6	
%70+	58.3	50.6	54.3	46.6	
Strength	3.81	3.61	3.62	3.63	4.52
Tobacco Taste	3.94	3.73	3.97	3.78	4.71
Harshness	3.21	3.29	2.98	3.37	3.08
Smoothness	4.79	4.48	4.79	4.52	5.12
Burn rate	4.38	4.28	4.15	3.70	5.12
Aftertaste	3.57	3.67	3.16	3.59	1=good / 7=bad

Tobacco Substitute FF NM 85 Savings QVS
FF NM 85, 21+ Savings Only
(BIAD #92-31973 M/A/R/C #1470320)

Significance Groupings

Mean Thermometer

^{10%} <u>CT2616AD</u>	^{1%} <u>CT2616AB</u>	^{5%} <u>CT2616AC</u>	^{Control} <u>CT2616AA</u>
61.55	62.32	66.45	66.96

%70+

<u>CT2616AD</u>	<u>CT2616AB</u>	<u>CT2616AC</u>	<u>CT2616AA</u>
46.60	50.55	54.29	58.30

Harshness

<u>CT2616AC</u>	<u>CT2616AA</u>	<u>CT2616AB</u>	<u>CT2616AD</u>	<u>Pooled Ideal</u>
2.98	3.21	3.29	3.37	3.08

Smoothness

<u>CT2616AB</u>	<u>CT2616AD</u>	<u>CT2616AA</u>	<u>CT2616AC</u>	<u>Pooled Ideal</u>
4.48	4.52	4.79	4.79	5.12

NOTE: Underlining indicates parity products. Means having no single line in common are significantly different with 70% confidence.

**Tobacco Substitute FF NM 85 Savings QVS
 FF NM 85, 21+ Savings Only
 (BIAD #92-31973 M/A/R/C #1470320)**

Significance Groupings

Burn Rate

<u>CT2616AD</u>	<u>CT2616AC</u>	<u>CT2616AB</u>	<u>CT2616AA</u>	<u>Pooled Ideal</u>
3.76	4.15	4.28	4.38	5.12

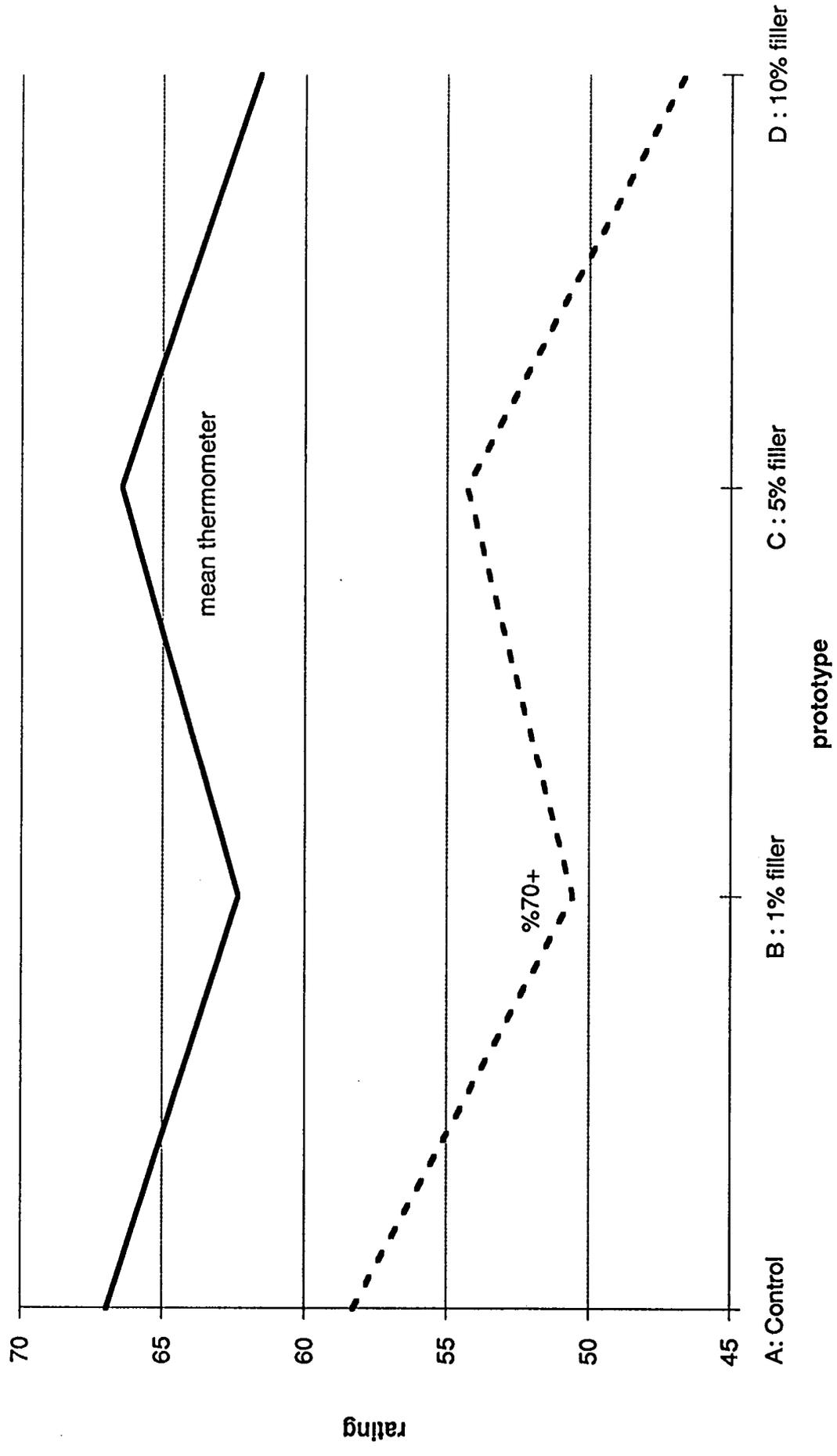
Aftertaste

<u>CT2616AC</u>	<u>CT2616AA</u>	<u>CT2616AD</u>	<u>CT2616AB</u>
3.16	3.57	3.59	3.67

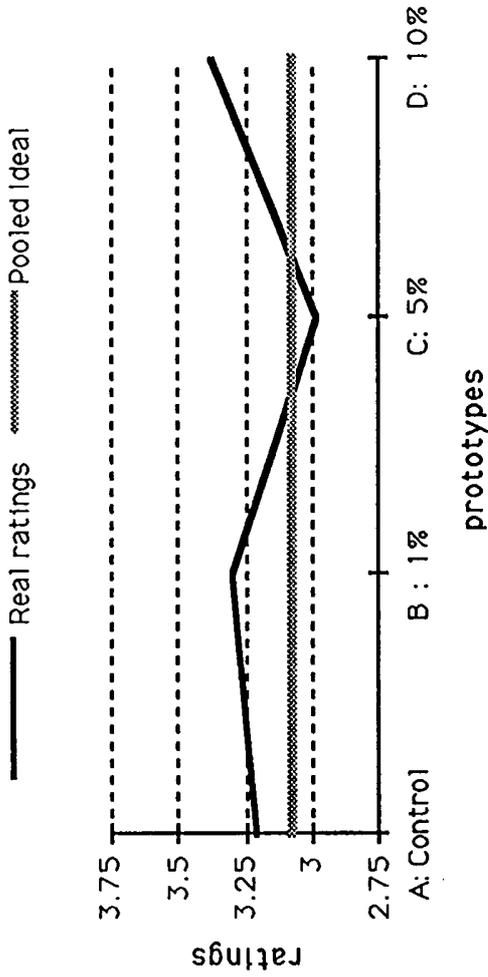
NOTE: Underlining indicates parity products. Means having no single line in common are significantly different with 70% confidence.

TOBACCO SUBSTITUTE FILLER

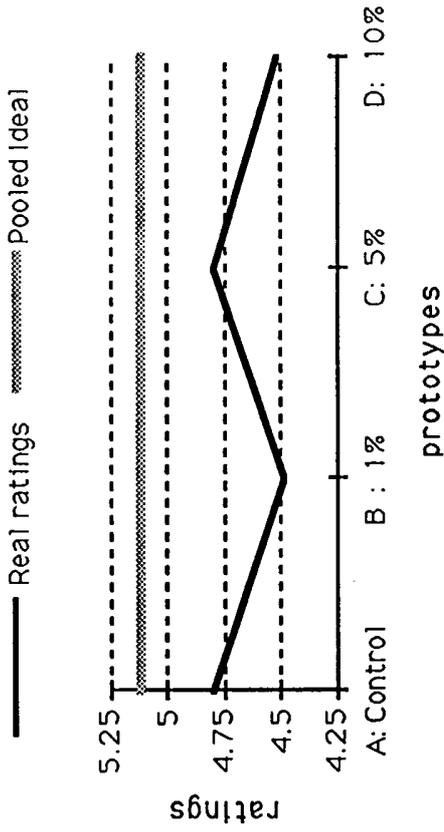
ACCEPTANCE RATINGS



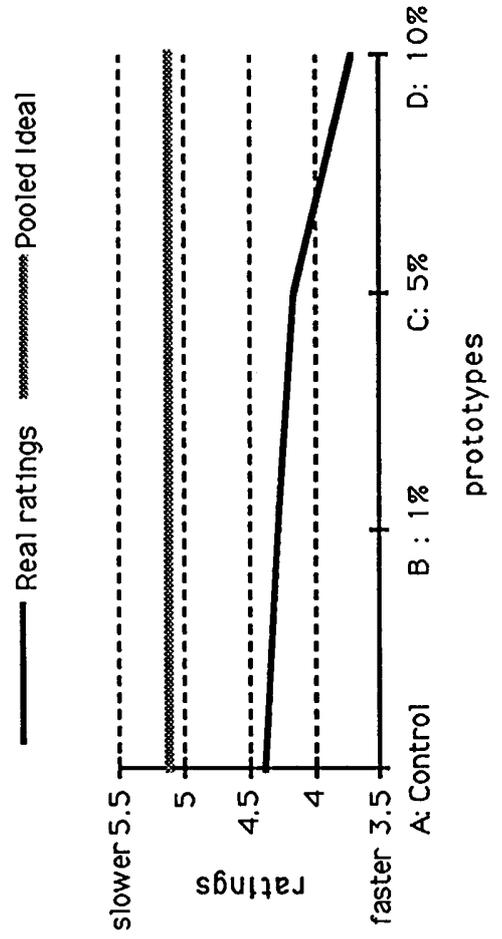
HARSHNESS



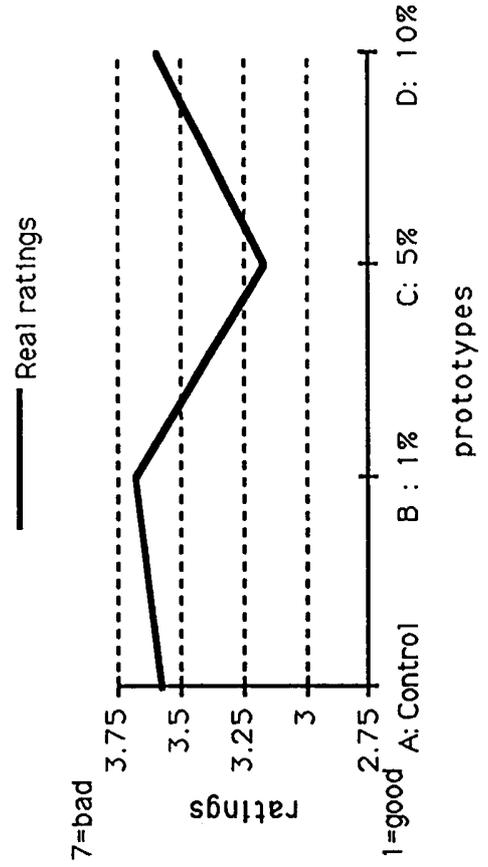
SMOOTHNESS



BURN RATE



AFTERTASTE



TSLRPT11
09:01:15:5

*** RELEASE REPORT ***

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10/26/92

Requested by: SAINTSING, BARRY L (4145)
Classification: DORAL 85
Test Purpose: EVALUATE TOBACCO SUBSTITUTE IN DORAL

Test Number: CT0000002616

Production Date _____ Product Source _____

Parts Released A thru D

Cold storage parts NONE Quantity All

Project Leader Barry Saintsing Date 10-26-92

Brand Manager _____ Date _____

Division Manager _____ Date _____

TSLRPT11
09:01:16.9

*** RELEASE REPORT ***

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Requested by: SAINTSING, BARRY L (4145)
Classification: DORAL 85
Test Purpose: EVALUATE TOBACCO SUBSTITUTE IN DORAL

CT0000002616AA

CIGARETTE BREAKDOWN

IND WEIGHT (GM)	0.952
SIZE (MM)	24.76
TIP DILUTION %	13.6
COLUMN DILUTION %	4.9
OPEN DRAFT	111.
CLOSED DRAFT	123.
FIRMNESS MM	8.97
CIG GROUP WEIGHT(GM)	0.9586
LENGTH, MM.	84.00
FILTER LENGTH, MM.	21.00

Handwritten note:
50 mm Doral 85

TIPPING ON LINE LASER PERFORATED

LENGTH	25.00
COLOR	50 MM DORAL FF85 TIPPING
PERF METHOD	0
CENTER TO CENTER	
NO. OF PERFORATIONS	14

MOISTURE PACKED CIGA % MOISTUR 12.53

FTC NICOTINE, TAR AND CO

BUTT LENGTH	28.0
PUFFS/CIGARETTE	8.6
TPM MG/CIG	18.5
NICOTINE MG/CIG	1.10
WATER MG/CIG	2.7
TAR MG/CIG	14.7
TPM/PUFF	2.16
NICOTINE/PUFF	0.129
TAR/PUFF	1.72
% CO	4.40
ML CO	13.19
MG CO	14.8
CO PUF/CIG	8.6

TSLRPT11
09:01:18.2

*** RELEASE REPORT ***

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10/26/92Requested by: SAINTSING, BARRY L (4145)
Classification: DORAL 85
Test Purpose: EVALUATE TOBACCO SUBSTITUTE IN DORAL

CT0000002616AB

CIGARETTE BREAKDOWN

IND WEIGHT (GM)	0.938
SIZE (MM)	24.71
TIP DILUTION %	13.0
COLUMN DILUTION %	5.1
OPEN DRAFT	116.
CLOSED DRAFT	128.
FIRMNESS MM	8.08
CIG GROUP WEIGHT(GM)	0.9430
LENGTH, MM.	84.00
FILTER LENGTH, MM.	21.00

TIPPING ON LINE LASER PERFORATED

LENGTH	25.00
COLOR	50 MM DORAL FF85 TIPPING
PERF METHOD	0
CENTER TO CENTER	
NO. OF PERFORATIONS	14

MOISTURE PACKED CIGA % MOISTUR	12.23
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FTC NICOTINE, TAR AND CO

BUTT LENGTH	28.0
PUFFS/CIGARETTE	8.5
TPM MG/CIG	18.5
NICOTINE MG/CIG	1.04
WATER MG/CIG	2.7
TAR MG/CIG	14.8
TPM/PUFF	2.18
NICOTINE/PUFF	0.122
TAR/PUFF	1.74
% CO	4.48
ML CO	13.31
MG CO	14.9
CO PUF/CIG	8.5

TSLRPT11
09:01:18.6

*** RELEASE REPORT ***

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Requested by: SAINTSING, BARRY L (4145)
Classification: DORAL 85
Test Purpose: EVALUATE TOBACCO SUBSTITUTE IN DORAL.

CT0000002616AC

CIGARETTE BREAKDOWN

IND WEIGHT (GM)	0.903
SIZE (MM)	24.76
TIP DILUTION %	14.0
COLUMN DILUTION %	5.1
OPEN DRAFT	119.
CLOSED DRAFT	133.
FIRMNESS MM	8.24
CIG GROUP WEIGHT(GM)	0.9086
LENGTH, MM.	84.00
FILTER LENGTH, MM.	21.00

5.1

TIPPING ON LINE LASER PERFORATED

LENGTH	25.00
COLOR	50 MM DORAL FF85 TIPPING
PERF METHOD	0
CENTER TO CENTER	
NO. OF PERFORATIONS	14

MOISTURE PACKED CIGA % MOISTUR 12.27

FTC NICOTINE, TAR AND CO

BUTT LENGTH	28.0
PUFFS/CIGARETTE	7.9
TPM MG/CIG	18.3
NICOTINE MG/CIG	1.00
WATER MG/CIG	2.9
TAR MG/CIG	14.4
TPM/PUFF	2.33
NICOTINE/PUFF	0.127
TAR/PUFF	1.83
% CO	4.70
ML CO	12.95
MG CO	14.5
CO PUF/CIG	7.9

TSLRPT11
09:01:19.0

*** RELEASE REPORT ***

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10/26/92Requested by: SAINTSING, BARRY L (4145)
Classification: DORAL 85
Test Purpose: EVALUATE TOBACCO SUBSTITUTE IN DORAL

CT0000002616AD

CIGARETTE BREAKDOWN

IND WEIGHT (GM)	0.827
SIZE (MM)	24.79
TIP DILUTION %	14.2
COLUMN DILUTION %	4.2
OPEN DRAFT	106.
CLOSED DRAFT	118.
FIRMNESS MM	8.50
CIG GROUP WEIGHT(GM)	0.8320
LENGTH, MM.	84.00
FILTER LENGTH, MM.	21.00

TIPPING ON LINE LASER PERFORATED

LENGTH	25.00
COLOR	50 MM DORAL FF85 TIPPING
PERF METHOD	0
CENTER TO CENTER	
NO. OF PERFORATIONS	14

MOISTURE PACKED CIGA % MOISTUR	12.43
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FTC NICOTINE, TAR AND CO

BUTT LENGTH	28.0
PUFFS/CIGARETTE	7.3
TPM MG/CIG	17.6
NICOTINE MG/CIG	0.89
WATER MG/CIG	3.0
TAR MG/CIG	13.8
TPM/PUFF	2.42
NICOTINE/PUFF	0.123
TAR/PUFF	1.89
% CO	4.82
NL CO	12.25
MG CO	13.7
CO PUF/CIG	7.3

10/26

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