

BROWN & WILLIAMSON TOBACCO CORPORATION

RESEARCH & DEVELOPMENT

FILE NOTE

TITLE: EFFECTS OF VACUDYNE TREATMENTS ON THE FLUE-CURED AND BURLEY TOBACCO PORTIONS OF AN EXPERIMENTAL BLEND/360

AUTHOR: T. N. Williard

DATE: June 12, 1987

CC: T. F. Riehl, M. L. Reynolds, P. R. Fisher, A. McMurtrie,
B. B. Chakraborty, R. F. Denier

Superiority

~~EW~~
~~RB~~
~~AB~~
~~AD~~
~~SB~~
~~SS~~
Buck

Summary

It can be concluded from this study that the optimum number of Vacudyne treatments found to be desirable for a single grade of flue-cured and burley tobacco are also preferred when treating the flue-cured and burley portions of an experimental blend. Internal smoke panel results also reflect a preference for extended Vacudyne treated blend portions when incorporated into XLF-879B.

Introduction

The purpose of this subsequent Vacudyne study was to determine if the optimum number of Vacudyne treatments found desirable for a single grade of flue-cured and burley tobacco would also be found when treating the flue-cured and burley portions of an experimental blend.

The flue-cured and burley portions of superiority blend XLF-879B were subjected to one Vacudyne treatment each, which served as a control for the experiment. The optimum number of treatments was previously found to be three treatments for flue-cured, and four treatments for burley.¹ Due to these findings, the optimum number of treatments (3 and 4 respectively) was performed for each type of tobacco.

Procedure

Separate lots of each blend portion (i.e., flue-cured and burley) were used for each treatment process. One lot was used to perform the one-treatment test for each blend portion, and another lot was used to perform the extended treatments (i.e. three treatments for flue-cured and four treatments for burley).

Two samples (approx. 200 lb. lots) were taken of each blend portion, and placed in wooden processing racks. Prior to running the one-treatment tests, samples were taken for chemical analysis and subjective smoke evaluation. Samples were taken from the top, middle, and bottom rack positions. When the one-treatment tests were completed, the racks were

620150885

removed from the Vacudyne and samples were again taken from the top, middle, and bottom rack positions. This same procedure was used to sample the extended treatment process for each blend portion. The top, middle, and bottom samples of each treatment were combined to form a composite sample for subjective smoke evaluation. This work was done in conjunction with experiments conducted by R. F. Denier².

Chemical Observations

Variations in the tobacco chemicals and moistures studied are shown in Figure 1 (flue-cured portion) and Figure 2 (burley portion). The results shown represent an average of two replications for each rack position.

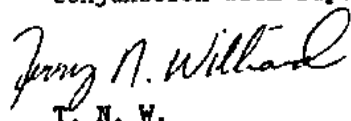
Subjective Smoking Observations

Handmade cigarettes from the one-treatment tests for each blend portion were compared against handmade cigarettes from the extended treatments of each blend portion. When compared to one-treatment, three treatments of the flue-cured portion was preferred due to more body and better tobacco taste. Four treatments of the burley portion was preferred to one treatment also citing more body and a better tobacco taste. One treatment showed significantly more impact and irritation.

An internal smoke panel was conducted to evaluate the effects of the Vacudyne treated blend portions when incorporated into XLF-879B. These cigarettes were manufactured in the Development Center. Cigarettes made from the normal Vacudyne treated tobacco were compared against cigarettes made from the extended Vacudyne treated tobacco. There was no significant difference found in impact. The normal treatment had more irritation and more body. A better tobacco taste was found in the extended treated tobacco. The extended treated tobacco was preferred.

Future Work

Plans are to go to Dupont for evaluation of cigarettes made from the complete blends with normal and extended Vacudyne treated tobacco in conjunction with superiority blend evaluations.


T. N. W.

TNW/bfk/2950n

Attachments

- (1) Williard, T. N., "Effects of Vacudyne Treatments on Flue Cured Burley and Tobacco," File Note, (05/06/87).
- (2) Denier, R. F. "Datatrace Temperature Profiles of Vacudyne Conditioning Cycles," File Note, (06/01/87).

Figure 1

FLUE-CURED CHEMICAL AND MOISTURE RESULTS¹

Lot 1

	<u>Alkaloids</u>	<u>NO₃</u>	<u>Reducing Sugars</u>	<u>Total Sugars</u>	<u>Oven Moisture (%)</u>
<u>Preconditioned</u>					
Top	2.97	0.00	17.05	18.50	10.67
Middle	3.16	0.00	15.95	17.10	10.96
Bottom	3.19	0.00	14.45	15.50	11.48
<u>One Treatment</u>					
Top	2.77	0.00	16.05	16.95	14.56
Middle	3.29	0.00	15.75	17.00	15.02
Bottom	3.23	0.00	15.60	16.90	14.03

Lot-2

Preconditioned

Top	3.40	0.00	13.75	14.85	9.45
Middle	2.67	0.00	13.70	14.75	10.16
Bottom	2.90	0.00	13.30	14.25	11.11

Three Treatments

Top	3.02	0.00	17.00	18.15	13.72
Middle	2.94	0.00	12.55	13.50	13.45
Bottom	2.89	0.00	14.90	15.50	13.92

¹Results are an average of two replications.

Figure 2
BURLEY CHEMICAL AND MOISTURE RESULTS¹

Lot 1

	<u>Alkaloids</u>	<u>NO₃</u>	<u>Reducing Sugars</u>	<u>Total Sugars</u>	<u>Oven Moisture (%)</u>
<u>Preconditioned</u>					
Top	4.54	1.62	2.35	2.70	7.64
Middle	4.57	2.31	2.30	2.60	10.94
Bottom	4.43	2.13	2.30	2.60	8.75
<u>One Treatment</u>					
Top	4.83	1.68	2.35	2.60	12.60
Middle	4.58	1.75	2.35	2.50	13.80
Bottom	4.62	1.72	2.30	2.40	13.76

Lot-2

Preconditioned

Top	4.52	1.54	2.35	2.50	8.66
Middle	4.38	1.52	2.40	2.50	8.83
Bottom	4.85	1.53	2.40	2.50	8.77

Four Treatments

Top	4.54	1.62	2.50	2.65	13.71
Middle	4.28	1.65	2.30	2.40	12.45
Bottom	4.32	1.70	2.35	2.45	12.56

¹Results are an average of two replications.