



BROWN & WILLIAMSON TOBACCO CORPORATION

RESEARCH & DEVELOPMENT

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Consumer Inquiries (DWC, FKS)

	01/94	2/94	02/93
CI Samples Received in R&D - by month	143	177	106
YTD	143	320	184
Average sample turnaround time (days)	1	2	2

During February, we received a total of 177 consumer inquiry samples, the most samples ever received during a one month period. During the first two months of 1994, we have experienced a 41% increase in the number of samples received and analyzed compared to the same period in 1993. In spite of this increase, an average turnaround time of 2 days has been maintained. Much of the increase was due to the change in GPC packaging graphics.

Reduced Ignition Propensity (LCC, KCA)

GI KOOL KS and six slim cigarettes were evaluated for ignition propensity using the NIST method. The slim cigarettes tested were More White Lts 120, Savannah Lt 100 Brown, Sticks, CAPRI, Virginia Slim SS 100 B&W and Virginia Slim SS 100 Men Box. All failed the NIST test on the Cotton Duck #6. However, they all passed the NIST test on the Cotton Duck #4. GPC and KOOL KS did not pass either test.

One KOOL KS and two GPC samples made with Kimberly-Clark banded RIP paper passed the NIST test on the Cotton Duck #6. Aluminum chloride and ammonium alginate as paper additives showed promise to reduce ignition propensity when coated on KC-427 paper (16 Coresta, 0.6% Citrate).

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Process Technology (STT)

Casing Quantitation

The generation of calibration/validation samples and spectra is complete. The preparation and spectral collection for the precision study of the casing quantitation method is also completed. The calibrations developed by the consultant are being reviewed.

Humectants and Menthol on Tobacco

With the calibration, the overall precision is about two times current negative precision (i.e. approximately 0.071% for the NIR versus 0.034% for GC for propylene glycol and 0.105% versus 0.084% for glycerin). The accuracy varies with the blend; but on average it is 0.049% for propylene glycol and 0.097% for glycerin.

Menthol calibration, validation and precision study spectra have been collected. After collating the data, a calibration will be developed and precision statistics will be generated.

Materials Science (LCC, JLS, SW)

Charcoal Filter Development

Aging Study

Charcoal cigarettes mature in four weeks and do not change significantly for two to ten months. Smoke quality deteriorates significantly after ten months. Charcoal from the two-month and twelve-month old cigarettes will be evaluated for changes with aging.

Comparative Charcoal/Charcoal Filters Evaluation

Most brands use coconut shell based charcoal in a dual dalmation design, as used by B&W. LARK and LARK MILDS use coal based charcoal impregnated with zinc and iron oxide in a triple cavity filter design. The charcoal loading varied from 25 to 85 mg for various brands, as compared to 60 mg used by B&W. In dual dalmation design, the amount of charcoal (25-70 mg) used is lower than that used in a triple cavity design (75-85 mg). Competition uses lower charcoal loadings for lower tar delivery products. JTI and RJR brands use charcoal with similar activities as used by B&W. PM and Korean brands use charcoal with higher activity.

Alternate Charcoal Filter Designs

The statistical analysis of the sensory data for ventilated (25X) cigarettes is in progress. Preliminary results suggest: paper filters impregnated with fine charcoal (from Baumgartner) reduce irritation and increase likeability. The Active Patch (AP) and Adsorbent Coated Thread (ACT) filters (from FIL) were at parity (likeability and irritation) with the dual dalmation design. The AP is a mono filter and costs 22% less than the current dual dalmation filter. Southampton is actively pursuing this design and can produce the filter on a modified KDF-2.

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Dispersible Cigarette Filters

Three samples of CYCLOFLEX water dispersible hot melt adhesives for plugwrap side seam have been received from the National Starch & Chemical Co. for evaluation. A sample of water dispersible nipping adhesive is being shipped from H. B. Fuller Co. for evaluation.

Low Cost Filter for Cost Reduction

The samples request has been placed with TIMCORP (Dennis Makepeace) for paper filters (PD - 8.8, 9.8, 10.8 and 11.8 inches/rod) made of Tela Semi reple paper. The filters will be used to fabricate GPC FF K5 cigarettes.

Heavy Weight Paper for Cost Reduction

One bin of heavy weight paper (35 g/m²) coated with burn retardants has been received from Ecusta. This paper will be used to fabricate GPC cigarettes with various levels of stem cut tobacco weight reduction.

Sensory (JERF, NA, RADP)

The following report were issued or are being issued: (1) Menthol Tolerance Study (R&D 3-009-94) (2) Puff Study, and (3) Selection of Menthol Panelists.

The construction of the olfactometer is complete. The software and hardware have been tested. Validation of the olfactometer concentrations of delivered odorants using GC is being discussed with analytical research. The equipment should be ready for use in March.

The analysis of the data from the menthol mixture study is completed. Results show that menthol bite, flavor and cooling are highly correlated and that menthol concentration is the major factor determining liking.

Methods Development (FSL, DCH, VLG, TVB, LA, FQ)Factors Method

A successful automated calibration/sample run was accomplished. Lower calibration ranges were tested. The lowest concentration for quantitation is approximately 1 ppm. The testing for the upper range of the calibration curve is in progress. Reagent carryover testing was completed.

RAA MethodsGlycerine Method

For enzyme instability, the RAA method for glycerine analysis in reconstituted tobacco has resulted in less than optimum productivity when the method is run with the alkaloid and sugar methods. The accuracy of results has not been compromised.

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Ammonia Method

The YSI Model 2700 Biochemical Analyzer was put into operation and the testing of lactate in moist snuff and aqueous solutions has begun. Procedures for use in snuff processing sample analysis will be in place by mid March.

Other Methods

Anal. kits for maltose and other sugars ordered from Boehr. Ingel-Mannheim are on five week back order. The sorbitol method test responds to sorbitol and xylitol but not to maltitol.

for W.L.C.

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