

39TH TOBACCO CHEMISTS' RESEARCH CONFERENCE

Queen Elizabeth Hotel  
Montreal, Quebec, Canada  
October 2-5, 1985

Thursday Morning, October 3 - Duluth Room - Joint Session

- 8:30 Welcome & Opening Remarks Norman J. McDonald, President  
Canadian Tobacco Manufacturers' Council
- 8:50 SYMPOSIUM: Highlights of Current Chemical Research on Tobacco  
Introduction: James F. Chaplin, Symposium Chairman  
USDA-ARS, Oxford, NC
- 9:00 #1 ENVIRONMENTAL FACTORS AFFECTING THE GROWTH, CHEMISTRY AND QUALITY OF TOBACCO.  
Charles L. Mulchi, University of Maryland, College Park, MD 20742
- 9:30 #2 SIGNIFICANCE OF CARBON AND NITROGEN PARTITIONING IN TOBACCO. J. E. Leggett  
and S. J. Crafts-Brandner, USDA-ARS, University of Kentucky, Lexington, KY  
40546 and J. F. Chaplin, USDA-ARS, Tobacco Research Laboratory, Oxford, NC  
27565
- 10:00 \*\*\*\*\*INTERMISSION\*\*\*\*\*
- 10:20 #3 TOBACCO CELL WALL STRUCTURAL BIOPOLYMERS. Gordon H. Bokelwan, William S.  
Ryan, Jr., and H. Howard Sun, Philip Morris USA, Research Center, P. O. Box  
26583, Richmond, VA 23261 and George C. Ruben, Department of Biological  
Sciences, Dartmouth College, Hanover, NH 03755.
- 10:50 #4 CUTICULAR CONSTITUENTS OF TOBACCO: FACTORS AFFECTING THEIR PRODUCTION AND  
THEIR ROLE IN INSECT AND DISEASE RESISTANCE AND SMOKE QUALITY. Ray F.  
Severson, USDA-ARS, Athens, GA 30613, Albert W. Johnson, Pee Dee Research and  
Education Center, Clemson University, Florence, SC 29503, and D. Michael  
Jackson, USDA-ARS, Tobacco Research Laboratory, Oxford, NC 27565.
- 11:20 #5 CHEMISTRY OF TOBACCO CONSTITUENTS INFLUENCING FLAVOR AND AROMA. W. W. Weeks,  
North Carolina State University, Department of Crop Science, P. O. Box 7620,  
Raleigh, NC 27695-7620.
- 11:50 SUMMARY: James F. Chaplin.
- 12:00 \*\*\*\*\*LUNCH\*\*\*\*\*

Thursday Afternoon, October 3

Session A: Tobacco Chemistry  
Location: Duluth Room  
Albert W. Johnson, Presiding

Session B: Cigarette Technology  
Location: Mackenzie Room  
Colin L. Browne, Presiding

- 1:40 #6 GENETIC STUDIES OF PREMATURE  
FLOWERING OF TOBACCO. T. R.  
Terrell, Virginia Tech Southern  
Piedmont Center, P. O. Box 448,  
Blackstone, VA 23824.
- #14 FILTER PRESSURE DROP PREDICTIONS  
BASED ON RANDOM FILAMENT  
PLACEMENT, Larry W. Renfro,  
Research Laboratories, Eastman  
Chemicals Division, Eastman Kodak  
Company, Kingsport, TN 37662

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- 2:00 #7 EFFECT OF NITROGEN AND POTASSIUM FERTILIZER APPLICATION ON CURED LEAF YIELD, TISSUE COMPOSITION, AND USABILITY OF BURLEY TOBACCO. G. Kvaaylo, VPI + SU, Eastern Shore Research Station, Painter, VA 23420 and J. L. Sims, Department of Agronomy, University of Kentucky, Lexington, KY 40546-0091.
- 2:20 #8 GENETIC AND CULTURAL PRACTICE INFLUENCES ON NITRATE ACCUMULATION AND DISTRIBUTION IN BURLEY TOBACCO. M. T. Nielsen and G. B. Collins, Department of Agronomy, University of Kentucky, Lexington, KY 405646
- 2:40 #9 GENETIC ASPECTS OF LEAF PROTEIN EXTRACTION FROM TOBACCO. D. W. De Jong and G. W. Pittarelli, USDA-ARS, Beltsville, MD 20705
- 3:00 \*\*\*\*\*INTERMISSION\*\*\*\*\*
- 3:20 #10 GENETICS AND BREEDING OF TOTAL AND CONSTITUENT POLYPHENOLS IN TOBACCO. G. R. Gwynn and R. E. Williamson, USDA-ARS, Oxford, NC 27565, and M. E. Snook, USDA-ARS, Athens, GA 30613.
- 3:40 #11 POLYPHENOL LEVELS VERSUS TOBACCO LEAF DEVELOPMENT. M. E. Snook and R. F. Severson, USDA-ARS, Athens, GA 30613, and G. R. Gwynn and V. A. Sisson, USDA-ARS, Oxford, NC 27565.
- #15 PLUGMAKER OPERATION AND FILTER PERFORMANCE. G. T. Rasmussen, Eastman Chemicals Division, and J. D. Evans, Eastman Chemical Products, Inc., Eastman Kodak Company, Kingsport, TN 37662.
- #16 THE EFFECTS OF ATMOSPHERIC CONDITIONS ON FILTER ROD CURING. Perry G. Aliotti, Celanese Fibers Operations, P. O. Box 32414, Charlotte, NC 28232.
- #17 COMPARISON OF ON-LINE LASER VENTILATION TO PREPERFORATION: EFFECTS ON CIGARETTE PERFORMANCE. Perry G. Aliotti, Celanese Fibers Operations, P. O. Box 32414, Charlotte, NC 28232
- #18 AN IMPROVED METHOD FOR THE MEASUREMENT OF FILTER COLLAPSE. Dale E. Mathis and Charles R. Weatherly, Research Laboratories, Eastman Chemicals Division, Eastman Kodak Company, Kingsport, TN 37662
- #19 INVESTIGATION OF THE RELATIONSHIP BETWEEN FILTER DESIGN PROPERTIES AND THE RELATIVE CONTRIBUTION OF THE THREE MAIN FILTRATION MECHANISMS TOWARDS OVERALL FILTRATION EFFICIENCY IN VENTILATED CELLULOSE ACETATE FILTERS. K. Milson, Imperial Tobacco Limited, Research and Development Department, Research and Development Department, Raleigh Road, Bristol BS3 1QX, England.

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- 4:00 #12 RELATIONSHIPS BETWEEN LEVELS OF CUTICULAR COMPONENTS FROM GREEN LEAVES OF NICOTIANA SPECIES AND OVIPOSITION BY TOBACCO BUDWORM AND TOBACCO HORNWORM MOTHS. D. M. Jackson, V. A. Sisson, USDA-ARS, Oxford, NC 27565, and R. F. Severson, USDA-ARS, Athens, GA 30613.
- 4:20 #13 NEAR-INFRARED SPECTROPHOTOMETRY IN TOBACCO GENETIC RESEARCH. R. E. Williamson, USDA-ARS, Oxford, NC 27565 and W. F. McClure, North Carolina State University, Raleigh, NC 27650.
- #20 NOVEL METHOD FOR MEASURING THE DIFFUSIONAL CONDUCTANCE OF CIGARETTE PAPER. Y. Hampl, Jr., D. F. Durocher, and E. P. Bullwinkel, Kimberly-Clark Corporation, 1400 Holcomb Bridge Rd., Roswell, GA 30076.
- #21 FACTORS AFFECTING CIGARETTE ENDS FALL-OUT. R. Rice and T. Smith, Imperial Tobacco Ltd., P. O. Box 6500, Montreal, Quebec H3C 3L6, Canada.

4:40 \*\*\*\*\*ADJOURNMENT\*\*\*\*\*  
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Friday Morning, October 7

Session A: Tobacco Chemistry  
Location: Duluth Room  
Roddy Pandeya, Presiding

Session B: Cigarette Technology and Smoke Chemistry  
Location: Mackenzie Room  
Dave Thomas, Presiding

- 8:40 #22 ON THE ISOLATION AND IDENTIFICATION OF NEW TOBACCO-SPECIFIC N-NITROSAMINES. D. Chou, K. D. Brønneberg, J. D. Adams, and D. Möftmann, American Health Foundation, Valhalla, NY 10595.
- 9:00 #23 N-NITROSAMINE FORMATION IN TOBACCO. W. J. Chamberlain, J. L. Baker, and O. T. Chortyk, USDA-ARS, P. O. Box 5677, Athens, GA 30613, and M. G. Stephenson, USDA-ARS, Tifton, GA 31793.
- 9:20 #24 INFLUENCE OF GENOTYPE, ONTOGENY, AND CURING ON CIS-ABIENOL LEVELS. David A. Danehower, R. C. Long, W. W. Weeks, North Carolina State University, Department of Crop Science, Box 7620, Raleigh, NC 27695-7620.
- #31 SENSORY EVALUATION OF SIDESTREAM ODOR USING TRANSFER TESTING METHODOLOGY. Lawrence H. Gains, and Robert S. Marmor, Lorillard Research Center, P. O. Box 21688, Greensboro, NC 27420.
- #32 DISTRIBUTION OF FLAVOR INGREDIENT ON SMOKING. T. Samejima, Odawara Experiment Station, Japan Tobacco Inc., 4-13-20 Sakawa, Odawara, Kanagawa 256, Japan.
- #33 THE CHEMICAL CHARACTERISTICS OF SMOKE DELIVERED BY CLOVE-CONTAINING CIGARETTES. M. B. Wise, S. K. Holladay, C. E. Higgins, R. A. Jenkins, and M. R. Guerin, Analytical Chemistry Division, Oak Ridge National Laboratory, Oak Ridge, TN 37830.

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- 9:40 #25 CHARACTERIZATION OF THE SUCROSE ESTER FRACTION FROM N. GLUTINOSA. R. F. Arrendale, R. P. Severson, L. B. Smith, and K. L. McDuffie, USDA-ARS, P. O. Box 5677, Athens, GA 30613, and Y. A. Sisson, USDA-ARS, Route 2, Box 16G, Oxford, NC 27565.
- 10:00 #26 THE DETERMINATION OF FREE AMINO ACIDS ON TOBACCO. W. E. Crouse and J. H. Bell, Lorillard Research Center, P. O. Box 21688, Greensboro, NC 27420.
- 10:20 \*\*\*\*\*INTERMISSION\*\*\*\*\*
- 10:40 #27 GENETIC VARIABILITY FOR TOTAL ALKALOIDS AMONG MARYLAND TOBACCO CULTIVARS FOR THREE STALK POSITIONS OVER ENVIRONMENTS. M. K. Aycock, Jr., Department of Agronomy, University of Maryland, College Park, MD 20742.
- 11:00 #28 HIGH PERFORMANCE THIN-LAYER CHROMATOGRAPHY AND ITS APPLICATION TO ALKALOIDS IN TOBACCO. Richard E. Davis, Philip Morris USA, Research Center, P. O. Box 26583, Richmond, VA 23261.
- 11:20 #29 ALKALOID ACCUMULATION IN HOMOZYGOUS DOMINANT ALKALOID GENOTYPES AND ISOGENIC LOWER ALKALOID GENOTYPES. L. P. Bush and S. L. Gay, Department of Agronomy, University of Kentucky, Lexington, KY 40546-0091, and J. F. Chaplin, USDA-ARS, Oxford, NC 27565.
- #34 ON THE MAINSTREAM-SIDESTREAM DISTRIBUTION OF SMOKE COMPONENTS FROM COMMERCIAL CIGARETTES. J. D. Adams, K. J. O'Mara-Adams, and D. Hoffmann, American Health Foundation, Valhalla, NY 10595.
- #35 SMOKE DUPLICATOR. C. McBride, Imperial Tobacco Ltd., P. O. Box 6500, Montreal, Quebec H3C 3L6, Canada.
- #36 A TEST CHAMBER AND INSTRUMENTATION FOR THE ANALYSIS OF ENVIRONMENTAL TOBACCO SMOKE (ETS). David L. Heavner, Frederick A. Thome, Larry W. Eudy, and Charles R. Green, R. J. Reynolds Tobacco Company, Bowman Gray Technical Center, Winston-Salem, NC 27102.
- #37 CALIBRATION AND SAMPLING TECHNIQUES FOR AN ATMOSPHERIC PRESSURE CHEMICAL IONIZATION MASS SPECTROMETER COUPLED TO A TEST CHAMBER FOR THE STUDY OF ENVIRONMENTAL TOBACCO SMOKE. Frederick A. Thome, David L. Heavner, Bradley J. Ingebrethsen, Larry W. Eudy, and Charles R. Green, R. J. Reynolds Tobacco Company, Bowman Gray Technical Center, Winston-Salem, NC 27102.
- #38 STUDIES ON THE VAPOR-PARTICULATE PHASE DISTRIBUTION OF ENVIRONMENTAL NICOTINE BY SELECTED TRAPPING AND DETECTION METHODS. Larry W. Eudy, Frederick A. Thome, David L. Heavner, Charles R. Green, and Bradley J. Ingebrethsen, R. J. Reynolds Tobacco Company, Bowman Gray Technical Center, Winston-Salem, NC 27102.

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- 2:40 #43 LEAF CHEMISTRY OF THE NICOTIANA SPECIES - HYDROCARBONS (C<sub>25</sub>-C<sub>36</sub>). V. A. Sisson, Tobacco Research Laboratory, USDA-ARS, Oxford, NC 27565, and R. F. Severson, USDA-ARS, Athens, GA 30613.
- #49 EVALUATION OF A PHOSPHINE SCRUBBER FOR TOBACCO FUMIGATION CHAMBERS. William R. Harvey and Chris S. Kroustalis, Philip Morris USA, Research Center, P. O. Box 26583, Richmond, VA 23261.

3:00 \*\*\*\*\*INTERMISSION\*\*\*\*\*

- 3:20 #44 AN AUTOMATED INSTRUMENT SYSTEM FOR THE CHARACTERIZATION OF HEADSPACE VOLATILES. Kenneth M. Walker, and E. Demp Alford, Brown and Williamson Tobacco Corporation, RD and E, P. O. Box 35090, Louisville, KY 40232.
- #50 APPLICATION OF A THEORETICAL MODEL OF WATER SORPTION BY TOBACCO. H. A. Hartung and J. C. Crump, Philip Morris USA, Research Center, P. O. Box 26583, Richmond, VA 23261.
- 3:40 #45 AUTOMATED ANALYSIS OF GLYCERYLIC ACID IN LICORICE FLAVORS AND CIGARETTE TOBACCO EXTRACTS BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY. Joyce F. Starhardt and Garland V. Carter, Philip Morris USA, Research Center, P. O. Box 26603, Richmond, VA 23261.
- #51 EFFECTS OF PROCESSING ON THE STRUCTURE AND PHYSICAL PROPERTIES OF TOBACCO. R. Comber, Group Research and Development Centre, British-American Tobacco Co. Ltd., Southampton SO9 1PE, United Kingdom, and A. Porter, Imperial Tobacco Ltd., P. O. Box 6500, Montreal, Quebec H3C 3L6, Canada.

4:00 Business Meeting

6:30 Reception

7:30 Banquet

Saturday Morning, October 5 - Duluth Room - Joint Session

Claude Lewis, Presiding

9:00 Philip Morris Awardee, Research Highlights

9:40 #52 QUANTITATION OF SOME TOBACCO ANIONS BY ELUENT SUPPRESSED ANION EXCHANGE LIQUID CHROMATOGRAPHY. Charles H. Risner, R. J. Reynolds Tobacco Company, Bowman Gray Technical Center, Winston-Salem, NC 27102.

10:00 #53 CADMIUM IN TOBACCOS - GENETIC VARIATION IN ACCUMULATION POTENTIAL AND POSSIBLE MECHANISMS OF ACCUMULATION. G. J. Wagner, and R. Yeargan, Department of Agronomy, University of Kentucky, Lexington, KY 40546-0091.

10:20 \*\*\*\*\*INTERMISSION\*\*\*\*\*

10:40 #54 DETERMINATION OF BERYLLIUM LEVELS IN TISSUES OF HYDROPONICALLY-GROWN TOBACCO PLANTS BY GC-MS. Lynn Kosak-Channing and Ann C. Gray, USDA-ARS, Tobacco Laboratory, Beltsville Agricultural Research Center, Beltsville, MD 20705.

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- 11:00 #55 STUDIES ON PHYSICAL CHARACTERISTICS OF KOREAN TOBACCO LEAVES AND RECONSTITUTED TOBACCO SHEET (RTS). K. H. Kim, K. K. Yoo, Y. H. Choi, Y. S. Joo, and B. K. Kim, Korea Ginseng and Tobacco Research Institute, #302 Shinseong-Dong, Joong-Gu, Daejeon-Shi, Choongcheongnam-Do, Korea.
- 11:20 #56 ALTERING THE COMBUSTION OF TOBACCO THROUGH THE ADDITION OF ALKALI METAL CARBOXYLATE SALTS. Charles F. Mattina, Kimberly-Clark Corporation, Technical Paper and Speciality Products, Lee, MA 01238.
- 11:40 \*\*\*\*\*ADJOURNMENT\*\*\*\*\*

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