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ITL R & D ACTIVITIES - 1990

- PROJECT QUIVER
- PCLX (PROJECT DEER)
- PROCESS STUDIES
  - LAMINA DRYING
  - STS
- PROJECT DAY
- PROJECT VISA

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## RESEARCH ACTIVITIES

### DAY

- TOBACCO COMBUSTION CIGARETTE WITH LOW BIOLOGICAL ACTIVITY & REDUCED DELIVERIES OF CO, VAPOUR PHASE AND SIDESTREAM SMOKE.

### VISA

- REDUCED SIDESTREAM CIGARETTE.

### SMOKING BEHAVIOUR

- RECORDING & DUPLICATION OF HUMAN SMOKING PATTERNS.

### BIOLOGICAL RESEARCH

- AMES TESTING.
- ENZYME & MICROBIAL TREATMENT OF TOBACCO.

### ANALYTICAL METHOD DEVELOPMENT

- METHODS FOR DAY.
- NON ROUTINE ANALYSES.

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DAY

OBJECTIVE IS A TOBACCO COMBUSTION  
CIGARETTE WITH:

- SUBSTANTIAL REDUCTION IN SPECIFIC  
BIOLOGICAL ACTIVITY OF CONDENSATE  
(SPECIFIC AMES ACTIVITY, PHENOLS, B (a) P) .
- REDUCED CO & VAPOUR PHASE.
- REDUCED SIDESTREAM.
- ADEQUATE NICOTINE.
- ACCEPTABLE TASTE & FLAVOUR.

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DAY

- REDUCTION OF CONDENSATE ACTIVITY BY PROTEIN AND POLYPHENOL REMOVAL FROM CUT TOBACCO.
  - PROTEIN REMOVAL BY SDS, COMMERCIAL PROTEASES OR NATIVE TOBACCO YEASTS USING A 125 LITRE FERMENTER.
  - POLYPHENOL REMOVAL BY PVPP OR YEASTS.
  - TOBACCO EXTRACT CONCENTRATION.
  - TOBACCO DRYING.
  
- IMPROVING SMOKING QUALITY OF TOBACCO SHEET BY CHANGES IN FORMULATION.

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DAY

- CIGARETTE DESIGNS TO REDUCE CO AND VAPOUR PHASE.

- RATIO FILTERS.

- PAPER BURN ADDITIVE REDUCTION.

- ENHANCED DIFFUSION.

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## VISA

UNSUCCESSFUL ATTEMPTS TO ELIMINATE  
OFF TASTE HAVE INCLUDED BLEND CHANGES,  
TOBACCO FLAVOURS, AMELIORANTS, LOW  
LEVELS OF MENTHOL OR SPEARMINT.

- WORK IS CONTINUING TO ELIMINATE THESE  
PROBLEMS IN COOPERATION WITH PAPER  
SUPPLIERS BY USING ACID TREATED PAPERS  
(ECUSTA), ALTERNATIVE INORGANIC SALTS  
(DE MAUDUIT) AND C.A./POLYPROPYLENE  
FILTERS LOADED WITH F/C TOBACCO EXTRACT  
(KIMBERLY-CLARK) .

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VISA

SIDESTREAM REDUCTION BY:

- REDUCED TOBACCO WEIGHT.
- SPECIALTY PAPERS.

PAPERS FROM ECUSTA, DE MAUDUIT  
& KIMBERLY-CLARK UNDER REVIEW

- MOST PAPERS SUCCESSFULLY  
REDUCE VISIBLE S/S (25-75%)
- PROBLEMS OCCUR WITH M/S  
TASTE, M/S CO, ASH STABILITY  
OR BURN RATE.

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## SMOKING BEHAVIOUR

RECORDING & DUPLICATION OF HUMAN  
PROFILES WITH:

- CIGARETTES OF DIFFERENT TAR/NICOTINE RATIOS.
- CIGARETTES WITH ADDED NICOTINE CITRATE.

ALVEOLAR CO MEASUREMENTS:

- NICOTINE ENHANCED CIGARETTES.
- RATIO FILTERS.

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## BIOLOGICAL RESEARCH

- AMES TEST

- ANALYSIS OF TREATED/RECONSTITUTED TOBACCO MATERIAL FROM PROJECT DAY.

- ENZYMES

- TOBACCO TREATMENT TO REMOVE PROTEIN.

- YEASTS

- USE OF TOBACCO YEASTS TO REMOVE PROTEIN AND POLYPHENOLS.
- TO IMPROVE FLAVOUR?

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