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EDM/RA/46D

PROJECT RIO - COMPARISON OF COMMERCIAL
CIGARETTES: INFLUENCE OF DESIGN FEATURES
IN MUTAGENICITY AS MEASURED BY THE
AMES TEST - A SUMMARY REPORT

REPORT NO. RD.2040 RESTRICTED

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26th January, 1987

PROJECT RIO - COMPARISON OF COMMERCIAL CIGARETTES:
INFLUENCE OF DESIGN FEATURES ON MUTAGENICITY AS MEASURED
BY THE AMES TEST - A SUMMARY REPORT

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SUMMARY

The relative specific activity of mainstream smoke condensate from commercial cigarettes selected from the Australian, Brazilian, Canadian and German markets has been evaluated using the Ames bacterial mutagenicity assay. Individual country reports describing the data in detail have already been issued, and the present report serves to draw the whole data together.

Increased activity was observed for increasing levels of Burley tobacco and increasing filter ventilation. Changes in tobacco nicotine levels did not affect Ames activity.

Mutagenic activity was also influenced by other features that could not be identified and factors that strongly modify mutagenicity may be masked. The range of variation of some design parameters was so narrow that characteristics known to influence mutagenicity were not apparent in the study e.g. cigarette circumference.

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This work serves to highlight future work to study single design variables to their extremes in order to further dissect the complex interactions in this multivariate commercial cigarette experiment. Such studies may then be able to identify more clearly the features that influence mutagenicity of smoke.

KEYWORDS

Ames Test
Salmonella typhimurium
Mutagenicity
Blend Composition
Cigarette Properties
Tobacco Chemical Properties
Australia
Brazil
Canada
Germany