

PROJECT CONQUEROR

A. The results from past samples tested in Project CONQUEROR have shown the following trends:-

- (1) Charcoal can be a very effective reducer of toxicity.
- (2) The addition of P.E.I. to filters reduces the toxicity of the cigarette smoke somewhat.
- (3) The arrangement of the filter sections in a composite filter may be important in achieving a maximum reduction in toxicity.

B. Based on chemical and paramecium results obtained in R. & D.E., it appears that:-

- (1) The addition of water to filters reduces toxicity appreciably.
- (2) Additives present on the filter in the wet (water) form are more effective than in the dry form.
- (3) Addition of zinc compounds to filters are of interest in the reduction of the hydrogen sulphide/hydrogen cyanide contents of cigarette smoke.
- (4) The Le Carbone material is of interest because it shows greater selective filtration within the vapour phase of cigarette smoke than do granular carbons. It also reduces significantly the toxicity of cigarette smoke to paramecium.

C. In terms of tumour production in skin painting experiments, materials such as PCL, S164 and 65 and sodium nitrate treated tobacco are superior to flue-cured tobacco.

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Based on these observations, R. & D.E. would like to suggest the following programme of work samples for testing at Frankfurt:-

Number of
Samples

1. Experiments to Aid Interpretation of Results

(a) Cambridge filter + 30 mm bonded charcoal.

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This experiment is aimed to determine the maximum activity rating (BZ) which can be attained - a necessary base-line for defining the design/performance of future filters.

(b) Relative toxicity of the different puffs taken on a cigarette.

4 - 6

In experiments in which a high activity-rating is obtained it is necessary to smoke more than one cigarette. As the concentration of smoke entering the test apparatus follows a "saw-tooth", the interpretation of the results may not be straightforward.

2. Effect of P.E.I.

Assuming that, for the present, an upper level of 5% P.E.I. is envisaged and that a dual filter plug is required, then:-

<u>T Section</u>	<u>M Section</u>
Paper	Acetate
Paper + 2% P.E.I.	Acetate
Paper + 5% P.E.I.	Acetate
Acetate	Acetate
Acetate + 2% P.E.I.	Acetate
Acetate + 5% P.E.I.	Acetate

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	<u>Number of Samples</u>
3. <u>Non-Carbon Filter Plugs</u>	
(a) Effect of Water	6 - 8
(b) Zinc Salts	4
(c) Paper Flock	2
4. <u>Carbon Filter Plugs</u>	
(a) Comparison of Le Carbone v. usual carbons	4
(b) Effect of carbon filters on the smoke from cigarettes made from different tobaccos	4
(c) Inter-relation of particulate and vapour filtration	6 - 8
5. <u>Cigarettes</u>	
(a) SH64/SH65	6 - 8
(b) FCL/BATEX	
(c) Tobacco with additives, e.g., NaNO ₃	
(d) Examination of samples subjected to the long- term skin-painting test, e.g. Viceroy, AF/Bo	2
Two other approaches may be worth considering:-	
(a) Testing of commercial company and competitor cigarettes - samples to be chosen by the territory.	
(b) Testing of casings and flavourings, etc., on standard cigarette rods.	
6. <u>"Best Filter" Design</u>	
This depends upon the definition of "best filter".	6 - 10
There are two approaches:-	
(a) Using the best chemical filter arrangements.	
(b) Setting an arbitrary target, e.g. a cigarette with the toxicity of TEMPO, and attempting to achieve this with the minimum use of charcoal.	

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5165 for Hyperplasia

D/F

I am holding the file copies of this note & CVB's copy at the moment in case you don't want a non-B-AT product tested at Battelle.

Can I go ahead?

C/A

@/A

I see no reason why we shouldn't test at Battelle — but it would be better for the Committee to agree first.

But go ahead with the cigarettes
We can always do with these for all sorts of reasons.

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