BATCo

BATCo document for Province of British Columbia 16 April 1999

PLAN AND OBJECTIVES

1. RAW MATERIAL INVESTIGATIONS

a) Increase crown specially for PRT

Objective: To reduce cost of PRT when used to replace leaf in proportions higher than waste utilization.

b) Other tobaccos, conventionally grown

Objective: To assess importance of leaf characteristic to subjective quality of PRT.

c) Varia Tobacco

Objective: To demonstrate ability to cope with wastes produced in a wide range of territories.

d) Plant Parts (Lamina, Stem, Stalk)

Objective: To determine quantitatively the raw material requirement for fibrous material, and to assess the suitability of stem and stalk to satisfy that requirement.

2. PRT PROCESS TECHNOLOGY

Feed preparation: Paper Making Technology; Extraction and Concentration; Impregnation of Extract

Development Objective: To achieve controllable pilot plant capability at Glory Mill in "mini" and "maxi" modes.

Research Objective: To explore process variants in terms of potential process or product improvement.

3. PRT FORMULATIONS CONTAINING PRT

Objective: To determine whether anticipated subjective deficiencies of PRT can be offset by blend formulation, casings, flavours.

4. USE OF NON-TOBACCO MATERIALS IN PRT

Objectives: Density and impregnation control; burn control; nicotine delivery enhancement; biological activity reduction; taste and flavour enhancement.

5-11. ACCEPTANCE CRITERIA

5. Physical & Chemical Properties of Smoke

6. Biological Response

7. Subjective Assessment

8. Physical Properties of Cigarettes

9. Commercial Assessment
- Terms of impact on cigarette plant process and cost.

10. Consumer Acceptance

11. Generic Appraisal of PRT Ti Concept in A Whole

PROGRAMS

1. RAW MATERIAL INVESTIGATIONS

a) Exploration of importance of traditional leaf prepare and curing procedures with a view to their elimination or modification to lower leaf cost.

Upgrading subjective quality of leaf that has not been flue cured via enzymatic treatment.

b) GRDC manufacture and evaluate PRT made from a variety of leaf types.

c) With B & W waste, show that Glory Mill can equal Schweitzer.

d) Joint WT and GRDC studies of PRT process requirements, GRDC assessment of quality of "stalk" sheets.

2. PRT PROCESS TECHNOLOGY

Numerous studies at WT
Studies of Extraction & Concentration
Reverse Osmosis
Treatment of Extract - partitioning, solvent extraction, etc.
Enzymatic treatment of leaf
((See Item 1. a)))

4. USE OF NON-TOBACCO MATERIALS

Study of potential of foamed sheet by WT. Study effect of chalk incorporated in PRT. Compare stalk with wood pulp in PRT.

5-11. ACCEPTANCE CRITERIA

5. Physical & Chemical Properties of Smoke

Establishment of agreed upon testing routines and facilities and allocation of testing work among project participants.

6. Biological Response

First mouse skin evaluation of PRT.

PROGRESS

1. RAW MATERIAL INVESTIGATIONS

a) Flue cured, mature leaf found to be superior to cost saving alternatives from Canada. ITPI subjective evaluations question this conclusion.

Enzymatic treatment achieves conversion of starch to sugar but does not achieve desired upgrading of varia dried leaf.

b) 12 tobaccos evaluated GRDC report in preparation. (T16 Progress Report August 1973)

c) B&W waste being used to set up maxi mode.

d) 85% stem content adequate to make PRT. Stalk can be processed, with enzymal treatment. Stalk declared unsuitable raw material on processing evidence, sheet quality, and economics. Rothmans (Canada) and Delhi Research Station disagree, particularly with economic analysis, based on their evaluations of 1972 close planted tobacco. Base sheet bulk found by WT to be related to raw material used. Follow up recommended.

2. PRT PROCESS TECHNOLOGY

Paper Making
Mini mode used for Canadian 1972 crop samples and B&W waste. "A processing facility for small scale (50-100 lbs samples) is available for experimental purposes" Maxi mode process under development.

Extraction & Concentration
Extraction temperature found to affect TPM. Effect of water hardness unresolved. Value of Reverse Osmosis questioned. ITL steps work on Reverse Osmosis and screw extractor.

Enzyme Treatment
Enzyme treatment now not considered essential element.

4. USE OF NON-TOBACCO MATERIALS

Chalk found to have no conclusive effect on biological activity (hypersplasia & sebaceous gland). Could not determine subjective difference between stalk and wood pulp. Results inconsistent.

5-11. ACCEPTANCE CRITERIA

5. Physical & Chemical Properties of Smoke

Testing facilities & routines established and in use as required.

6. Biological Response

Samples in preparation for mouse skin assessment of effect of thickness, density and impregnation, also PRT vs. control blend. Short term tests show "PRT" no better than control blend (235/8 and 245/11)

CURRENT STATUS AND PROGRAMS

1. RAW MATERIAL INVESTIGATIONS

a) Canadian 1973 samples to be converted and assessed. Economic assessment awaits more analytical approaches needed in order to achieve objectives.
UK crop and conversion to PRT program to be continued. What is relevance in relation to non UK interests?
Program to evaluate homogenized tobacco (TSO method) started.

Reserve studies now regarded as "unimportant" program mounted to achieve reduction of protein content of tobacco.

c) B&W waste program continuing.

d) Delhi Research Station has assisted to have their planted "whole plant" tobacco made into sheet by AMF. Has have biochemical assessment (by University of Kentucky)
Rothmans return cigarettes with 30% "whole plant" TCL for joint evaluation by ITPI and Rothmans. Rothmans may attempt sheet team bio-assay.

2. PRT PROCESS TECHNOLOGY

Maxi Mode
Development of maxi mode capability to continue. Raw material may be needed to run maxi mode. Can sample high quality low cost leaf plant scrap from Canada, if wanted.?

Extraction & Concentration
GRDC to pursue effect of extraction temperature and water hardness. ITL to concentrate on Centitherm as alternate to climbing film evaporator. Reverse Osmosis dropped in GRDC test

Enzyme Treatment: See 1. a) above

4. USE OF NON-TOBACCO MATERIALS

Foamed sheet study, WT

5-11. ACCEPTANCE CRITERIA

6. Biological Response

Mouse skin program - thickness, density impregnation.
Should Glory Mill PRT be given extensive plant evaluation to get some indication of activity status of PRT?

NOTE: This page indicates R.M.O. information and comments.

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