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12th January, 1973.

Mr. R.M. Gibb,  
Imperial Tobacco Products Ltd.,  
P.O. Box 6500,  
Montreal 101 P.Q.

Dear Bob,

I have had an opportunity to consider the points in your letter of 19th December, 1972 which was seriously delayed by the Christmas mail.

In terms of the Canadian Department of Agriculture it is obviously necessary to keep them informed of the progress of work in which they are involved. On a formal basis we would suggest that this is done by the use of edited versions of our reports which we would prepare for you to forward to them. The difficulty at the present moment is that we are still waiting for results and the reports - from which the edited versions could be prepared - are unlikely to appear early enough for your present discussions. It seems therefore that we need to write a paper summarising the available information and this can be done.

On page 3 of your letter you put down some suggested conclusions, which I would prefer to call working hypotheses, and write them in the following form :-

- (1) The normal stem yield is high enough to permit the conversion of conventional tobacco into PRT.
- (2) Stalk will not be required as a source of additional fibre - it has no advantage in terms of smoking properties and it will carry a penalty in terms of processing costs.
- (3) The control of tar yield will involve both the PRT process (extraction addback, sheet density, sheet thickness etc.) and the raw material.
- (4) The sheet making process has not been standardized nor is it sufficiently reproducible at this time to assess the effect of small changes in the physical properties of the raw materials.
- (5) The first attempts to simulate flue-curing by controlled air flow through beds of forage harvested leaf have been a failure judged by -
  - content of nicotine
  - reducing sugar,
  - starch
  - visual inspection

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- (6) Emphasis must be given to the pretreatment of the tobacco prior to drying or simulated curing aimed at :-
- achieving a greater degree of maturity;
  - improving the uniformity of maturity;
  - controlling undesirable biochemical reactions associated with cutting and bruising of the green leaf.
- (7) None of the treatments so far measured has succeeded in raising the nicotine level.
- (8) Enzymatic treatment of the dried tobacco is an unresolved issue.

If you accept these restatements, I believe that we can see where the Canadian contribution should be made :-

I.T.P.

In our discussion after the Steering Meeting, the main role of I.T.P. for 1973 seemed to be in developing a two-stage mechanical harvesting technique based on leaving the stalk standing in the field. This implies growing for this purpose on a reasonably large scale and we suggested that the I.T.P. farm should be restricted to two large scale experiments. These should be primarily concerned with comparing curing and rapid drying based on the assumption that last year's experiments were heavily influenced by the relative immaturity of the leaf which was harvested. I see no reason to change this.

Canadian Department of Agriculture

I believe that they could best help by concentrating on the work which stems directly from (6).

This work must be done by a laboratory close to the growing area and the experiments should be related to the techniques which would be used for harvesting.

The immediate interest is focused on :-

- (1) Treatments to aid the maturing of leaf both in the field and after harvesting.
- (2) Treatment to prevent biochemical degradation of the cut edges and bruised leaf arising from mechanical harvesting.
- (3) Increasing the nicotine level. Although the work so far has not been encouraging unless the C.D.A. people have exhausted all their ideas I believe this should still be a subject for further work.

Southampton should then concentrate its effort on the use of enzyme and other treatments on the leaf after drying (aimed at modifying its starch, protein, etc.) This would be one route which may enable the tar yield to be reduced and the smoking quality improved.

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I have organised a meeting with yourself, Peter Nicholl, Jim Drummond, and possibly Terry Mitchell, to follow the Steering Meeting solely on PRT-71C. We can use your letter and these comments as the framework for the discussion. This would be valuable in getting an identity of view prior to the more detailed discussion in Canada with Boswall and others.

I am very pleased that you can come to the Steering Committee Meeting and you have been booked in at the Dorchester. It has not been necessary to reserve the room for the night prior to your arrival, the hotel assure me that it will be available when you arrive.

Looking forward to seeing you.

Yours sincerely,

N.E. Willis.

n.o.o. c.c.  
Dr. S.J. Green.  
Mr. J.W. Drummond.

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