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**EXPERT IN THE
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OF CIGARS
AND CIGARILLOS,**

1961/74/004

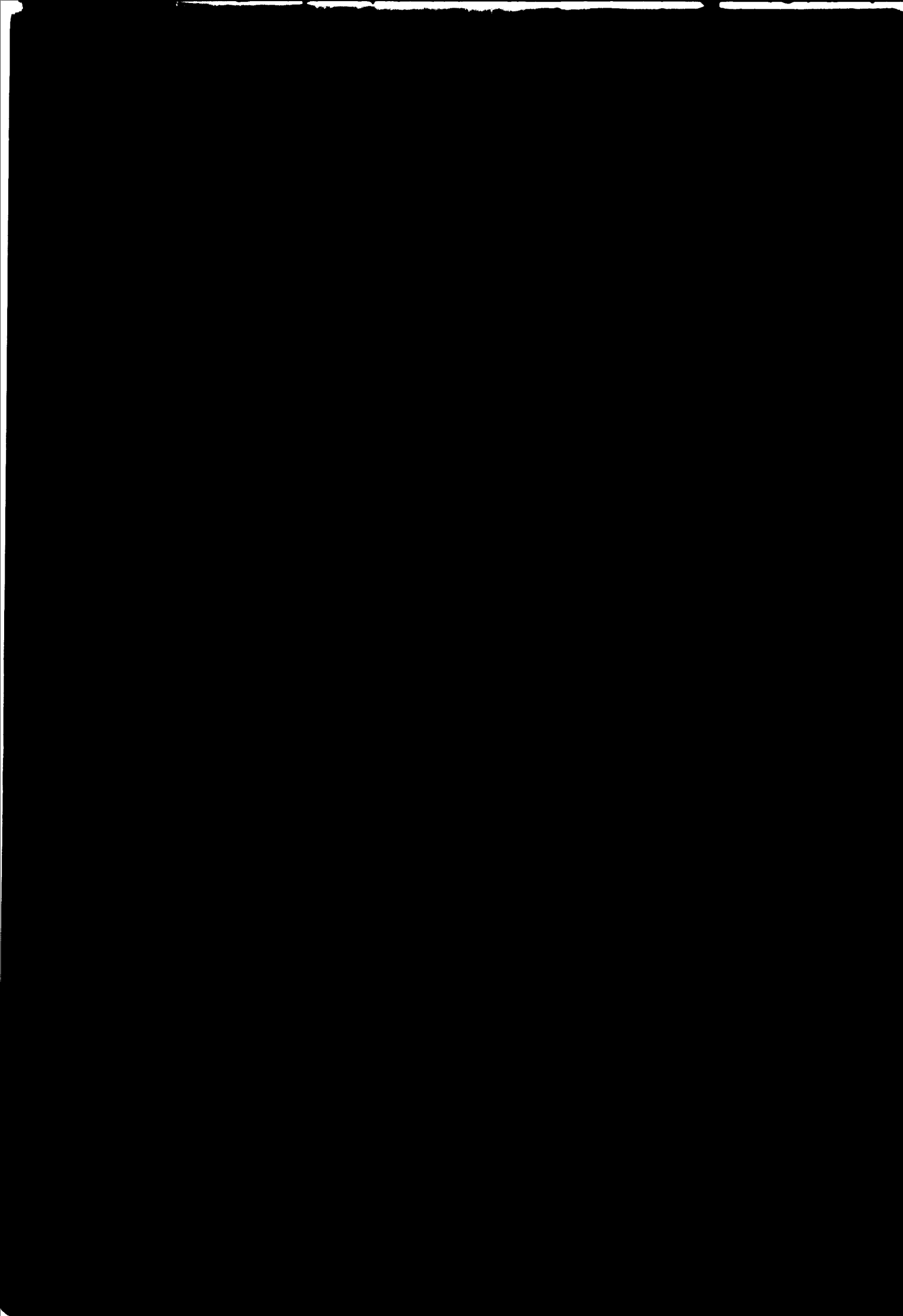
SI LANKA

TECHNICAL REPORT

**Prepared for the Government of Sri Lanka by the
United Nations Industrial Development Organization,
executing agency for the
United Nations Development Programme**



United Nations Industrial Development Organization



United Nations Development Programme

EXPERT IN MANUFACTURE OF CIGARS AND CIGARILLOS

IS/SRL/74/054

SRI LANKA

Project findings and recommendations

Prepared for the Government of Sri Lanka
by the United Nations Industrial Development Organization,
executing agency for the United Nations Development Programme

Based on the work of Karl Gunnar Olsson, tobacco expert

United Nations Industrial Development Organisation
Vienna, 1976

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ABSTRACT

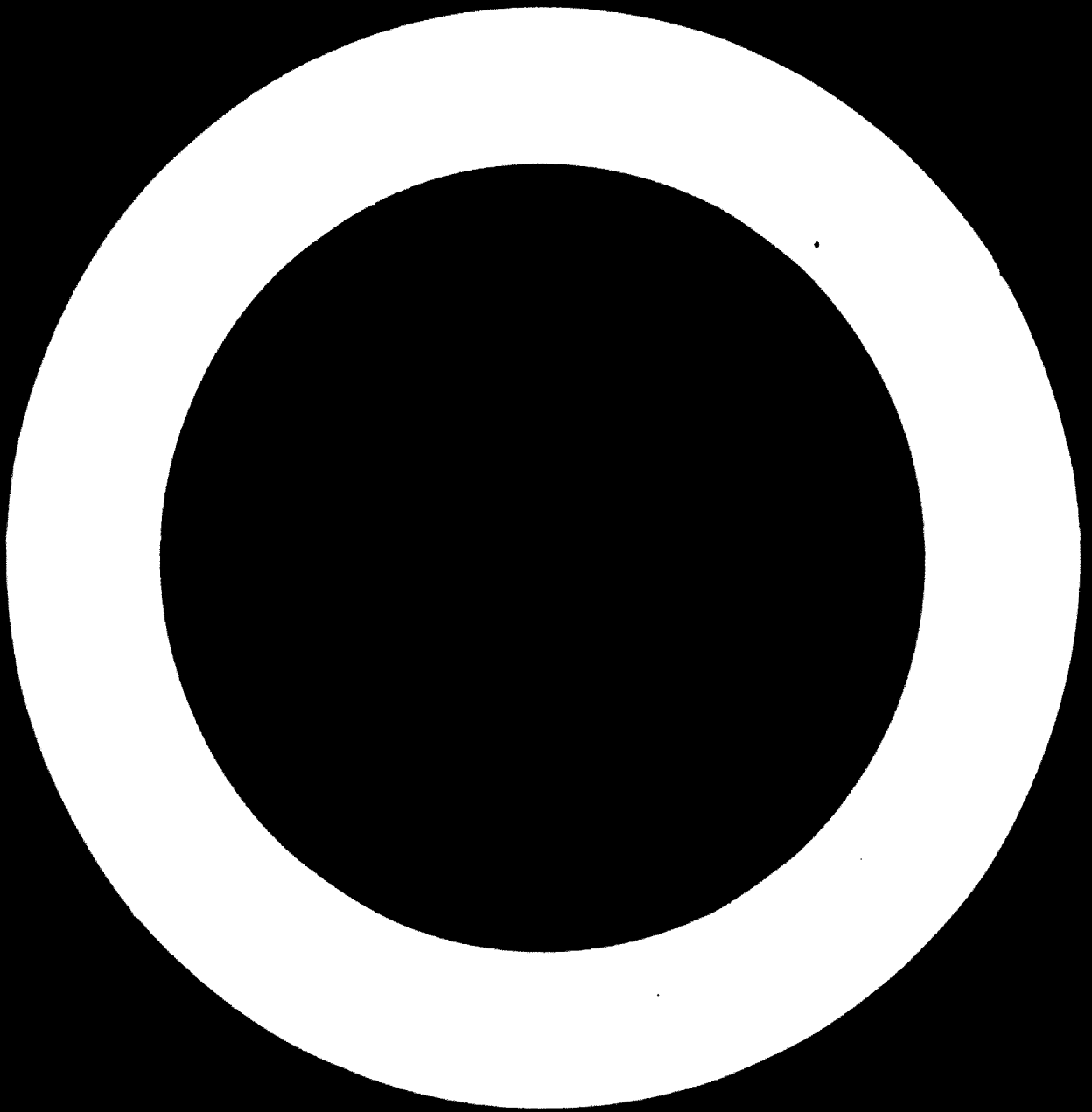
The project "Expert in the Manufacture of Cigars and Cigarillos" (IS/SRL/74/054) of the United Nations Development Programme (UNDP) in Sri Lanka was carried out by an expert from the United Nations Industrial Development Organization (UNIDO) which was the executing agency. The mission lasted three months, starting on 16 March 1976. UNDP contributed \$7,500 toward the project.

The Sri Lanka Tobacco Industries Corporation is mainly concerned with the manufacture of beedies (wrapper leaf) and other tobacco products. Tobacco cultivation and processing play an important role in the economy of the country and the corporation has been examining the possibility of producing cigars for export. If they could be exported instead of unmanufactured tobacco, the country would earn a larger amount of foreign exchange. However, it was felt that technical assistance is required to develop this industry.

The aims of the project were (a) to examine the technical and economic feasibility of manufacturing cigars and cigarillos of a quality suitable for export with a view to maximizing foreign exchange earnings; and (b) to formulate specific recommendations and a plan of action to be undertaken by the Sri Lanka Tobacco Industries Corporation.

However, the expert discovered that because of low quality, the existing production stands a very limited chance of success in any western export market. It was therefore decided that he should concentrate on (a) improving production to be competitive on the local market; and (b) training counterparts to judge tobacco lots and test smoke different types of tobaccos.

The expert recommends that a tobacco research institute be established and that fellowships be given for tobacco growing and manufacturing in such countries as Indonesia or Cuba where tobacco is grown successfully.



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INTRODUCTION

A tobacco expert was sent on mission to Sri Lanka after the Government of that country had requested assistance from the United Nations Development Programme (UNDP). The project "Expert in Manufacture of Cigars and Cigarillos" (IS/SRL/74/054) started on 16 March 1976 and ended on 15 June 1976. The United Nations Industrial Development Organization (UNIDO) was the executing agency. UNDP contributed \$7,500 toward the project.

The object of the mission was to study the technical and economic feasibility of manufacturing cigars and cigarillos of a quality suitable for export, and also to formulate specific recommendations and a plan of action to be undertaken by the Sri Lanka Tobacco Industries Corporation.

The existing production, because of low quality, has a very limited chance of success in any western export market. For that reason it was decided, at a meeting with the Minister of Food, Co-operatives and Small Industries, the Chairman of the Sri Lanka Tobacco Industries Corporation, the UNDP Programme Officer and the expert, that the expert should concentrate on improving production to be competitive in the local market. It was also decided that he should pay attention to the packing of raw tobacco but because of its great scarcity this was not possible to accomplish. Instead, the expert concentrated on the training of counterparts for judging existing tobacco lots and test-smoking different types of tobacco.

The expert recommends that a tobacco research institute be established and that fellowships be given for tobacco growing and manufacturing in such countries as Indonesia or Cuba where tobacco is grown successfully.

I. FINDINGS

All raw tobacco used in the factory is locally grown and the quality is low compared with internationally known cigar tobaccos.

All three parts of the cigar, wrapper, binder and filler, come from the same plant which gives limited possibilities for a well-balanced cigar.

The wrapper, i.e. the outer, visible leaf, is often rather coarse in texture, dark in colour and often has a poor burning power, leaving a dark to black ash. This is grade number 1.

The tobacco used for binders, i.e. the leaf that is rolled around the filler, is mostly a rather thin leaf but often broken. This grade, number 2, has a certain burning power. Both grades are variable.

The filler, which is the small pieces of tobacco inside the cigar, comes from grade number 3. This is the lowest grade and it is often variable. It consists mainly of leaves taken from high up (top leaves) and low down (sand leaves) on the plant, but it can also consist of suckers, i.e. leaves growing up after the stalk of the mother plant has been cut. This second crop seems to be improperly cured. All these types of filler are different in taste. Top leaves are often strong and aromatic, sand leaves are mild, have no aroma, but can sometimes be a little sharp in taste. The suckers have a somewhat sweet, often bitter or sharp taste which is not very agreeable.

As there is no systematic mixing of these three types, the result must necessarily be that the cigars vary in taste.

Some of the filler lots used contain bundles with a clear smell of earth or even mould which has a negative effect on the taste of sound tobacco when they are mixed.

Another fact that makes things difficult is the shortage of stock; no more tobacco is available than is sufficient for two to three months' production. This means that the tobacco is far too young to be used as the taste qualities have had no time to develop and improve.

With these facts in mind it is not difficult to understand why the cigars vary, and are often deficient in taste, as they are.

With regard to manufacturing, this is probably the most primitive way there is of making a cigar. Production in general consists of preparing the tobacco and rolling the cigar.

The usual procedure for machine-made cigars is that the filler is thrashed into pieces and the stem removed. The filler for handmade cigars is hand-stripped, i.e. the thicker part of the stem is removed and the halves of the leaves remain complete. To do this it is necessary to first moisten the leaves, remove the stem in one way or another, and then dry the pieces, or the halves. Wrappers are moistened and the stem is removed, binders are moistened and then hooked; both of them remain moistened. The rolling can be done either by machine or by hand.

In the corporation's factory these operations have been simplified to the utmost. The filler tobacco is left in the sun until it is completely dry and then passed through wire sieves fitted into wooden frames. The pieces go through, but the stems remain in the frame. This procedure is done a couple of times until the stems are clean. The crushed filler is afterwards sifted so that the really small pieces and the dust are separated. In spite of this sifting the size of the part that is going to be used is too small, has lost its filling capacity and will produce a compact cigar without good draught. But, beside that, a lot of tobacco has been wasted as the value of the really small pieces is very low, and the value of the dust, none. To estimate the loss is difficult as a lot of dust blows away and the percentage of moisture in the tobacco changes.

The preparation of wrappers and binders is also very primitive. The cigar-makers moisten the leaves themselves in the afternoon and then leave them covered until the following day. The wrappers are stripped, stretched and rolled in big rolls. The binders are prepared gradually while the cigars are being made.

The cigar-making itself is really something extraordinary to watch. The cigar-maker sits cross-legged on a mat on the floor with the necessary tobacco around him. He tears off a piece of binder, takes a pinch of filler and rolls the bunch. He then rolls this in the wrapper, which he has cut out previously, glues the cigar, rolls it between two small wooden blocks and it is ready. It goes extremely fast. He needs less than a minute per cigar. With

that speed it is impossible to make good and even cigars, especially considering that the materials being used are difficult to handle, i.e. thick and coarse wrappers, broken binders and filler that is too short and too flat.

The two most striking things in the procedure are that the cigars are rolled free hand with no help of a firm support, and that the bunches have no time to dry in some kind of mould to get firm before over-rolling the wrapper.

The cigars are then sorted into two colours and packed, without previous pressing, into wooden boxes containing 100 each. To press the cigars directly in the box is possible but they get very "multi-cornered" and not so nice to look at. While the cigars are being packed, each layer is brushed with vanilla essence to improve the aroma and taste. The essence now used unfortunately seems to disappear very quickly, so something better has to be found.

After being dried in an oven for over 24 hours, the cigars are dispatched to storage.

II. CONCLUSIONS AND RECOMMENDATIONS

A. Raw tobacco

To make a good cigar the first thing needed is good tobacco for which are necessary the proper soil and climate, a few good strains of tobacco and good farmers. That is a lot to ask, but it is not enough. Also needed are good packers, tobacco experts and employees, both workers and management. But a good cigar is useless if it cannot be sold, so there must be a good selling organization.

As it is the wish to achieve all of this locally, it will be necessary to start from the beginning with research and training and, not least, enthusiasm.

It is too risky to import raw tobacco, machinery and other necessary items, including know-how, and go into an unsure export market against well-established competitors, especially as cigar smoking is somewhat on the wane in many countries. However, there will always be a demand for good tobacco, and cigar, or air-cured, tobacco is much more used in cigarettes than in cigars.

A tobacco research institute should be established at the corporation's farm in Kantalai. The institute must be provided with skilled people, such as experts in crossing, fertilizing, irrigation and so on. Such institutes have existed in Indonesia or Cuba for a long time and their organization could be studied in those countries.

An immediate problem is to improve the burning power of the tobacco. One way to do this is to collect soil and tobacco samples from different growing areas, and to compare the analyses of the soil with the burning power of the corresponding tobacco sample. Tobacco should not be grown in, or bought from, bad areas, and the analyses should be studied and fertilizing programmes made up that can improve the burning. As it is today, a lot of cigars are thrown away because they do not burn and that is a waste of tobacco, acreage and labour.

Trials must also be done with other types of tobacco. It is too optimistic to believe that a good cigar can be made out of leaves from the same plant. There are certain requirements for wrappers, binders and filler.

Wrappers should be thin, elastic leaves with good texture and a light greyish or light brownish colour. Binders should be about the same, but they can be somewhat thicker and the colour has, of course, less importance. It should nevertheless be even to guarantee an even taste. Filler tobacco should have spring so that it gives cigars a good draught.

Trials should be made with both wrappers and filler. Wrapper can be grown with seeds from Sumatra and Besuki in Indonesia; Italy; Vuelta Abajo in Cuba; Connecticut and Florida in the United States; or Cameroon. Filler can be grown with seeds from Bahia in Brazil and Remedios in Cuba; Isabella seeds from the Philippines; Carmen seeds from Colombia; or Criollo seeds from Santa Domingo. It is nearly impossible without research to say which variety will have the best chances. It is also difficult to say from where seeds can be provided.

Wrapper should grow in shade, either under a cloudy sky or under cheese-cloth. Since wrapper growing is difficult and expensive, a small-scale project based on local needs would be best to start with. Owing to high labour costs, many cigar manufacturers go over to homogenized wrappers.

In starting to grow a pure filler crop, both the chances of getting good results and the possibilities for export are much better. Moreover, filler is easier to grow and harvest.

To develop new tobaccos in new countries for introduction on the world market is a difficult job. It takes time before the product is accepted and recognized, and it could happen that by the time there are good results, after some years, the demand on the world market may be much less than today. Probably the safest course is to link up in some kind of joint venture with internationally-known leaf-tobacco companies with experience in growing, packing and marketing. They know the demand for different tobaccos, the prices and, maybe most importantly, they are trusted by their customers and have the channels to reach them. That will, of course, reduce the profit, but on the other hand it will be someone to share the risk with, and to help finance the project which is very important at the beginning.

It is difficult to say whether such a joint venture should start that way or wait a couple of years and try to make it alone. The better the tobacco is when the negotiations start, the better the deal will be. It is also a question of how difficult it will be to get seeds; the leaf companies of course, have seeds available. Some good companies are: A. L. van Beek BV Holland, Koch Scheltema BV Holland, Lancotab NV Belgium, Leafco A/S Denmark, and Tabak Export and Import Compagnie BV Holland. But there are many others.

Since these experiments will take a few years before any results are obtained, something must be done with the existing tobacco. Farmers must be

instructed to handle the tobacco with more care when fertilizing, topping etc. They must harvest at the proper time and cure the tobacco sheltered from the sun and rain. They must keep the different primings (leaf positions on the stalk) apart and pack them in a sound condition. Better care with the ratoon (second crop) will also increase quantity and quality; only one suoker should be left.

A packing facility should be established where the tobacco is fermented, graded or cleaned and baled in safe condition. Such a packing facility could be either attached to the cigar factory or in Kantalai.

As it is now, the tobacco is used too fresh and the factory has no stock. The shortage is due to too many small crops in succession and that could happen again. However, there should be stock to last preferably two but, at least, for one year. Also there is an advantage to be gained over competitors by being stocked up with well-matured tobacco. Having stock in good condition requires good marking of different lots, good book-keeping and a regular inspection of the tobacco so that nothing gets spoilt by mould or insects.

A very important part of cigar production is the buying of new tobacco and this has to be done with the greatest care. Normally the buyer is not directly responsible for the quality of production, so he has to do the buying in close co-operation with the men who are, usually the factory manager and the leafman. The leafman very often participates in the buying when large quantities are available, but when, as in this case, the buyer buys small quantities directly from the farmers, the leafman has to inspect all the tobacco that arrives at the factory, bale by bale, or if necessary, bundle by bundle. The leafman should have the right to refuse or reclassify all the tobacco that does not fulfil his requirements of quality or condition. The buyer, on the other hand, should not be bound to fixed prices. He should, within certain limits, be free to bid and compete with buyers from other companies. If not, he will never get enough good tobacco to deliver to the factory. Any buyer makes mistakes now and then but these mistakes can usually be corrected if they are discovered in time.

B. Manufacturing

To improve the manufacturing is not possible without increasing costs. The present method is the cheapest but to increase the quality of the cigars it may be worth investing some money.

Filler preparation

It is proposed to cut the filler instead of crushing it. Cut filler is used in cigarette manufacturing and looks like normal shag pipe tobacco. To cut the filler is a mechanical procedure, i.e. a cutting machine is needed. Positive trials have been done with the help of the Ceylon Tobacco Company. The advantages seem to be several. First, very little is lost in the form of dust. Second, the stems can be used provided they are not too thick. The saving of tobacco will not be below 25% as that is a flat figure for the part of stems used in tobacco in general.

It is also most likely that the draught and the combustibility of the cigars will improve. According to the cigar-makers, who tried cut filler, it was easier to handle than crushed filler.

The tobacco has to be moistened before cutting but that is a simple procedure and can be done by hand. The best way would be to spray water over a heap of loose leaves and turn the heap over and over until all the leaves are evenly moistened. The moistened tobacco should be left overnight and cut the following morning.

After cutting, the tobacco should be loosened up and carefully dried to avoid breakage. Then, if possible, packed into plastic bags so that the right moisture content can be kept. The distribution to cigar-makers should be done in reasonable portions to avoid drying.

From the Ceylon Tobacco Company it was learnt that a number of 16 in. Leggs cutters stood idle at Lethenty Estate, Hatton, which is owned by the State Plantation Corporation. The chairman of the Tobacco Corporation and the expert inspected the machines and, unfortunately, they are not in the best shape but, as there are eight or nine of them, it is most probable that one could be fixed up to an acceptable standard. For that reason the management of the estate was asked to repair one machine so that tobacco could be taken up there and further trials made before any decision is taken. This cutter has a capacity that far exceeds the present needs of the cigar factory. However, that has no importance as the machine will never be used again by the estate and it cannot be sold. Spare parts should, it was reported, be available in Colombo from Gordon Frazer and Company.

To improve the filler by buying a threshing machine is unrealistic since the smallest and cheapest has a capacity of between 650-1,200 lb/hour and will cost about \$US 37,000. The factory presently requires less than 100 lb/day of filler. Even hand-stripping will be too expensive for a little cigarillo, but has to be considered for bigger cigars.

Wrapper and binder preparation

To change the wrapper and binder preparation will have little point unless it will be difficult to recruit more cigar-makers for increased production. The work has to be paid for, wherever it is done, and costs will probably be the same whether it is separated from the cigar-making or not. One advantage, of course, will be a higher production per cigar-maker but the work will be more monotonous. As it is today, the worker has a little bit of a variety.

Cigar-making

This is the most difficult part. One cigar machine, double bunch (two cigars at a time), can make about 13,000 cigars/day. That is roughly what is presently being produced. Such a machine is operated by two workers and would cost about \$US 70,000 which is unrealistic.

The factory's problems with the cigars they manufacture, if we forget about burning and taste, are that they are uneven in shape, often have bad draught and are without finish.

The shape. It is impossible to expect that 45 self-taught cigar-makers, without any kind of gauge, could be able to make cigars of the same shape. The usual way is to use a wooden mould consisting of two halves in between which the shape of the cigar is carved out. Such a mould contains space for twenty bunches. When the bottom part has been filled, the top part is put on and the bunches remain in the mould for a while under pressure. The longer the better. The bunches have to be turned 90 degrees once in the middle of the pressing time to avoid too marked pressing edges. It is difficult to say how many moulds each cigar-maker should have but it is from 5 to 10. After the bunches are steadied, they are over-rolled in the normal way. Such a mould has been brought to the cigar factory and samples made with good results.

If the corporation intends to launch a big, exclusive cigar on a small-scale to be sold, for instance, in the better hotels in Colombo, such a mould must be used. The tobacco must, in such a case, be carefully selected. The expert suggests that long filler be used for this purpose.

Another, more simple, way is to use a wooden frame with holes and pieces of steady papers all of the same size. The bunch is made and rolled into the paper, the width of the paper guides the length of the bunch, and the diameter of the hole - where the paper over-rolled bunch has to be put in - guides the diameter of the bunch. This technique has been demonstrated in the cigar factory and it gives a certain improvement, but it is not to be compared with wooden moulds.

One simple and cheap way to achieve better uniformity of the cigars, is to let the best cigar-maker teach the others for a certain time, i.e. half a day or so. He can correct their mistakes and teach them his methods.

The draught. The draught is a serious problem. A check one day of 50 cigars, taken at random from the cigar-makers, showed that 50% of them were made too tight with insufficient draught. Also, the differences in weight and diameter were rather large. A quality control was started which apparently did not previously exist. Once a day, or if possible twice a day, the quality controller should take 50 cigars at random from all the cigar-makers, weigh them, check the diameter in the gauge and check the draught. There are instruments for checking the draught but the simplest way is to put the fire end in the mouth and draw. The results of the control should be noted down on a card by the controller. If possible, there should be one card for each cigar-maker.

If the values exceed the tolerances which have been fixed by the management, or if the draught is insufficient, the cigar-maker should be told immediately by the controller to correct his work. It will probably not take long before the cigar-maker himself will get interested and see that his cigars are up to standard. It has to be understood that weight is a guidance and must not be an end in itself. It is a fact that the cigars will be heavier on a humid day than on a dry day, for tobacco is hygroscopic. It is always up to the controller to exercise his judgement.

In this connexion, it should be mentioned that trying to avoid too tight cigars will involve a risk of getting some too loose and that is not good either.

The smoke will be warmer, the taste may be sharper, the ash pillar not so firm, and the cigar will get somewhat soft when it is smoked. However, the softness can be avoided by extending the drying time and the other changes are negligible compared with the advantage of diminishing the number of dense cigars.

Drying

It is better to have the cigars more on the dry side than the damp, especially in this humid climate.

Sorting

Sorting is done in two colours. The cigars in the top layer are carefully selected and most of them are sold by piece. Preferably the most unattractive cigars should be rejected and destroyed.

Packing

The finish of the cigars will be improved if each layer is pressed individually. A simple device for better pressing has been provided; it is a bit awkward to use for boxes of 100 but very useful for packages of 10. Pressing blocks for 100 can be made. They will probably be expensive but may be worth-while.

According to the marketing service of the corporation the Sri Lanka cigar smokers are very particular about the smell of the cigar. The way the flavour is added today seems to be inadequate. To achieve a good result, the flavour has to be sprayed on the filler. Since most of the traditional flavours are not available in the country, no trials to spray the filler have been made so far. However, samples have now arrived so product development will take place soon. Formulae and instructions will be given.

There are also certain chemicals for improving the combustibility of tobacco. Unfortunately they have not been obtained. These chemicals, however, are a bit difficult to apply to the tobacco and they will always affect the taste.

The wooden boxes used for packing lack finish. They are manufactured according to specifications, by outside contractors. When they arrive at the factory they should be subject to quality control and defective boxes rejected. The decoration work, with paper stripes and labels, could be done a bit more neatly to give a better presentation. The boxes should not be used more than once because when they come back from the retailer they always look a bit soiled and are not so attractive.

Overseas fellowships

To implement the recommendations made in this report a few persons must be trained abroad. The expert suggests two fellowships for tobacco growing and one for manufacturing. As Indonesia and Cuba are countries where tobacco has been grown for many years with great success, these countries would be the most suitable.

In Cuba, pure filler growing can be studied in the Remedios area and filler, binder and wrapper growing in the Vuelta Abajo area.

In Indonesia, wrapper growing can be studied near the city of Medan in Sumatra, or filler, binder and wrapper growing in the Besuki area in Djava. Both the tobacco fellowships must last at least one year, maybe a couple of months more, to enable a complete study from seed beds to ready-made bales. The proper time of arrival in the different countries has to be studied carefully, but as a guide, the planting season in Sumatra starts late December and in Cuba, late October.

These two fellowships should be arranged as soon as possible, so that no time is lost. A recipient of such a fellowship should have a sound agricultural background and of course a solid knowledge of cigar tobacco growing in the Galewela area in Sri Lanka. He must not be a desk-worker but a man who can dedicate himself to rather dusty work and is used to certain hardships. Before his departure he should be trained in a cigar factory to learn a cigar manufacturer's requirements for raw tobacco, and that he can roll a cigar while test smoking is an absolute necessity.

The third fellowship should be connected with cigar manufacturing and be in a country where cigars are still made by hand. It is difficult to say whether the Philippines or Cuba would be better. Both countries have much to offer, but perhaps Cuba has a slight advantage.

The recipient should have a good technical background and good administrative ability. He should be well aware of the problems of the local cigar industry. He should know how to roll a cigar and be a good test smoker. He should also have proved that he can implement tasks and show initiative. This fellowship can be arranged at any time and should last for about half a year.

These three fellowships, particularly the first two, deserve further assistance. It may help the country to remain self-sufficient in tobacco, improve it, and even give an opportunity to export it. The third fellowship is important in that when good tobacco is available, the manufacturing side should be prepared to act and not remain at a cottage-industry level. There will always be an export market for exclusive handmade cigars but the prerequisite is that they should be made from good quality tobacco.

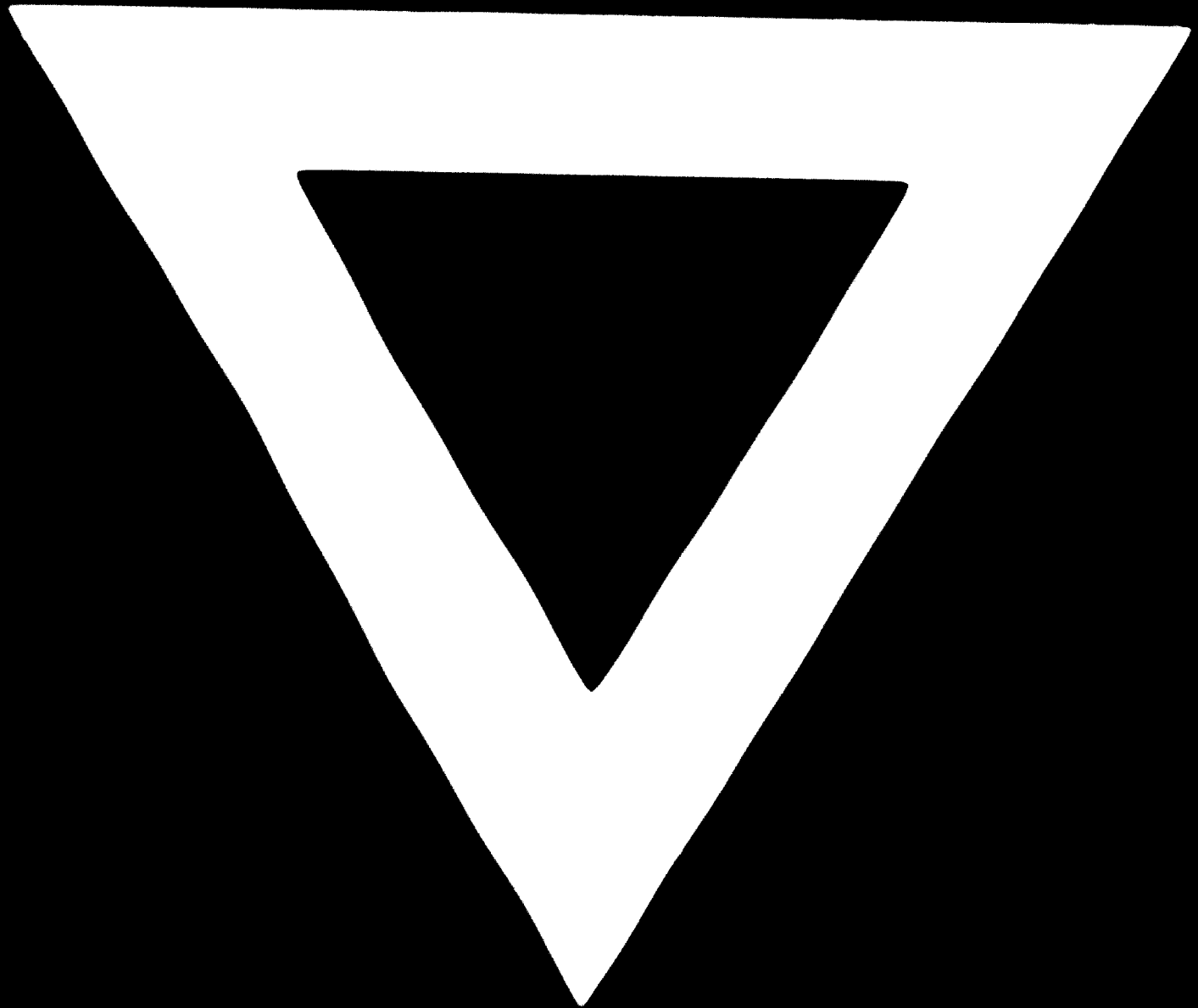
Tobacco research institute

The necessity of establishing a tobacco research institute has been mentioned. This is an urgent matter and the expert suggests that the question be discussed on a governmental level and that a committee be appointed to analyse different approaches.

Several criticisms have been made in this report but it should be stressed that similar conditions exist in other cigar factories of the private sector and it should not be forgotten that the corporation has only been in the cigar business for two years. To provide a background, the expert recommends the following publications: The Cheroot and Cigar Industry in Ceylon, United Nations Technical Assistance Programme, New York, 1954, and the Report of the Commission to Inquire into the Tobacco Products Industry in Ceylon, 1955. Both these are of current interest.



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