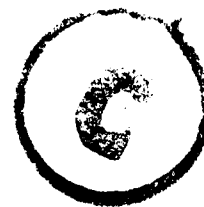


92

Indian Tobacco

Apr-June 1955



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Office building and barns of the Kateru farm of the Central Tobacco Research Institute, Rajahmundry

INDIAN TOBACCO

QUARTERLY

Vol. V, No. 2

APR.-JUNE 1955



PUBLISHED BY

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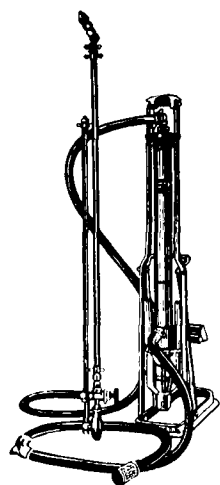
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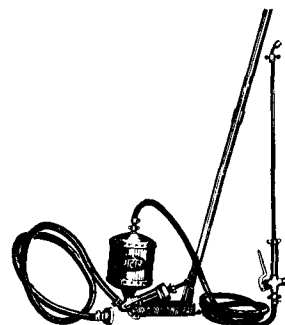
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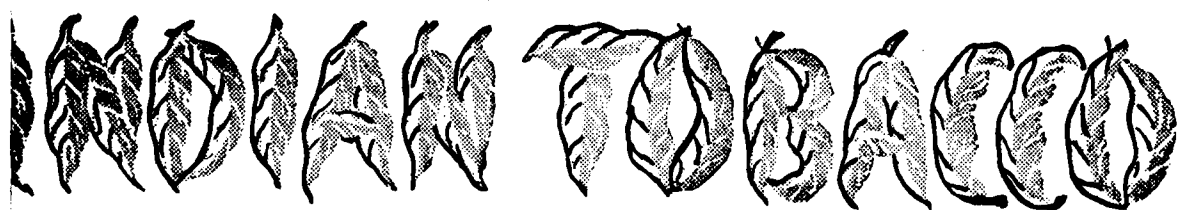
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BY THE
INDIAN CENTRAL TOBACCO COMMITTEE

Vol. V

APRIL — JUNE 1955

No. 2

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Seventeenth Meeting of the Indian Central Tobacco Committee

By

M. S. PATEL*

The Eleventh Annual Meeting and Seventeenth Ordinary Meeting of the Indian Central Tobacco Committee was held in Madras on 30th June 1955 with Sri K. R. Damle, I. C. S., Additional Secretary in the Union Ministry of Food & Agriculture and President of the Committee, in the chair. Among those present were Sri K. Raghuramaiah, M. P., Vice-President of the Committee, Sri B. N. Bannerjee, Member, Central Board of Revenue, Sri I. J. Naidu, I. A. S., Director of Agriculture, Andhra, Sri K. Rangaswami, Deputy

Chief Controller of Imports & Exports, Madras, representatives of the Union Ministry of Finance & State Departments of Agriculture, prominent tobacco growers and traders.

Following is the text of the President's opening speech delivered on the occasion:—

"It gives me great pleasure to welcome you to this 11th Annual Meeting and the 17th Ordinary Meeting of the Committee. We are also holding a special meeting



*Sri K. R. Damle, I.C.S. the President of the Committee delivering his opening address.
Dr. M. S. Patel, the Secretary is on his right.*

* Dr. M. S. Patel, m.sc., ph.D. (N. Carolina), Secretary, Indian Central Tobacco Committee.

to-day to consider certain amendments to the Committee's Rules and Regulations.

"At the last meeting we recommended to Government certain additions and deletions in the membership of this Committee and pressed for increased representation to the growers. These recommendations were accepted by Government in their Resolution dated 22nd January, 1955. As a result of these amendments and on account of the retirement and resignation of some members, we have among us several new members. I extend on behalf of this Committee a cordial welcome to them.

"Dr. N. R. Bhat who was Cotton Botanist in Bombay, has taken over as the Director of the Tobacco Research Institute maintained by this Committee. Dr. Bhat is not new to us. He was a member of this Committee and represented the Bombay State.

"This Annual Meeting has had to be held earlier than usual. The budget estimates for 1956-57 and the Annual Report for 1954-55 have therefore been prepared on the basis of the data available to us at this time. In future we shall hold the annual meeting a little later than June so that the data available to us are much more comprehensive for the preparation of the budget estimates.

"The position of Indian tobacco production and marketing since we met last has improved. There was a slight decrease in the area under tobacco in India during the year 1954-55. It is estimated at 0.84 million acres as against 0.87 million

acres in the year 1953-54. The average annual production of about 550 million pounds, is however not expected to fall. The exports of tobacco by sea and air registered an increase to 76.4 million pounds in 1954-55. There was a slight increase in the imports of manufactured and unmanufactured tobacco in 1954-55. 2.6 million pounds of this tobacco were imported in the year 1954-55 as against 2.1 million pounds in the previous year.

"The Government of India have intensified their efforts for the promotion of Indian tobacco export. There are now three officers for tobacco export promotion work in foreign countries. One is stationed in the United Kingdom, another is in Antwerp and the third in Hongkong. The large stocks of flue-cured Virginia tobacco which had accumulated in the country and which caused great distress have practically been cleared and it is possible that in the coming season there may be larger demand for Indian tobacco from foreign countries than we may be able to meet. The position in regard to beedi tobacco, however, is not so favourable. Large stocks continue to be with growers and traders. The market for this tobacco outside the country is inconsiderable and remedies other than those which have helped us in the disposal of the accumulated stocks of flue-cured Virginia tobacco will have to be found. This matter is engaging the attention of the Government and some time back the Govt. of India announced a reduction in the excise duty on the accumulated stocks of 1953. The position will be watched and brought to the notice of Government from time to time.

"The Central Tobacco Research Institute at Rajahmundry now has its own farm buildings. The Union Minister for Agriculture laid the foundation stone of the laboratory building in January last and we hope that before the current financial year ends, it will be possible to move into the new laboratory building. Plans and preliminary estimates are being prepared by the Central Public Works Department for the construction of farm and laboratory buildings at our Pusa and Dinahata Research Stations and it is hoped that soon these stations will also have suitable buildings of their own.

"At our last meeting an *ad hoc* Sub-Committee was appointed to conduct a detailed audit of the achievements of research at our Research Stations and Institute. The report of the Sub-Committee is one of the items on the agenda of to-day's meeting. I am glad to note that the Sub-Committee has found that during the few years that our Research Stations have been in existence, they have produced results of economic importance to the cultivators. Among these may be mentioned (1) the evolution of an improved method of quicker flue-curing of Virginia cigarette tobacco in a barn with improved ventilation resulting in an additional income of above Rs. 60/- per acre. (2) the evolution of a new strain of Lanka tobacco, mostly used for cheroot, giving about 49 per cent higher yield than the local strain, (3) the determination of the optimum level of topping *Natu* (country) cigarette tobacco, giving an additional income of Rs. 100/- per acre, and (4) the evolution of two improved strains of hookah tobacco which are heavy yielders. There are others

which have been listed in the report of the Sub-Committee. It is now necessary to carry these results of research for wide adoption by the growers. Recommendations on this subject are also for your consideration to-day. 94

"Among the activities undertaken by the Research Stations were demonstrations on farmers' fields of improved methods of tobacco production including flue-curing and pest and disease control, training in the improved methods of tobacco culture without any charge, distribution of pure seeds and seedlings, distribution of leaflets explaining the improved techniques on the various aspects of tobacco production, holding of farmers' weeks etc., We have also taken advantage of the Community Projects near our Research Stations for the dissemination of information for the benefit of growers. With the increased facilities proposed to be provided under the Tobacco Development Plan, the present activities will be considerably enhanced. It is also proposed to supply pure seed to the growers in sufficient quantities.

"The Committee had sanctioned the holding of Tobacco Crop Contests in order to encourage tobacco cultivators in the adoption of improved methods of tobacco production. A contest for flue-cured tobacco was held at two centres in Andhra during the last season and the results of the contest are placed before you for your information. Realising the importance and the imperative need for improving the quality of flue-cured tobacco produced in the country, the Central Government have sanctioned a scheme of Tobacco Extension

Service for the Guntur District of Andhra State in consultation with the Andhra Government. The scheme is initially for a period of two years. We hope that as a result of this effort there will be a real improvement in the quality of Virginia tobacco produced in this district and that we shall not again be faced with the problem of disposal of large quantities of low grade tobacco.

"The Publication and Publicity Section of the Committee has been publishing popular pamphlets in regional languages for free distribution to the growers. Recently we published a Telugu leaflet on the methods of curing. Two leaflets in Hindi on the control of pests and diseases and a leaflet in Tamil on the cultivation of cheroot and chewing tobacco are at present in the Press. Our quarterly and monthly journals continue to give authentic reference figures on Indian tobacco. The Committee has also brought out a statistical monograph on tobacco trade in India. This gives a review of tobacco export and import trade during the fifteen years from 1940 to 1954. Another publication brought out by the Committee with the co-operation of the Central Board of Revenue and the State Governments who helped us in the supply of bulk of the basic material, is a comprehensive Tobacco Directory which has been published only this morning. We thank the Central Board of Revenue and the State Governments for the assistance and hope that the Directory, though not as exhaustive as it could have been, will continue to be of real assistance to everyone engaged in tobacco cultivation and trade.

"Before I conclude I wish to thank the members of the various Sub-Committees who have lightened our task this morning by giving detailed consideration to the various items on the agenda which had been remitted to them for scrutiny during the Sub-Committee meeting."

The decisions of the Committee made at this meeting are given in outline below:-

Among the several research schemes sanctioned by the Committee were the schemes for classification of flue-cured virginia tobacco lands into saline and non-saline areas, scheme for preliminary investigations on cigarette tobacco beetles and control measures thereof in storage, trials of bidi and hookah tobaccos in Bhopal, a scheme for exploring the possibilities of growing cigarette tobacco in W. Bengal and the extension of the bidi tobacco research sub-station in Nipani, Bombay State.

Several developmental & extension schemes of importance to growers were also sanctioned by the Committee. Among these were a scheme for the propagation and wide adoption of the improved methods of tobacco cultivation by bidi tobacco growers in Gujarat, scheme for short training course in tobacco curing at Rajahmundry & Guntur, and for conducting comparative trials of farm vs. farmers' methods of cultivation in the fields of tobacco growers in Bihar and provision of irrigation facilities at the Research farms at the Committee's Institute at Rajahmundry and the Research Station at Guntur.

The Tobacco Crop Contest held in last season in Andhra will be continued this year and the contest will also be held in Mysore & Bombay. The Committee heard Sri M. A. Parikh, its former Vice-President who explained in detail with practical instances, the difficulties caused to the bidi tobacco trade by the assessment of excise duty on bidi tobacco at different localities on the basis of the extent of its actual use in bidi making. As the formation of an enquiry committee in pursuance of the Taxation Enquiry Commission's recommendation was under active consideration of the Government of India, the member was asked to prepare a case and submit it to the Central Board of Revenue for consideration by the proposed enquiry committee.

The Committee also discussed at length the necessity for an enquiry into the tobacco marketing conditions in India and decided that the necessary data and up-to-date information on the subject might be collected and a revised edition of the Tobacco Marketing Report published by the Central Agricultural Marketing Adviser within the next six months and thereafter if necessary an enquiry committee would be appointed to go into the question. The Committee also decided to request the

State Governments to provide regulated markets in the states where such markets did not exist. The Committee decided to meet 50% of the recurring expenditure for the development of tobacco cooperative societies in Mysore and also agreed to consider on this basis tobacco cooperative schemes for implementation in the current season, if submitted by the State Governments within one month.

The difficulties experienced in the timely procurement of coal for flue-curing and redrying tobacco due to shortage of wagons etc. were also discussed and it was decided to bring to the notice of the Central and State Governments, the difficulties.

A conference of tobacco research workers to discuss the tobacco growing problems was decided to be held once in 3 years. The Committee also approved the technical programme of work for the next season at its various Research Stations. At its annual meeting held on the same day, the Committee's administration report for 1954-55 and its Budget for 1956-57 were discussed and adopted. At the meeting, a comprehensive Tobacco Directory containing names of tobacco peelers, exporters etc. published by the Committee was released.

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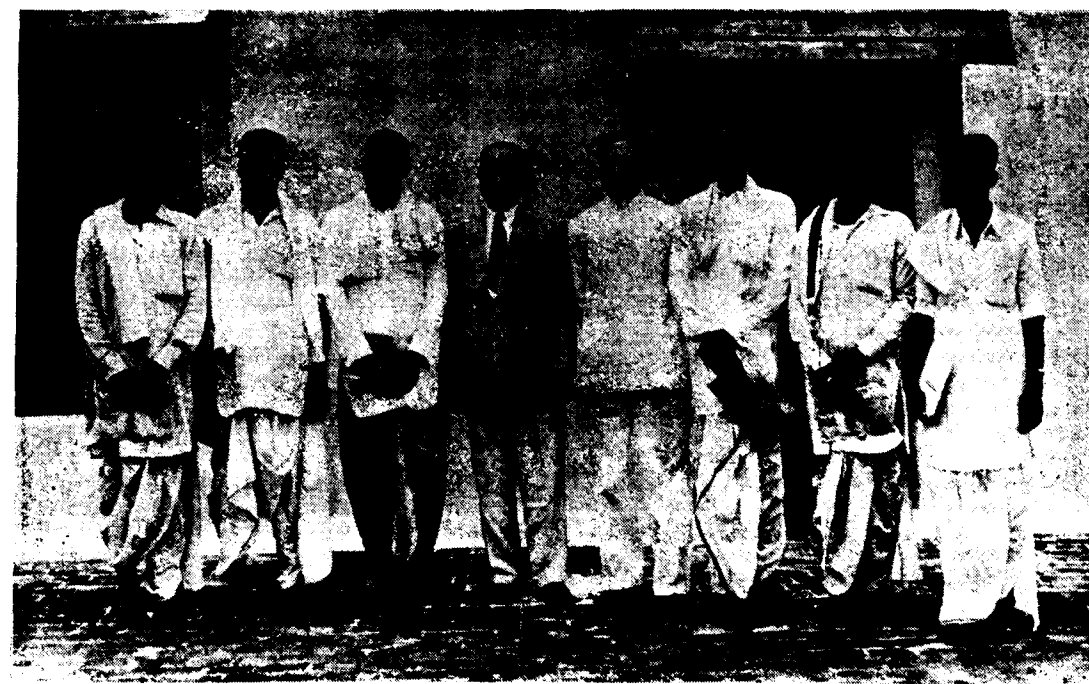
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Tobacco Crop Contest

In order to enthuse tobacco cultivators to adopt improved methods of production with a view to improve both the quality and the yield per acre, the Committee at its meeting held in December 1953 decided that the Scheme of Tobacco Crop Contests should be held annually in the concentrated zones of tobacco production. To start with, the Committee decided to hold the contests at 6 centres viz. East Godavari, West Godavari and Guntur Districts of Andhra State, Mysore State and Charotar & Nipani tracts of Bombay State. The items for contests should be (1) for the production of the best crop and (2) for the best flue-curing, with 3 prizes for the production of the best crop and 2 for the best flue-curing. The best crop under

competition should be appraised by a panel of judges comprising of an official of the Central Exoise Department, a local grower, a trader, a member, an officer of the Indian Central Tobacco Committee and the local District Agricultural Officer or his representative, and three will form the quorum, which should comprise of the Director, Tobacco Research, the concerned District Agricultural Officer and a grower of that area.

The competitions were held in 1954-55 season in Andhra State at 2 centers viz. Kakinada (E. Godavari Dist.) and Eluru (W. Godavari Dist.). At Eluru, both the contest viz. for the best crop and for the best curing were held, while at Kaki-



Winners of the Tobacco Crop Contest, with Sri K. R. Damle I.C.S., the President of the Committee (4th from right) and Dr. M. S. Patel, the Secretary of the Committee (4th from left)

Tobacco crop Contest

nada only the contest for the best crop could be held. No contest could be held at Guntur for want of minimum number of competitors prescribed under the Rules.

On 30th June, 1955, after the conclusion of the seventeenth meeting of the Indian Central Tobacco Committee at Madras, Sri K. R. Damle, I. C. S., Additional Secretary to the Government of India in the Ministry of Food & Agriculture and President of the Committee distributed cash prizes to the winners of a crop contest held by the Committee in Andhra for best cigarette tobacco crop and for best flue-curing.

The winners of the best crop in Kakinada were Sri M. Veeranna (1st Prize), Sri V. Venkata Raju (2nd Prize) and Sri M. V. L. Narasimha Rao (3rd Prize) and

in Eluru were Sri V. Ganganna (1st Prize), Sri I. Venkanna (2nd Prize), and Sri G. Ramanna (3rd Prize). For best curing, in Eluru, the prize winners were Sri U. Yagnanna (1st Prize) and Sri A. Satyanarayana (2nd Prize). The 1st, 2nd and 3rd prizes for the best crop are Rs. 1,000/- Rs. 500/- and Rs. 250/- respectively and for the best curing, 1st and 2nd prizes are Rs. 500/- and Rs. 250/- respectively.

After the prize distribution ceremony, a group photo of the prize winners was taken with Shri. K. R. Damle, President of the Committee and Dr. M. S. Patel, the Secretary.

The Committee has decided to continue the contest for this season also in all the above-mentioned centres including Krishna District in Andhra.

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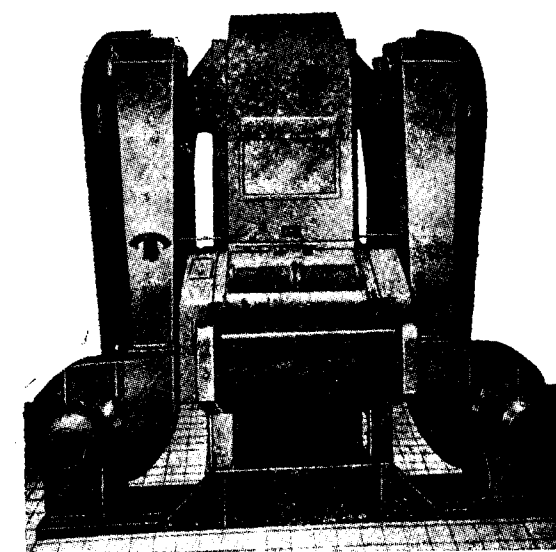
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Tobacco Production and Industry in India

By

M. S. Patel*

The original home of tobacco is believed to be America. Since its discovery by the Spaniards in 1492, it was brought to Europe by the Spaniards and the Portuguese and then on to other parts of the world. It was brought to our shores in 1605 by the Portuguese. Now tobacco is grown in many parts of the world.

The world tobacco production is estimated at about 7,500 million lbs. from 8.9 million acres. In India, the area under tobacco is estimated at 0.89 million acres producing about 571 million lbs. i.e. 10% and 7% of the World total tobacco acreage and production respectively.

Estimated tobacco acreage and production in important tobacco producing countries in the world are :

1953		
Country.	Acreage (000)	Production (Mill. lbs.)
U. S. A.	1,631	2,055
China	1,400	1,300
India	895	540
Turkey	400	260
Pakistan	174	165
Canada	101	139
S. Rhodesia	180	106
Nyasaland	167	33
Yugoslavia	84	72

Source: Plantation crops and Foreign Agricultural Circular.

From the above, it will be clear that India is one of the principal tobacco producing countries of the world, being third after the U.S.A. and China.

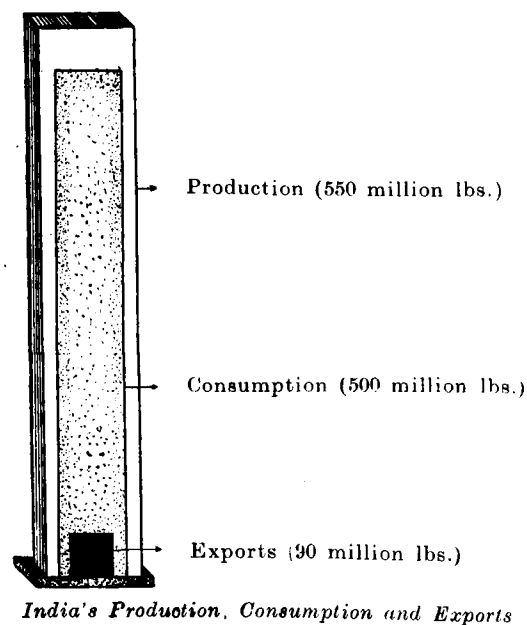
Role of tobacco in Indian economy :

The role of tobacco in the country's economy is of multifold importance. Agriculturally, it brings to the Indian grower an annual return of about Rs. 32.7 crores; commercially, it fetches for the country foreign currency to the tune of about Rs. 16 crores; and by way of excise duty, it enriches the National exchequer by about Rs. 34 crores annually. In addition, an annual income of about Rs. 6 lakhs is derived from it by way of agricultural cess.

The capacity of tobacco to add more revenues to the Indian Exchequer is rather quite elastic. In 1948-49, excise revenue was Rs. 25. 0 crores and the total value of exported tobacco was Rs. 12. 2 crores, but in 1953-54 it was Rs. 32. 7 crores and Rs. 12. 3 crores respectively.

Besides, tobacco provides means of livelihood to hundreds of thousands of persons who are working in its various industries, namely, cigarette, cigar and cheroot, bidi, snuff, chewing and hookah manufactories. In addition, several thousands of families depend entirely on tobacco cultivation for their livelihood.

* Dr. M. S. Patel, M.Sc., Ph.D. (N. Carolina), Secretary, Indian Central Tobacco Committee.

**Production and utilisation :**

The Indian tobacco acreage and production for the last five years are given below :

Year.	Acreage (000 acres)	Production (Million lbs.)
1948-49	803	571
1949-50	860	591
1950-51	902	589
1951-52	712	459
1952-53	895	538
1953-54	890	571

Andhra State is by far the most important tobacco producing centre as it produces about 33% of the country's total production, and grows about 95% of the country's Virginia cigarette tobacco. Bombay comes next with an output of about 146 million lbs. followed by Madras with about 63 million lbs., Uttar Pradesh accounting for about 27 million lbs. and

West Bengal about 25 million lbs in 1953-54. The other important tobacco growing States are: Bihar (22 m. lbs.); Hyderabad (16 m. lbs.); Assam, Mysore, Orissa, Madhya Pradesh, Rajasthan, Madhya Bharat, Punjab and Vindhya Pradesh (totalling 55 m. lbs.)

Tobacco production in India is concentrated in six different areas :

(i) THE GUNTUR AREA comprises of the districts of Guntur, Krishna, East and West Godavari in Andhra State and the adjoining portions of Hyderabad State. Varieties of Virginia Flue-cured and Sun-cured and country or Natu tobaccos are exclusively grown in this area. A district variety called *Lanka* is grown in the Godavari and Krishna islands and this is mainly used for preparing short pencil like hand-rolled cheroots.

(ii) THE NORTH BIHAR AND BENGAL AREA comprises of the districts of Muzaffarpur, Darbhanga and Purnea in Bihar and Jalpaiguri, Malda, Berhampore, and Dinajpur in West Bengal. In this area both *N. tabacum* and *N. rustica* varieties are grown mostly for use in hookah. They are known locally as Vilayati, Motihari and Jati.

(iii) THE UTTAR PRADESH AND PUNJAB AREA comprising of the district of Farrukhabad in the U. P. and the districts of Jullundur and Ferozepore produce Culcuttia types used mainly for hookah and chewing purposes.

(iv) THE CHAROTAR (GUJARAT) AREA comprises of Anand, Borsad, Pet-

lad and Nadiad taluks of Kaira districts in Bombay State. This area is grown wholly with varieties of bidi tobacco. Attempts are also being made to grow Virginia tobacco in this area.

(v) THE NIPANI AREA includes the Belgaum and Satara districts of Bombay along with Kolhapur, Sangli and Miraj. In this area bidi tobacco is mainly grown.

(vi) THE SOUTHERN MADRAS AREA comprises mainly of Madura and

Coimbatore districts of Madras State. In this area, cigar filler and binder and chewing tobaccos are mostly grown.

N. rustica is mostly used for hookah tobacco, a portion being utilised as snuff and chewing tobacco.

N. tabacum is used for making cigarettes, bidis, cigars, cheroots, snuff and chewing tobacco.

Virginia tobacco which is mostly grown in Andhra is used for making cigarettes and is commercially most important. Burley tobacco is mostly used for blending in cigarettes and for pipe and shag mixture. The 'Natu' type is mainly used in the preparation of small handrolled cheroot locally known as *Chutta*. Light brown leaves of this tobacco is used for producing cheaper brands of cigarettes. Dark brown leaves are exported to the U.K. for manufacture of different brands of pipe tobaccos.

The principal varieties grown in the southern districts of Dindigul, Tiruchirappalli and Coimbatore in Madras State are used for cheroot and cigar and for chewing purposes. Filler tobacco is produced by blending various tobaccos, the proportion depending on the quality of the cigar desired. In Dindigul area both binder and filler leaves are grown to a limited extent.

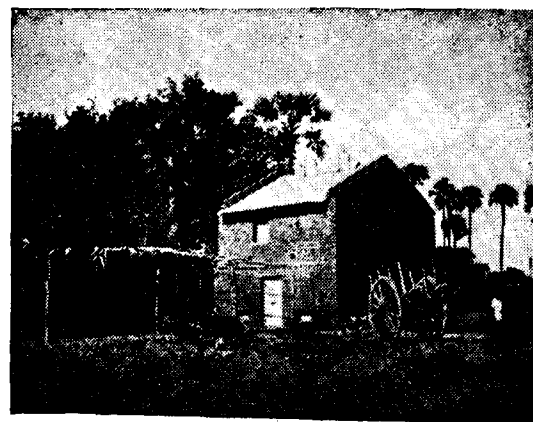
Flue-curing barns are essential for curing the cigarette tobacco to better its quality under artificial heat. The other types are either sun-cured, air-cured, rack-cured or pit-cured. The number of flue-curing barns rose from 1,603 in 1935 to



Cheroot Tobacco Plant



Cigar Tobacco Nursery



Flue-Curing Barn



Arranging leaves inside the Barn

18,820 in 1951. This indicates the progress made in growing flue-cured Virginia tobacco in the country within one and a half decade.

Manufactured Tobacco Products :

The main manufactured products of the tobacco in India are cigarettes, cigars, cheroots, bidis, snuff, chewing and hookah tobaccos. Apart from the cigarette factories and to a limited extent cigar factories, the manufacture of other tobacco



Cigar-making

products, like bidi, hookah, chewing and snuff, is essentially a cottage industry.

Cigarettes: The Indian cigarette industry has made rapid progress during the last 15 years and particularly during the World War II. Before the war, the industry's intake was estimated to be about 23 million lbs. of unmanufactured tobacco, but since then it has increased steadily.

The annual production of cigarettes in India before World War II was estimated at about 750 crores in number. With the spread of cigarette smoking habit in the country during the war and after, the industry's productive capacity has expanded to meet the increased demand. Annual production during the past 6 years has averaged about 2,150 crores. Installed capacity based on one shift of 8 hours a day is about 1800 crores, cigarettes per year. Many factories however, work two shifts.

The present distribution of cigarette factories both small and big, in different

M. S. Patel

States is: Bombay 7, Hyderabad 5, West Bengal 3, Mysore, Uttar Pradesh, Bihar one each.

A factory for manufacturing cigarette paper is situated in Calcutta. About 20 crores of rupees are understood to have been invested in the cigarette manufacturing industry and this industry is supposed to cater for over 95% of the country's trade.

Cigar and Cheroot: The cigar & cheroot industry has not developed to the extent of cigarette industry in India. The cigar and cheroot factories are mostly concentrated in Madras.

bye-products industry has not developed to the extent desired.

(i) Tobacco Waste: About 10% of tobacco is declared every year as unfit for human consumption and the quantity in 1953-54 was 54 million lbs.

The problem of utilising tobacco waste received the attention of the Indian Central Tobacco Committee even from its formation and attempts were made by it to explore the possibilities of its commercial use in various ways (including export). On its initiative the experiments conducted by the National Chemical Laboratory of India, Poona, resul-



Cigar (5½")



Cheroot (4½")

Bidi, Chewing and Snuff: Bidi tobacco industry is mostly concentrated in Madhya Pradesh, Bombay and Bihar; the chewing tobacco industry in Bombay and Uttar Pradesh; and snuff tobacco industry in Madras.

Tobacco Bye-Products: In a tobacco producing country like India, the tobacco

ted in the invention of a suitable process for extracting nicotine sulphate (a powerful insecticide) economically from tobacco waste. A firm in Guntur has since been licensed to work out this process.

(ii) Tobacco Seed and Oil: Tobacco seed is at present allowed to grow only

in Virginia type and hence it is available for commercial use only in the Andhra State. The seed is used for making oil and cake. The oil can be used profitably in the varnish and paint industry and the cake for feeding cattle or manuring crops.

Home consumption:

Quantities of raw tobacco cleared for home consumption is on the increase. Total estimated quantities of different types of raw tobacco cleared for home consumption are:

Types.	Quantity in million lbs. 1952-53	1953-54.
Flue-cured Virginia.	28.0	30.7
Biris.	120.2	116.4
Chewing.	108.6	109.0
Cigar & Cheroot.	40.4	38.1
Hookah.	123.7	117.1
Snuff.	7.6	8.7
Agricultural purposes.	37.0	48.1
Destruction.	4.1	5.9
Stalks.	30.1	33.6
Miscellaneous (other than Virginia)	22.8	21.7
Total	522.5	529.3

More than 75% of Indian tobacco production consists of Bidi, Chewing, Hookah and Snuff tobaccos. They are mostly consumed locally as will be evident from the above.

Quantities of manufactured tobacco products such as cigarettes, cigars and cheroots cleared for home consumption in 1953-54 are, 19,773.3 million pieces of cigarettes and 471.9 million numbers of cigars and cheroots.

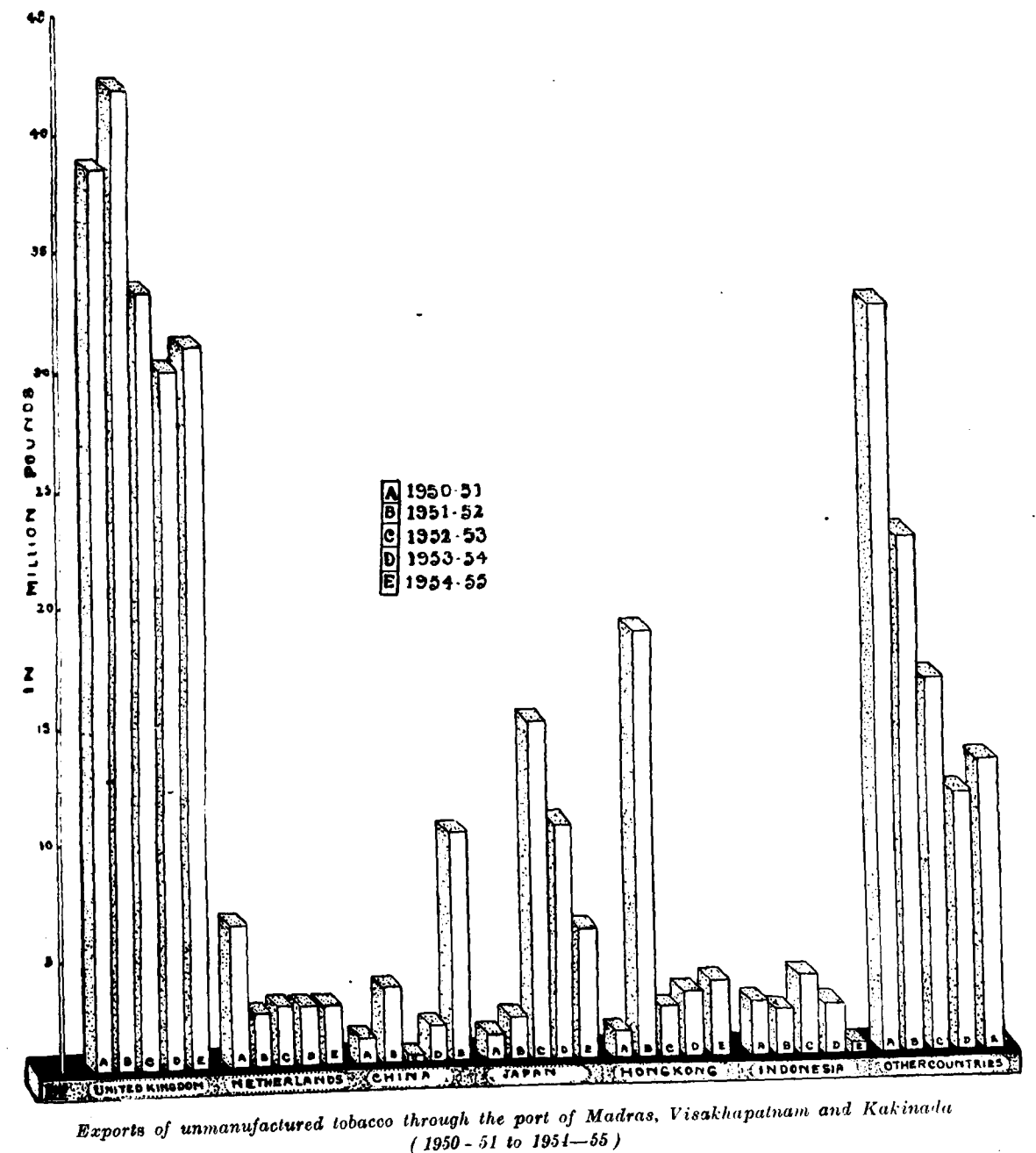
More than 95% of manufactured cigars and cheroots were cleared for home consumption in the States of Madras and Andhra.

Exports:

The important varieties of tobacco exported are Flue-cured Virginia, Sun-cured Virginia, Bidi, White Burley and Sun-cured country. Except Bidi tobacco, others, before export are subject to quality inspection by the Tobacco Grading Inspectorate set up by the Government of India. The principal tobacco marketing centre in India, which is internationally famous, is Guntur in Andhra, where the Grading Inspectorate also has its headquarters. They ensure the foreign buyer quality tobacco.

Chief market for Virginia tobacco is the U. K. where it is used in the manufacture of cigarette as the characteristics of Indian Flue-cured Virginia tobacco enable it to be readily blended with other tobaccos.

The other types of Indian tobacco purchased by the U.K. are White Burley and Sun-cured Virginia for pipe and shag mixture. On the Continent there is a demand for various grades of Flue-cured Virginia. Recently, China evinced further interest in Flue-cured Virginia tobacco and concluded a trade agreement for export of 9 million lbs. from India. This negotiation came in the rapid wake of China's deal for the purchase of 4.5 million lbs. in August-September 1954 as a result of the solid efforts made by the Tobacco Delegation which the Government of India sent out to the far eastern countries mainly to create



interest for Indian tobacco in these countries. Almost the majority of the tobacco exported to Pakistan, Aden and Dependencies, Egypt and other countries con-

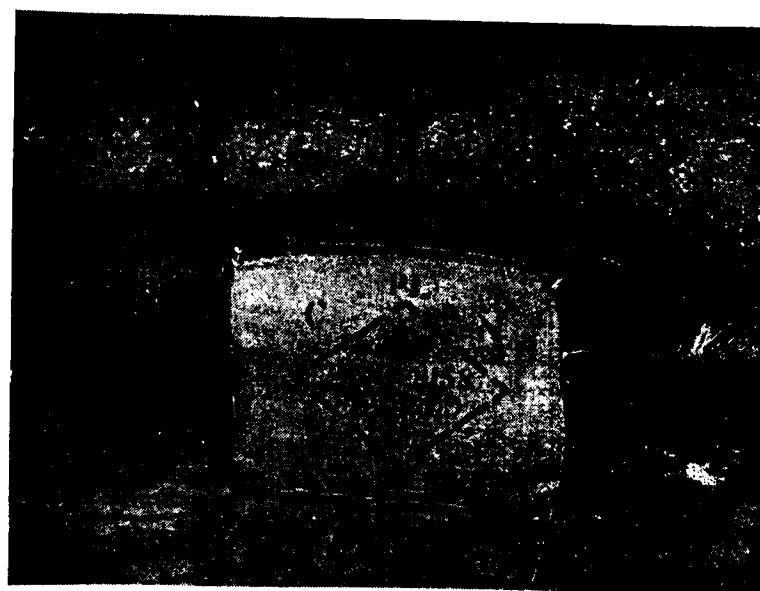
sists of Natu and Bidi tobaccos. Indian flue-cured Virginia has its own special characteristics which distinguish it from flue-cured tobaccos of other countries.

Exports of Manufactured & Unmanufactured Tobacco from India
(By Sea and Air only)
(Quantity and Value in Million lbs. and Rs.)

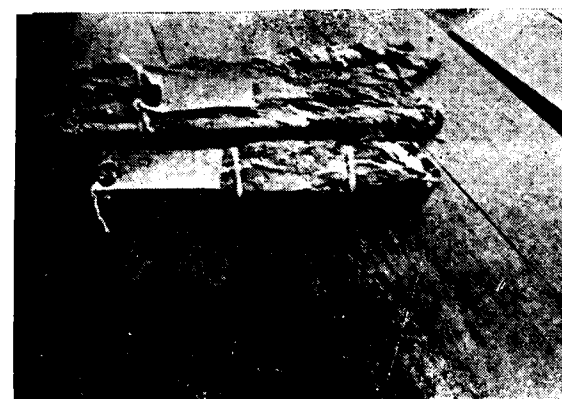
Countries	1950—51		1951—52		1952—53		1953—54		1954—55	
	Quan- tity	Value	Quan- tity	Value	Quan- tity	Value	Quan- tity	Value	Quan- tity	Value
1. Aden & Dependencies	4.3	2.0	4.6	2.8	3.1	2.2	7.2	4.4	6.4	3.4
2. Belgium	5.2	3.4	1.0	0.8	2.2	1.5	2.6	2.0	1.7	1.0
3. Ceylon	1.6	5.0	2.6	7.8	2.7	9.2	3.4	11.0	3.1	9.7
4. China	0.1	0.1	3.3	1.6	0.4	0.2	1.6	0.8	10.1	5.1
5. Denmark	1.2	1.7	0.3	0.6	—	—	—	—	0.3	0.6
6. Egypt	1.9	2.4	2.3	3.9	2.0	3.2	1.8	2.8	2.2	2.9
7. Germany Western	3.5	1.7	0.1	0.04	0.7	1.1	—	—	0.04	0.04
8. Hongkong	1.3	1.2	18.2	11.1	2.4	3.5	2.8	3.4	3.2	2.2
9. Indonesia	3.0	4.0	2.0	2.4	3.4	5.0	2.4	2.3	0.3	0.3
10. Irish Republic	3.4	7.8	0.6	1.4	0.1	0.1	2.3	4.0	1.0	2.0
11. Japan	1.2	0.6	1.9	1.8	14.5	18.1	10.1	16.0	5.9	4.6
12. Kenya Colony	0.7	1.2	1.2	2.0	0.9	1.5	0.5	1.3	0.6	1.0
13. Netherlands	6.2	4.6	2.3	2.5	2.6	2.6	2.7	1.8	2.6	1.5
14. Pakistan	10.9	22.4	6.5	14.3	2.7	6.2	0.7	0.7	1.9	2.5
15. Sweden	2.3	3.7	1.6	2.8	1.4	2.2	1.0	1.1	—	—
16. U. K.	38.8	79.7	43.0	88.9	33.5	70.5	30.1	64.8	31.1	65.8
17. U. S. S. R.	8.4	3.3	7.6	7.3	3.6	2.3	—	—	—	—
18. Yugoslavia	1.8	0.4	4.0	2.0	—	—	—	—	—	—
19. Others	2.4	6.4	4.4	15.2	4.7	7.9	3.0	4.5	6.0	8.1
Total ...	98.2	151.6	107.5	169.2	80.9	137.3	72.3	120.9	76.4	109.8

It has got an attractive colour, is neutral in flavour, good for blending purposes and comparatively cheaper. These outstanding characteristics have maintained its demand in foreign countries. More than 45 countries purchase Indian tobacco.

Out of many countries which produce tobacco, about 26 countries subject tobacco to monopolies. There are no monopolies in the English-speaking countries. For instance, when the Labour Government in the



Bale ready for export



Trade Sample of F. C. V. Tobacco

U.K. nationalised certain other industries, the tobacco industry was left untouched. On the other hand, there are tobacco monopolies in almost all the Latin countries in Europe. The geographical distribution of Monopoly is around the Mediterranean basin. In that area Spain, France, Italy, the Balkan countries, Turkey, Syria, Lebanon, Tunisia and Morocco have all tobacco monopolies. Elsewhere, tobacco monopolies can be found in Europe, viz. Austria, Sweden, Russia and Poland; in Asia—China, Mongolia, North Korea, Thailand, Iran and Japan; in Africa—Abyssinia and the international zone of Tangier and lastly in S. America—Peru and Ecuador.

Within Monopoly group itself, there used to be distinction between the State Monopolies and Concession Monopolies. State Monopolies were usually organised as administrative services in which private capital played no part while the Concession Monopolies were companies entirely controlled by private industrialists. The control exercised by the Monopolies on cultivation varies from

country to country. India has a free trade in tobacco.

In order to create and establish permanent markets for Indian tobacco the following steps were taken recently by the Indian Central Tobacco Committee and the Government of India.

(a) Formation of a Tobacco Export Advisory Sub-Committee.

(b) Appointment of Tobacco Sales Officers in important importing countries or regions.

(c) Reduction in excise duty on certain low grades of Flue-cured Virginia and other types of tobacco and abolition of export duty on cigars.

(d) Sponsoring of a five-man tobacco Trade Delegation to Eastern Countries viz., Thailand, Japan, Hongkong, China and Singapore.

Constitution of an Export Advisory Council for tobacco is under active consideration of the Government of India.

In addition to the above, tobacco was included as one of the items of export in the trade agreement made with Poland, Sweden, Indonesia, Egypt, Ceylon, Czechoslovakia, Yugoslavia, Russia, Italy and East Germany.

The trade agreements signed earlier with Austria, Finland, Norway, Hungary and West Germany and which included tobacco as an export item, were extended to a further period.

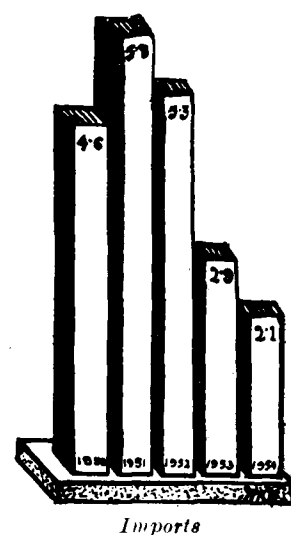
Indian tobacco continues to enjoy the "Imperial Preference" granted to Commonwealth countries.

Imports :

Following table shows the imports of tobacco into India :

Year	Quantity (Million lbs.)	Value (Rs. Crores).
1950-51	6.16	2.74
1951-52	5.21	1.99
1952-53	5.67	1.80
1953-54	2.08	0.62
1954-55	2.62	0.67

The table indicates the sudden decline in imports. The bulk of imports consists of unmanufactured tobacco. U.S.A. alone accounting for about 80%. Mainly, Virginia cigarette tobacco leaf is imported from the U.S.A. for blending purposes in the manufacture of high class cigarettes, while some quantity of wrapper tobacco is also imported chiefly from the U.S.A. Manu-



Imports

factured tobacco imports into India are very little like cigarettes from the U.K. and the U.S.A.

Duty, Cess and Other Levies :

No export duty is charged on unmanufactured and manufactured tobacco exported from India. A cess of $\frac{1}{2}\%$ *ad valorem* is being collected on tobacco exported outside. The import duty is charged on all forms of tobacco imported into India and varies according to types.

A Central Excise duty is also levied on tobacco of any form "whether cured or uncured and whether manufactured or not, including the leaf, stalks and stems of the tobacco plant, but not including any other part of a tobacco plant, while still attached to the earth." The rates of duty vary according to the types.

The Government of India recently reduced the excise duty on certain varieties of tobacco with a view to alleviate the distress of tobacco growers and traders.

In addition to the excise duty charged and the cess levied by the Government, certain local market committees also charge fees on tobacco.

As the Government of India have with effect from April, 1953 terminated the agreement under which the State Governments were receiving compensation in consideration of not levying any tax on tobacco, certain State Governments like Madras, Mysore and Bombay have withdrawn the exemption from general tax in

respect of sales of tobacco and to levy a special tax on the sale of certain types of tobacco products. Madhya Pradesh Government imposed license fees on wholesale dealers of tobacco. Each State is following its own policy.

The Committee and its activities.—

Alive to the importance of tobacco in the country's economy, the Government of India constituted in November 1945, the Indian Central Tobacco Committee containing representatives of all interests connected with the commodity, viz. the grower, the trader, the industrialist, the co-operator, the consumer and the agricultural officer.

The Committee has since established a Central Institute at Rajahmundry (Andhra) for fundamental research on all types of tobaccos and applied research on cigarette and lanka tobaccos grown in that area, and regional experimental stations, at Veda sandur (Madras) for cigar & cheroot tobacco, at Pusa (Bihar) for hookah & chewing tobacco, at Dinhat (W. Bengal) for hookah and wrapper tobaccos. A Sub-Station for flue-cured tobacco also serving as a regional station for *natu* tobacco is functioning at Guntur (Andhra). Besides the above, the Committee also finances wholly or partly the bidi tobacco work at Anand and Nipani in Bombay and the Hookah Tobacco Research Sub-Station at Ferozepore (Punjab).

Training facilities for workers in field of tobacco are also provided by the Research Institute and candidates from

abroad were given training in the Institute.

Improved seeds are distributed to cultivators by the Research stations; demonstrations on the improved practices of raising the nursery, application of fertilisers, handling and curing are also conducted by the research workers at the stations. Pamphlets giving information on the improved practices on the seasonal operations in tobacco production are printed in several regional languages in large quantities and distributed free to the growers promptly, for adoption.

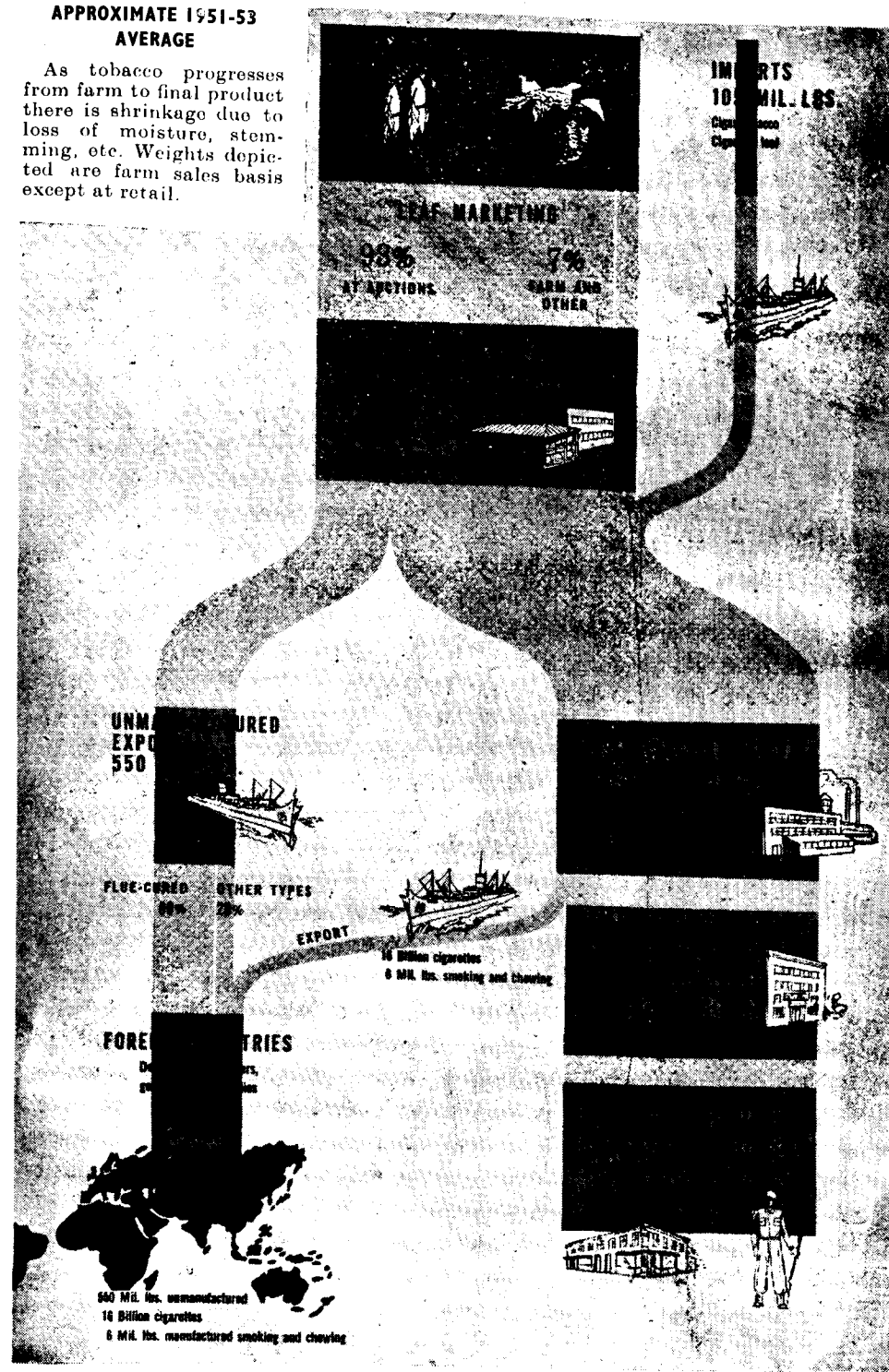
The Tobacco Committee serves as an information bureau for those interested abroad in Indian tobacco. The Committee is publishing a quarterly "INDIAN TOBACCO" and "TOBACCO BULLETIN" monthly. A comprehensive Tobacco Directory containing valuable information to tobacco trade has just been published by the Committee. More concerted measures for sustained propaganda for Indian tobacco in foreign countries, coupled with vigorous steps to improve the quality of tobacco through its research stations and to create better market conditions are contemplated by the Committee under the Second Five Year Plan.

It is also proposed under the Plan to strengthen tobacco research work by building up modern laboratories with enlarged scope for comprehensive research on all types of tobacco so that India not only retains its lead in quantitative production of tobacco, but also present in the world markets tobacco of further improved quality at competitive prices possessing all the

THE TOBACCO INDUSTRY IN THE UNITED STATES

APPROXIMATE 1951-53 AVERAGE

As tobacco progresses from farm to final product there is shrinkage due to loss of moisture, stemming, etc. Weights depicted are farm sales basis except at retail.



F. E. Thigpen and A. G. Conover

markets; 'barn door', or country buying, sales by cooperatives and private dealers after delivery of tobacco by growers; and the 'hogs-head' market for Maryland tobacco at Baltimore. A substantial part of the cigar wrapper tobacco is grown by cigar manufacturers or under contracts with them.

More than 90 percent of our 1953 tobacco crop was sold on 171 'loose leaf' auction markets. Sales are conducted in large, one storey warehouse buildings with skylights spaced across the roof to provide light. In 1953 there were 940 such warehouses, covering an area of more than 1,000 acres.

Before taking his tobacco to the auction, the farmer sorts it into lots based on colour and other factors relating to grade and quality. Each lot of tobacco at the auction warehouse is placed on a separate basket or tray and weighed. A ticket on each basket shows the weight and the name of the grower and includes space for the Government grade, the price bid and the buyer's grade.

The auction sale usually begins about 9 a.m. Federal inspectors enter the grade of the tobacco on each basket ticket ahead of the auction. The warehouseman, who acts as a commission merchant, makes the starting bid on each basket of tobacco. The auctioneer calls the bids. Usually 6 to 10 buyers participate in each auction sale. The ticket marker records the price bid and the buyer's name and grade on the ticket. Sales usually are made at the rate of 350 to 400 baskets an hour. The farmer can obtain payment for his

tobacco at the warehouse office within a few minutes after the auction.

The farmer, who usually observes the sale of his tobacco, has a right-used seldom-to reject the bid on any basket of his tobacco.

About 4 per cent of the 1953 tobacco crop was sold at the 'barn door', about 2 percent through cooperatives or private dealers after delivery to warehouses by growers, and about 0.2 percent through the Baltimore 'hogshead' market.

'Barn door' sales are made by individual negotiation between the farmer and the buyer. If deliveries are made to cooperatives or private dealers, the cooperative or dealer negotiates the sale on behalf of the farmer. On the Baltimore market the tobacco is packed in the hogshead by or for the farmer. Samples, drawn from each hogshead, are displayed by the grower cooperative or the commission merchant. Buyers inspect the samples and submit sealed bids. The farmer or his representative may reject the bids.

A farmer who rejects the sale of a basket of tobacco on the auction market runs the risk of a lower bid when it is reoffered. A farmer who rejects an offer for tobacco at the farm runs the risk that he will receive no other offer for some time. Although some growers of cigar tobacco and some Maryland growers, hold their crops over from one year to another, to do so generally is not practical. The grower therefore is under pressure to sell at the price offered.

With the development of Federal price support programmes, loans have been

Tobacco In The U. S. A.

made available for the various grades of tobacco at fixed rates. In areas served by the auction markets, a grower usually takes advantage of the loan if the buyer does not bid more than the loan. In other areas the grower usually sells before he knows the loan rates or prices. At best, he can only obtain an indication of the loan rate based on grading of samples. Final grades for loan purposes can be determined only after delivery of the tobacco to designated warehouses where it can be inspected fully.

Each grower who places tobacco under loan usually becomes a member of a grower association, which makes the loans under contract with Commodity Credit Corporation. The association is responsible for having the tobacco processed, packed, and stored, and for its sale. Tobacco placed under loans from the 1951, 1952, and 1953 crops averaged 277 million pounds.

Most tobacco is in a semiperishable condition when it is sold by farmers. Therefore, it must be moved promptly to central plants for handling and processing. Before tobacco can be placed in storage for necessary aging of about 2 years it must contain the right amount of moisture. Air-drying, fermentation, and steam redrying are used to fix the percentage of moisture.

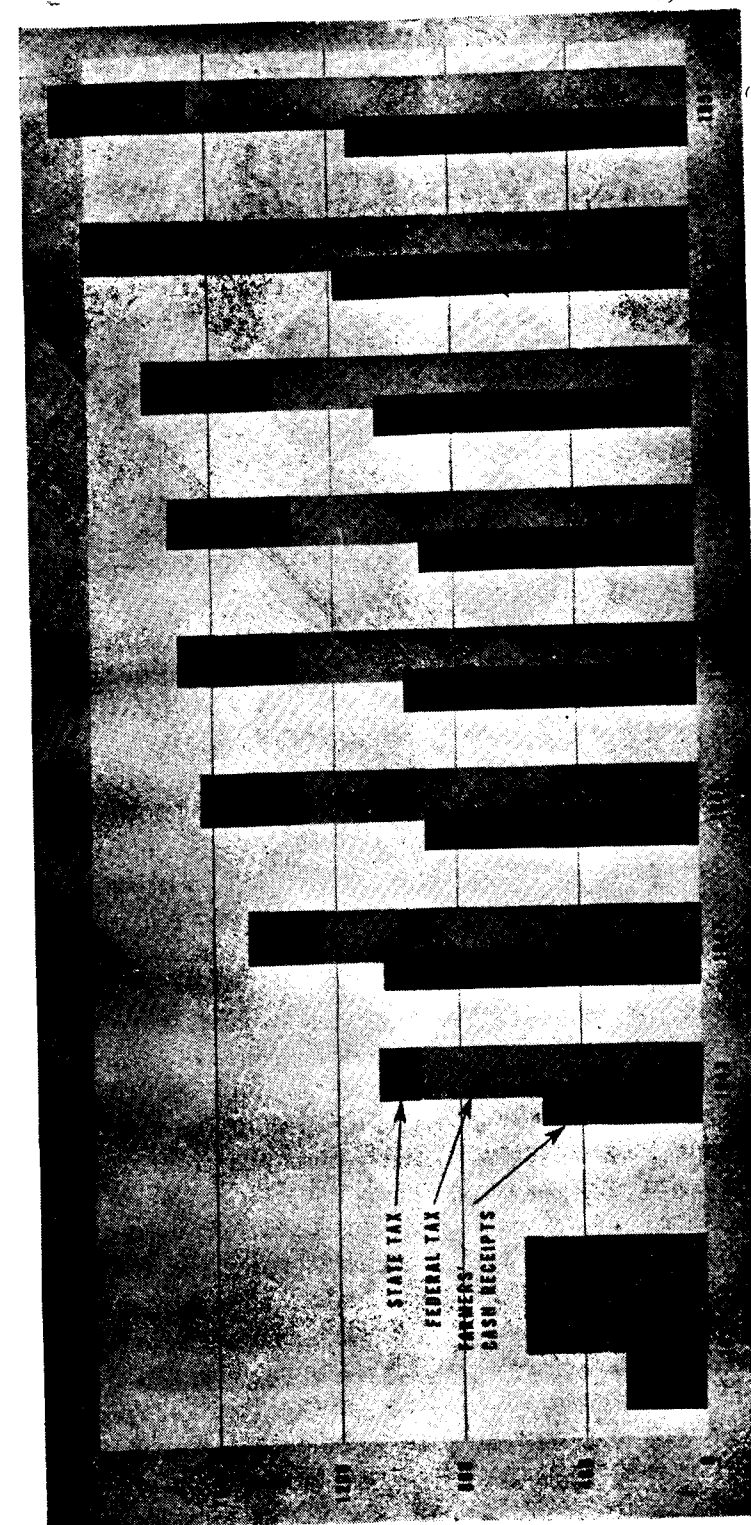
In the steam redrying process, moisture is removed from the leaf and then put back in proper amounts. Steam redrying machines are used for the cigarette and smoking tobaccos (except for most Maryland tobacco) and part of the chewing

and snuff tobaccos. Most of the chewing and snuff tobaccos are air-dried. Maryland tobacco dries on the farm and usually is packed as delivered by farmers. Most of the cigarette, smoking, and chewing and snuff tobaccos, after processing are packed in hogsheads that hold 800 to 1,500 pounds. Cigar leaf tobaccos are conditioned by fermentation. Nearly all of the cigar tobacco is packed in bales or boxes weighing 150 to 400 pounds.

Substantial amounts of tobacco used in the cigarettes in this country are stemmed at the redrying plants before being packed for storage. The stems are not removed from the remainder until the tobacco is moved forward from storage for manufacture. Tobacco purchased for export usually is not stemmed before shipment abroad.

The flavour, aroma, and quality of United States tobaccos are prized in many countries. United States exports of tobacco annually range from 450 to 600 million pounds (farm sales weight). Tobacco frequently has ranked third among our agricultural exports. Exports before the Second World War amounted to about one-third of the crop each year. Postwar exports have been a little above the prewar exports, but represent only about one-fourth of the crop, as domestic use has increased much more than exports. About 75 percent of our exported tobacco goes to countries of Western Europe, with small amounts to other European countries, about 15 percent to countries in the Far Pacific and Asia and about 10 percent to countries in Africa and South America.

INDIAN TOBACCO



*Tax Receipts from tobacco products, and Farmers' Cash Receipts from tobacco
(Fiscal years 1935-53)*

The upward trend in smoking of cigarettes of the United States 'blended' type and of the English 'Straight Virginia' (flue-cured) type has made flue-cured the main export tobacco. Average exports of flue-cured at 433 million pounds (farm weight) during the 5 marketing years ending with 1953 were almost 20 percent above the prewar level. The total United States exports for the 5 years averaging about 530 million pounds, exceeded prewar levels by about 14 percent. Burley exports at around 35 million pounds now equal nearly 3 times the small prewar figure. Dark-fired and air-cured tobaccos have lost ground and exports at around 43 million pounds now average just over half as much as before the war. Exports of cigar wrapper and binder and of Maryland tobacco are larger than before the war.

Foreign markets for United States tobacco in the postwar period have been affected adversely by foreign restrictions imposed primarily to save dollar exchange. Governments of tobacco-importing countries have been loath to reduce total imports because tobacco products are a major source of revenue. This has led them to favour other tobaccos even where preference of their domestic trade is for United States leaf. These policies along with favourable worldwide tobacco prices in recent years have encouraged expansion of tobacco production in foreign producing areas. Consequently, United States tobacco faces increasing competition in world markets.

About 93 percent of the tobacco used by American manufacturers is grown in this country. The rest consists of types

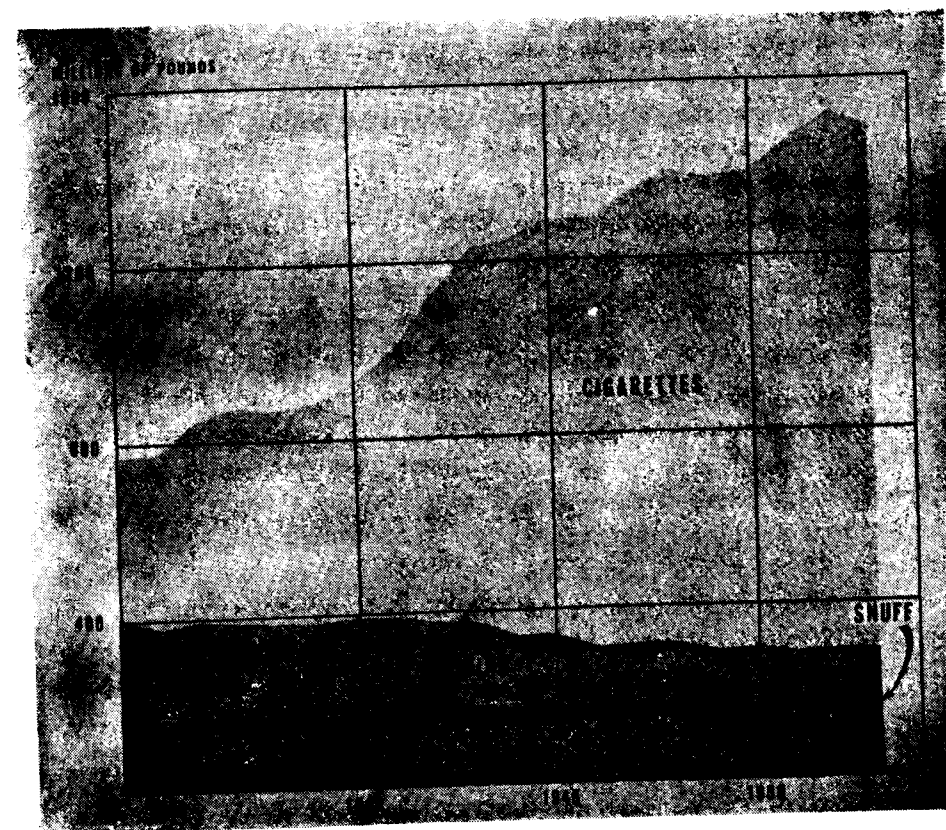
imported primarily for blending with domestic tobaccos. This country usually ranks second or third among the world's importers. United States imports for consumption in 1953 were 105 million pounds. About three-fourths of United States imports are aromatic (oriental) cigarette tobacco, mainly from Turkey, Greece, and Syria, with smaller imports from several other countries. A fourth is cigar tobacco, mainly from Cuba, with small amounts from the Philippines and Indonesia.

The United States import duties on cigarette leaf and cigar wrapper have been reduced one-half and one-third respectively, since 1947. A restrictive quota arrangement on Cuban tobacco was eliminated and its preferential duty status continued.

More tobacco is manufactured and consumed in the United States than in any other country, both in total quantity and per capita. With only about 6 percent of the world's population, United States consumes nearly a fourth of the world's tobacco.

The tobacco manufacturing industry can be considered in three broad segments—cigarettes and smoking; cigars; and chewing and snuff. Several companies make more than one product.

More than 98 percent of the cigarette manufacture in the United States is concentrated in six companies. One factor in this concentration probably is the cigarette machine. Highly significant also are heavy investments in inventories of leaf tobacco sufficient for manufacturing requirements for about 2 years and large



Tobacco Products in the United States
1934-53 Unstemmed processing—weight equivalent.

expenditures for advertising. Labour cost in manufacturing relative to the value of cigarettes is among the lowest for any industry.

Consumer expenditure of about 4.4 billion dollars in 1953 for cigarette in the United States compares with total expenditure of 5.2 billion dollars for all tobacco products. The Federal Government and 41 State Governments collected about 2 billion dollars in taxes on cigarettes, compared with a total on all tobacco products of about 2.2 billion dollars.

Total output of cigarettes in the United States in 1953 was 423 billion—of which 16

billion were exported. In 1953, daily consumption of cigarettes averaged nearly 10 for each person, 15 years and older—more than twice as many as before the war.

In recent years there has been a steady and substantial gain of the 'King size' cigarettes, which are about one-fifth longer and contain about one-sixth more tobacco than the standard size. There also has been a rapid gain in sales of filter tip cigarettes, although they still are a small part of total output.

Cigar manufacturing in the United States has shifted largely from hand to

machine processes, but the shift has been slower and less complete than in the case of cigarettes. The greatest difference in mechanization of cigarette and cigar manufacture is the continuous feeding of tobacco and paper through the cigarette machine, whereas each cigar must be made individually through the machine from the leaf for the filler, the leaf for the binder, and the leaf for the wrapper. The output of a cigarette machine is 1,200 to 1,400 a minute. The output of a cigar machine is about 10 to 12.

In 1953, nearly 60 percent of the cigars were made by 8 companies, another 30 percent by some 40 companies, and the rest by a few hundred small firms. The manufacture of cigars employs about 40 percent more workers than does the manufacture of cigarettes.

Consumers spend about 560 million dollars annually for around 6 billion cigars. Around 50 million dollars represent taxes to the Federal Government and to 11 State Governments. Total consumption of cigars in 1953 was about 14 per cent above the 1935-1939 average, but consumption per person was down about 5 percent and was only about two-thirds of the 1925-1929 average.

Smoking tobacco, chewing tobacco and snuff have been declining in relative importance over a considerable period of years. Output of smoking tobacco in this country in 1953 was 86 million pounds compared with an average of 161 million in 1925-1929. Similar output figures for chewing tobacco are 83 and 197 million pounds. The 1953 output of snuff was

39 million pounds, only a little below the 1925-1929 average. Annual tax receipts from smoking, chewing, and snuff are about 20 million dollars.

Historically in this country taxes are levied on cigarettes with rates fixed on a per thousand basis. Taxes on cigars are levied on the basis of variable rates per thousand depending upon the prices at which the cigars are manufactured to retail. Taxes on smoking and chewing tobaccos and snuff are levied with rates fixed on a per pound basis. The current Federal tax rate on cigarettes is \$ 4.00 per thousand. On cigars the rates vary from \$ 2.50 per thousand for those retailing at 2½ cents each or less to \$ 20.00 per thousand on those retailing for more than 20 cents each. On smoking and chewing tobacco and snuff the rate is 10 cents per pound. Taking into account the tobacco contained in the various products the approximate tax rates per pound would be \$ 1.89 on cigarettes, 44 cents on cigars, and 18 cents on smoking, chewing, and snuff combined.

About 250 million pounds of stems and scrap and damaged tobacco which are not suitable or not needed for use in tobacco products are processed annually for use in fertilizers, insecticides, and other products. Some stems from tobacco are used in products in this country and some are exported for use in foreign countries.

Tobacco products are sold through approximately 4,500 wholesalers and more than a million retail outlets. Chain grocery stores and vending machines have become increasingly important channels for consumer purchases.

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INDIAN TOBACCO

A Ryot's Experience

By
J. SUBBA RAO*

(i) ECONOMICS OF RUNNING A SINGLE BARN (16' x 16' x 20') VIRGINIA FLUECURING CIGARETTE TOBACCO (GORIBIDANUR AREA)

The season begins from March, the time of laying out the nursery and closes by the end of October of each year. Though late plantings produce good green leaf during November, the cured leaf will not be in condition, but grows very brittle. Consequently it cannot be handled without the risk of producing maximum quantity of scrap which fetches the least value.

By experience it is found that the developing monsoon, at the end of the season, has the effect of producing spot disease. Hence the period of curing may be confined from 24th July to 24th Sept. which is the best part of the season.

The production of green leaf will increase by another fifty per cent in a good season and under proper and careful cultivation. A programme for cultivation and curing under normal weather conditions is noted below for guidance of the growers and curers which comprises all operations from seed to sale.

Time of Nursery	25th March
Transplanting	10th May
Acreage to be planted	10 acres
Commencement of curing	24th July
Yield of green leaf for 10 acres	50,000 lbs.
Quantity of green leaf to be loaded	5000 lbs. per Barn
Number of curings	10 curings
Yield of cured leaf	7,500 lbs.
Saleable cured leaf	7,000 lbs.
Realisation at an average cost of	
1-4-0 per lb.	Rs. 8,750-0-0

Deduct:

Cost of green leaf	Rs. 2,500-0-0
Production cost	950-0-0
	Rs. 3,450-0-0
Net Gain	Rs. 5,300-0-0

Under good seasonal conditions the yield of green leaf and cured leaf may be raised by another 50%.

(ii) COST OF PRODUCTION OF V. F. C. TOBACCO PER ACRE

A. (1) Preparatory Irrigation	Rs. 8 0 0
(2) —do— Ploughing	9 0 0
(3) Furrowing	3 0 0
(4) Fertilizers & application	
Fertiliser 2 Bags @ Rs. 23/- =	46-0-0
Manure 4 carts @ Rs. 2/-	8-0-0
	54 0 0

*Tobacconist, HUDGUR P.O. (Goribidanur Taluk) Mysore State

(5) Irrigation & Planting	12	0	0
(6) Subsequent Irrigation	8	0	0
(7) Earthing up and Weeding Etc.	8	0	0
(8) Picking	18	0	0
(9) Cost of Seedlings	10	0	0
Total Rs.	130	0	0

B. Curing Cost:

(1) Stringing & Loading	7	8	0
(2) Labour (Firemen and Curer)	27	8	0
(3) Fuel 2½ Tons	36	0	0
(4) Unstringing	3	0	0
(5) Grading, Baling etc.	16	0	0
Total Rs.	90	0	0

C. Cost of Green Leaf:

6000 lbs. @ Rs. 5/- per 100 lbs.	Rs. 300	0	0
Total Expenditure: —A+B+C =	Rs. 520	0	0
Saleable cured leaf produced (900-50)			
850 lbs. @ 1¼/0 per lb.	Rs. 1062	8	0
Deduct Expenditure	520	0	0
Net Income Rs.	542	8	0

Cost of cured Leaf per Lb.	Rs. 0-9-9
Realisation per Lb. of cured Leaf	1-4-0

Under good seasonal conditions and with maximum dosage of fertilisers the yield of green leaf could be raised by another 50%.

Topping Virginia Tobacco

(Central Tobacco Research Institute, Rajahmundry)

Because of limited moisture conditions in which flue-cured tobacco is grown in Northern Circars the plant does not get sufficient nutrition to develop good bodied leaves. There is a general but *mistaken belief* that only colour of leaf is important, and to achieve this the plant is allowed to produce flowers and fruits with the result that the leaf remains rather thin although it may develop flashy yellow colour. Yellow leaf, if thin, is of poor quality as it does not develop sufficient aroma after ageing for use in cigarettes.



Fig. 2



Untopped field

Topped field

Fig. 1

Experiments conducted at the Central Tobacco Research Institute, Rajahmundry and at the Cigarette Tobacco Research Sub-Station, Guntur show that judicious topping can help to improve body of leaves, especially of the upper leaves, without deterioration in quality and may give increased yields from 10 to 15 per cent. (Fig. 2).

Plants which have light green leaves only should be topped two or three days before

the first priming by snapping off the top (flower-head) with hand or with a clean sharp knife without jerking the plant. (Figs. 3 & 4).



Fig. 3



Fig. 4

Immediately after topping apply a drop of coconut oil by means of small brush to undeveloped buds in the top 5-6 leaf axils. (Fig. 5) Application of coconut oil



Fig. 5

will completely suppress development of branches or suckers and maximum benefit from topping will be obtained. Otherwise suckers develop from the top leaf axils

which are to be hand-removed periodically and this involves considerable labour and time. (Fig. 6 & 7.)



Fig. 6



Fig. 7

Do not top tobacco plants if the leaves are too green at the time of first priming.

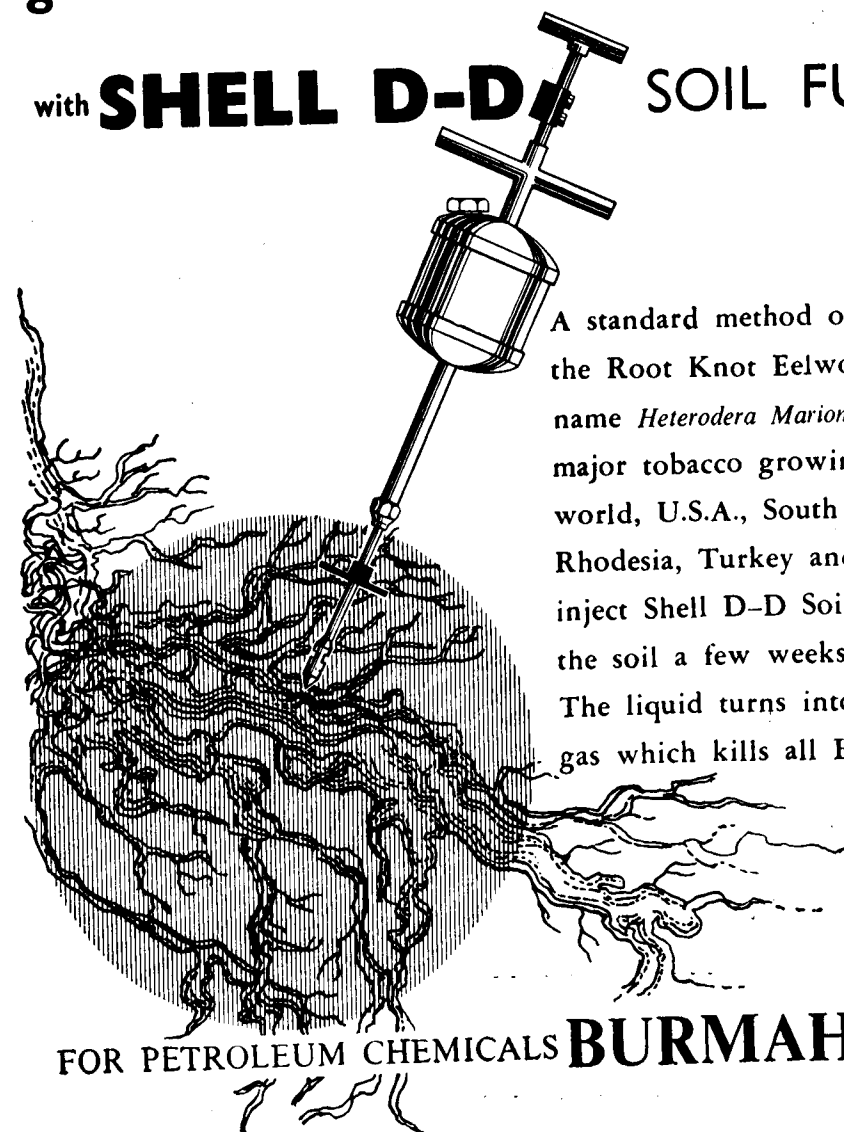
Do not touch or top plants with mosaic disease.



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Chatham

A NEW VARIETY OF CIGARETTE TOBACCO

(Central Tobacco Research Institute, Rajahmundry)

After successful tests at the Central Tobacco Research Institute, and the Cigarette Tobacco Research Sub-Station, Guntur, Chatham, a new variety of cigarette tobacco, was given out for trials to many cultivators and some tobacco associations in 1950-51 and 1951-52. The reports received from cultivators and associations have indicated that Chatham is superior in both quality and yield to Harrison Special. From our own observations and from these reports the general characteristic of Chatham are as follows.



Chatham.

Harrison Special.

1. It gives more yield per acre than Harrison Special because of larger-sized and better-bodied leaves.

2. It matures more uniformly and thus it is possible to pick more leaves per priming.

3. The top leaves of Chatham are larger and also cure better than those of Harrison Special.

4. Experiments conducted at Guntur Station have shown that Chatham responds well to topping and gives significantly higher yields than Harrison Special as shown below.

Yield of cured leaf in pounds per acre.

Year.	Chatham.		Harrison Special.	
	Untopped	Topped	Untopped	Topped
1950-51	784	843	667	781
1951-52	621	702	535	656
1952-53*	966	1311	857	949
Average ...	790	952	686	795

5. In curing it yellows 8-10 hours earlier than Harrison Special.** Higher percentage of bright grades are obtained in Chatham than in Harrison Special.

6. Yellow colour of Chatham is brighter and more uniform.

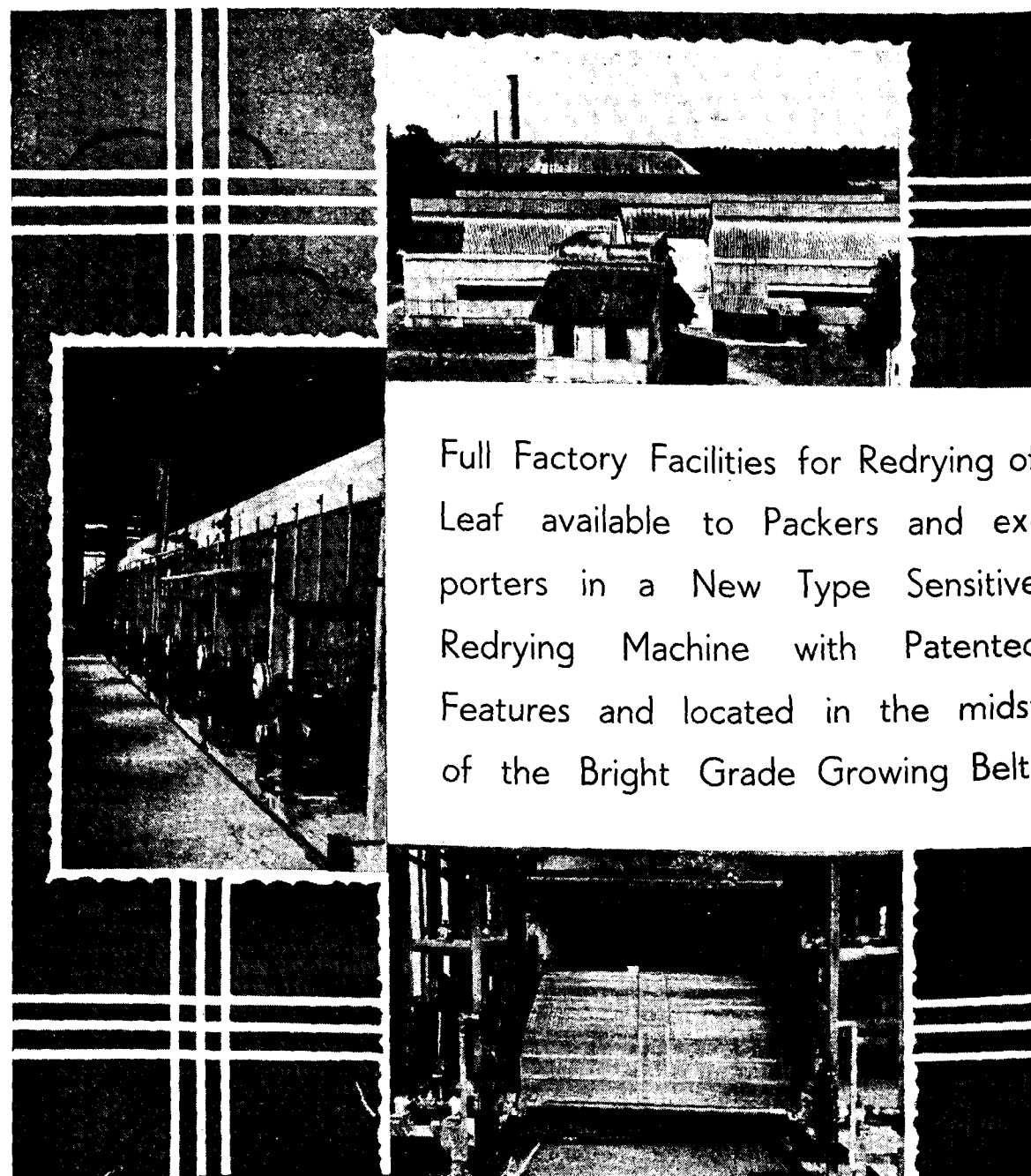
7. Quantity lost as scrap in grading and packing appears to be less in Chatham than in Harrison Special.

* Both varieties were too green during this season and did not give normal yellow grades.

** Because of this difference, leaves of Chatham and Harrison Special should not be mixed and cured in the same barn. Growers interested in testing this variety should therefore grow sufficient areas either alone or in co-operation with other growers so that full barn loads of leaf will be available.

APRIL — JUNE 1955

97



Full Factory Facilities for Redrying of Leaf available to Packers and exporters in a New Type Sensitive Redrying Machine with Patented Features and located in the midst of the Bright Grade Growing Belt.

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Curing of Virginia and Lanka Tobaccos

(Central Tobacco Research Institute, Rajahmundry)

(i) Curing of flue-cured tobacco :

As curing is an important process in the production of good cigarette leaf, an experienced curer is necessary who can carefully handle the leaf. Improved methods in curing have been evolved at the Institute, to improve the quality of leaf as well as to cut down the fuel consumption

One of the primary considerations is the construction of the barn itself. The top ventilator should be adjustable so that the opening can be regulated. In setting the top ventilator, care should be taken to see that it settles properly when closed. The walls of the barns should not have any leakages. The doors and ventilators also should fit tightly when closed to allow minimum leakage. It is better if the doors are made of metal sheets and insulated with plywood, to avoid loss of heat. It is a common practice among the ryots to keep the bottom ventilators below the level of the adjacent area. The bottom ventilators should be at least 6" to 9" above ground level to allow free passage of air. The size of the furnace should be commensurate with size of the barn. The fluepipes should have a gentle and gradual upward slope commencing from the furnace. Usually, the pipes are too abrupt or without any slope at all, resulting in improper distribution of the flues. An experienced curer will be of much help, if engaged at the time of construction of the barn itself. The flues should be tested at the end of each curing for any leakages, and should be properly

pasted with mud before loading the barn. Before the commencement of curing season, it is essential that the barn should be tested for any loss of heat and other defects. It is absolutely necessary to provide each barn with wet and dry bulb thermometers, which cost about Rs. 20/- so that the necessary operations can be done more correctly. The ordinary curometers are not sensitive enough for this purpose.

By a suitable modification of the curing schedule, as recommended by the Institute, the coal consumption can be cut down by about 900 lbs., worth about Rs. 18/- per charge, and the time taken for curing can also be reduced by about a day. The quality of the leaf produced is also better. The details of the schedule already given in our leaflet No. 5 are given below. It should be borne in mind that the barn should never be overloaded, as the loss in many cases is considerable. A single barn should be loaded with 600—650 sticks.



Fig. 1: Loading tobacco barns.

Schedule : FARMER'S METHOD.

INSTITUTE METHOD.

1. *Yellowing* :—Temperature 85° F to 105° F.

Time 30 to 40 hours.

- (a) During the first few hours after loading, barn is closed tightly by sealing with mud all doors and ventilators, furnace not charged.

- (b) Furnace charged after 8-12 hours and temperature gradually raised to 105°F by 2° F or 3° F an hour and allowed to stay until leaf is ready for fixing. Ventilators continue to remain closed.

2. *Fixing colour*:—Temperature 105° F to 125 F.

Time 3 to 9 hours.

Progressive total time 37-47 hours.

Temperature rapidly increased to about 125°F by 4° F to 5° F per hour. Bottom ventilators now opened

wide. Top ventilators also completely raised.

3. *Leaf Drying*:—Temperature 125°F°
to 145°F.

Time 47-79 hours.

Progressive total time 84-120 hours.

Temperature raised very rapidly (4° to 5°F an hour) and maintained at 145°F or so until the lamina is completely dry. Ventilators are left fully open throughout. It is at this stage that coal consumption is greatest in this method.

4. *Stem drying:* Temperature 145° to 165°F.

Time 26-43 hours.

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not more than 1°F to 2°F every hour. Bottom ventilators opened to 5 to 6 inches at the base. Top ventilators raised to a height of 6 to 8 inches from the roof. *It is not necessary to raise the top ventilator completely.*

3. *Leaf drying*.—Temperature. Dry bulb 120°F to 145°F. Wet bulb 90°F to 108°F.

Time 40-51 hours.

Progressive total time 80-100 hours.

Temperature raised less rapidly by not more than 2° to 3°F on hour. When temperature reaches about 125°F to 130°F *first the top ventilators and then the bottom vantilators are begun to be lowered.* Careful watch is kept on the wet and dry bulb thermometer reading throughout this stage. The difference between the dry and wet bulb thermometers are allowed to go on progressively increasing. *In no case should the difference be allowed to fall to less than 15° to 20°F.* If the difference tends to narrow down it can be widened by opening the bottom ventilators temporarily. By the end of about 19 hours it should be possible to close the ventilators completely. The bottom ventilators are also progressively closed in keeping with the top ventilators.

4. *Stem drying*: Temperature Dry bulb 145° to 160°F. Wet bulb 100° to 104°F.

Time 16 to 27:30

123839

Q. 500 008

Progressive total time 127 to 146 hours.

Temperature is raised very rapidly and all the ventilators are closed and sealed.

Progressive total time 100 to 124 hours.

Temperature raised and maintained at a maximum of 160°F until the stem is dry; the ventilators having been already tightly closed during the later part of the leaf drying stage.

A uniform distribution of sticks in the tiers is also necessary so that the circulation of air in the barn is as uniform as possible. This can be adjusted by loading the barn only after the stringing is completed, to have an idea of the number of sticks available.

Please see the two graphs on page 104.

Bulking and Grading:

It is advisable to unload the barn when the leaf is in condition. The leaf has to be bundled in the cool hours of morning and transferred to the bulking room. Bulking will help removal of any light

green tinge left in the leaves and convert it to yellow colour. Care should be taken that the moisture content is not too high, as otherwise mould growth will damage the leaf due to lack of proper aeration. Bulking should be done soon depending on the moisture content of leaf. Direct

TABLE

Agmark Grades	Farmers' Grades	Characteristics.
1)	Y ₁	Bright lemon or bright orange colour. Fine to good in texture, good body, blemish and sponging ranging from nil to 5% of the area.
2)		
3)		
4)		Yellow to light orange, medium texture, good body, blemish or sponging from 10% to 25% of the area. (Included LG likely to lose green colour in a few days)
LG	LMG	Light green, medium texture, good body with light greenish cast with blemishes upto 10% area.
LMG	LBY	Light brownish yellow, fair to mixed in texture, good body with brown patches or scaldings or blemishes upto 25% area.
LBY		
LBY ₂		
DG	DG	Dark green with variable texture, good body with heavy green character.
B)	Brown	Brown, fair to mixed in texture, with brown patches or scaldings or blemishes upto 50%
DB)		
PL	PL	Perished leaf.

spraying of leaf should not be resorted to, to make it pliable as that will spoil the quality of the leaf.

Grading should be done in a separate well lighted shed. Proper grading will fetch maximum returns. The table on pre-page will reveal the relationship between statutory grades fixed by Agricultural Marketing Adviser to Government of India, and the commercial grades as generally recognised by the farmers.

The graded leaf should be baled after grading with noosed gunny covers. The pressing should be uniform and any leaf damaged by mould or excess of moisture should be removed before baling, as the rotting will spread to the other leaves also. It is unwise to sprinkle water on the bales. It will result in quick deterioration in the quality of leaf and should never be done.

At present most of the cultivators sell their leaf soon after grading at the prevailing market rates. They cannot keep back their leaf as the leaf deteriorates in quality before long unless redried. Hence, redrying of cured leaf on a cooperative basis is advised, as the redried leaf will keep for a long time and can be kept back till a better price is assured. The labour involved for stripping and the cost of redrying will be outweighed by the increase in returns. The redried leaf can be kept either in hogsheads or bales with good packing material.

(ii) Curing of Lanka Tobacco:

Leaf of lanka tobacco is cured by air curing. The whole plant is harvested as

such and then each leaf is cut separately along with some portion of stem. It is stitched in bunches of 10-15 leaves and kept on ropes tied in the shed. Bunches are arranged in such a way that there is enough space for free circulation of air. Shed should have slope on eastern and western sides which will prevent sunshine from entering in and damaging the leaf.

When leaf turns to yellowish brown stem is completely dried (generally after 2-2½ months after loading) it should be unloaded and carted to suitable place where pit curing is to be taken up.

Two round pits of equal dimensions should be dug in hard soil. The bottom and sides of the pits should be made smooth and cracks if any closed.

For curing 5 acres of produce (average crop) two pits of 3 ft. height and 8 ft. diameter will be sufficient. The leaf is arranged in one pit in layers and top covered with palmyrah leaf and soil, to make it air tight.

After 24 hours the pit is opened, and leaf transferred to the other pit. The leaf is arranged and covered in same way as previously done. The leaf is left there for 48 hours and then again transferred to first pit where it is kept for 24 hours. If it is seen that proper colour is not developed, the leaf may be left for longer time (48 hours) in the last stage in the pit. The leaf is then removed from the pit and bundled in palmyrah baskets for sale.

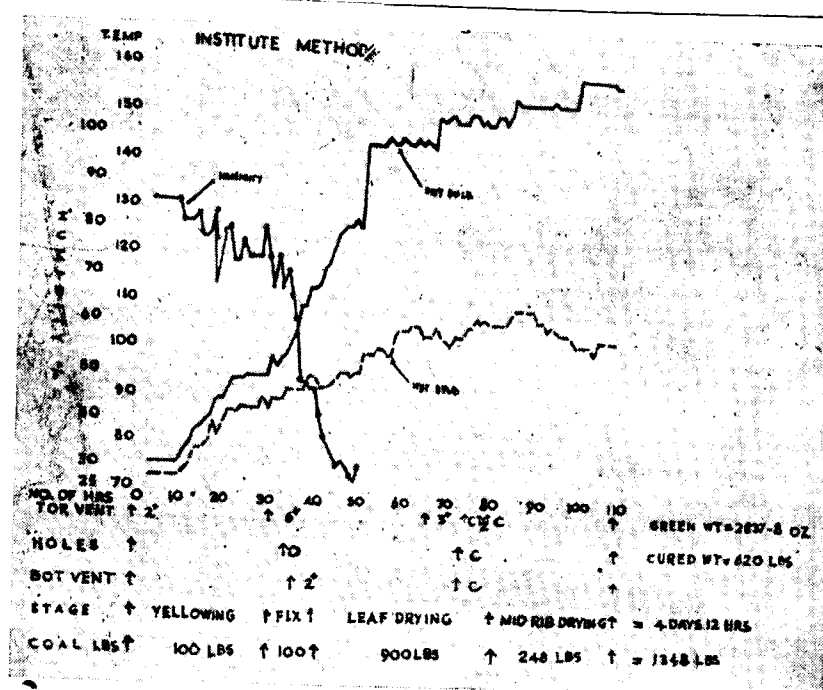


Fig. 2. A graph showing an actual run of the barn by the Institute method. Note the uniform rise of temperature and corresponding reduction in humidity. Compare coal consumption in each phase of curing with the farmer's method. There was a saving of a day by this method.

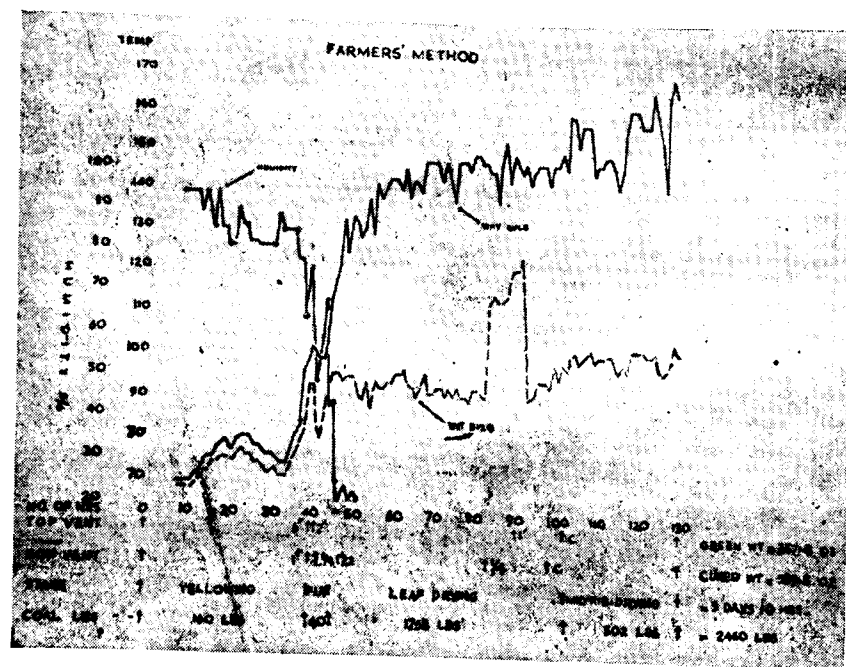


Fig. 3. A graph showing an actual run of barn by the farmer himself. Note a constant variation in temperature throughout the whole period. Note excessive consumption of coal during the leaf and the midrib drying period.

Scientific Notes

Seminar Group at the Central Tobacco Research Institute, Rajahmundry

A seminar group has recently been formed at the Central Tobacco Research Institute, Rajahmundry. Its first meeting was held on 26-4-1955 to discuss the problem of "Quality in Flue-cured Virginia Tobacco." Dr. N. R. Bhat, Director Tobacco Research, presided. Dr. M. S. Patel Secretary, Indian Central Tobacco Committee, Dr. N. S. Reddy of M's. Indian Leaf Tobacco Development Co., Ltd., and Shri Bulusu Gangarayudu Sastry, a prominent Virginia tobacco grower, were present by special invitation. After a few observations by the President about the high value of seminars in modern scientific research and about the importance of the subject proposed for discussion, Dr. N. L. Pal, Plant Physiologist, initiated the seminar.

Dr. Pal pointed out that the question of quality in flue-cured tobacco had been a burning topic of discussion during the last two years, chiefly because of the accumulation of low grade tobacco in the market during 1952-53 and 1953-54. He said that the problem was not a new one. Such tobacco did get accumulated periodically even in past years and that in order to solve the problem, India must produce higher proportion of bright grades and simultaneously create demand for the low grades.

Dr. Pal then described in detail the various factors of quality in flue-cured tobacco, such as size, shape, thickness, texture, elasticity, body, colour, physiological strength, burning quality, nicotine content,

taste, aroma, etc. of the leaf and compared the Indian tobacco with the tobacco of other countries. He drew attention to the general opinion that Indian tobacco possesses good attractive colour, neutral flavour and is fair in combustibility (a point which is sometimes contested) but is thin, lacks texture, body and aroma. According to him the main causes for the difference in quality of Indian flue-cured tobacco from that in other tobaccos were climatic and odaphic factors, the Indian conditions being characterised by high temperature, short photo period and little or no rainfall during the growth period with consequent low humidity and heavy alkaline soils well supplied with minerals though deficient in nitrogen. Dr. Pal observed that yield of high grade leaf could be considerably increased by (i) better methods of cultivation curing and grading of tobacco and (ii) discouraging cultivation in unsuitable regions and soils. To facilitate the second measure, he suggested the survey of the tract. Grading of leaf according to its position on the stalk would also help in improving the quality of the leaf.

Dr. K. G. Tejwani, Pedologist, then presented at length his views on the various aspects of quality in flue-cured tobacco. He dealt in detail with the nutritional requirements of the flue-cured tobacco and indicated that balanced nutrition of the crop is of great importance in maintaining and improving the yield of bright leaf, burning quality and fire-holding capacity of the leaf. He presented data to show that the tobacco grown in saline

lands absorbs large quantities of chlorine and is hygroscopic in nature with the result that it loses colour rapidly and is very poor in burn. He, therefore, suggested that a quick soil survey for demarcating sweet and saline lands with a view to exclude the latter from tobacco cultivation would be of immediate advantage in reducing the production of low quality tobacco. He pointed out the role of potassium in carbohydrate manufacture by the plant and in improving the burn of the leaf and suggested that in spite of the fact that no response in yield or bright leaf is obtained it may be necessary to fertilize the crop with potassium for maintaining the burning quality of leaf or obtaining leaf rich in sugars.

Shri T. Krishnamurty, Agronomist at the Institute felt that emphasis should continue to be laid on colour as before and the real problem was to how to increase the percentage of bright grades. He said that this had not so far been possible through agronomic and manurial treatments. A general discussion followed in which almost all the officers and staff of the Institute took active part. It came out from the discussion that in the interest of all concerned the industry should indicate what exactly is required by them. Dr. N. S. Reddy pointed out that in India the buyers have been so far laying emphasis on bright lemon colour only, because it had generally been found that quality was associated with colour. So much emphasis is not placed on colour in U. S. A. because, ordinarily U.S.A. produces leaf of average good colour. However, recent observations on the Indian produce show that colour is not always associated with other

requirements of quality. The crop suffered often from leaf spot disease, which turned the cured leaf orange. The ash disease was another disturbing factor, particularly on Mysore side. He suggested that all these points may be investigated. Dr. M. S. Patel, Secretary, Indian Central Tobacco Committee, recounted his experiences in the United States of America and said that the chief measure of quality in tobacco is the extent to which the physiological needs for nicotine of the consumer are satisfied by the smoke. Nicotine, sugar, volatile bases, nitrogen fraction and the acids determine the quality of the smoke and the degree of satisfaction which the consumer derives from it. Hence he said that satisfactory chemical composition of the leaf was important for tobacco of good quality. He read out extracts from a talk by W. E. Colwell, an authority on Virginia tobacco to show how difficult the problem of quality was in this crop. He also indicated that under the present economic conditions it may not be possible to grade the leaf according to its positions on the stalk. He stated further that the problem of low grades had been satisfactorily solved through the efforts of the Tobacco Delegation to China and others.

In his concluding remarks, the President (Dr. Bhat) drew attention to the multiplicity of quality factors in flue-cured Virginia tobacco as referred to by various speakers and observed that it was essential to recognise, in addition to colour, at least the more important of them, e.g. texture, body, sugar content, retention of colour and burning capacity of the leaf. The present insistence of the foreign buyers on the satisfactoriness of other factors

as well, though, till recently, their criterion of quality was only colour, is nothing contrary to expectation in view of the present easier and cheaper supplies to United Kingdom from U.S.A. and Rhodesia. Even apart from the point of satisfying foreign buyer, it must be considered that quality factors used to be attended to for meeting the growing internal consumption.

He stated further that it was very essential to undertake comprehensive research on this important aspect with a view to rehabilitating and if possible improving our position as suppliers of flue-cured Virginia tobacco. In doing so, it would be undesirable to rush to conclusions either regarding the satisfactoriness of a new variety like Chatham or about the efficacy or otherwise of manurial treatments merely on the basis of statistical analyses of percentage of bright grades without knowing the status of the other quality factors involved.

Research for promoting quality would, undoubtedly, be difficult. As had been

pointed out, soil and seasons affect quality to a great extent. But, such phenomena, rather than baffling a research worker, should serve as problems for his investigations. Observations, e.g., virgin soils, low lying fields and inundation giving superior quality leaf should provide guidance in finding out as to what it is in them that is conducive to quality. He suggested that efforts should be concentrated in this direction and felt sure that, with patience and perseverance progress is bound to be achieved in promoting quality of flue-cured Virginia tobacco to the benefit of the grower and to the credit of the Research Institute. He concluded by expressing satisfaction at the Andhra State Government's undertaking the extension schemes to train the growers in better methods of raising the crop and of handling and curing the leaf as a measure for promoting quality of Virginia leaf.

On conclusion of the seminar, Shri T. Krishnamurty, Agronomist, was elected the Secretary of the Seminar Group.

Increase your yield of tobacco by closer spacing and higher topping

Cultivators in Bihar plant their hookah and chewing tobaccos with a spacing of 3' x 3' and top at 8 to 10 leaves in addition to 2 to 3 sand leaves which are retained on the plant. Research conducted at the Hookah & Chewing Tobacco Research Station, Pusa shows that higher yields than obtained in farmers' practice may be realised with closer spacing and higher

topping without affecting quality. Planting at 36" x 24" and topping at 14 leaves excluding 2 to 3 sand leaves to be removed at the time of topping has been observed to give at the research station more than double the yield (i.e., 1580 lbs against 782 lbs.) as compared to the yield obtained by farmers' practice.

"Millecel" Astonishes Smokers

One of the first laboratories in the world gives a secret to the makers of cigarettes.

One of the most important American cigarette brands had requested a large laboratory to study for them a new purifying process. The aim of these researches was to find a filter which would stop the smallest particles in the smoke, without however interfering with the aroma of the cigarette. After months of steady work, this perfected filter has become a reality.

In the microscopic cavities of a plastic material as light as the smoke itself,

20,000 air cells filter the smoke one after the other, making it fresh though at the same time preserving that taste which is the joy of all real smokers. This new super-filter is called MILLECEL.

The establishment of Odon Warland have already obtained the right to use MILLECEL in Belgium and in the Grand-Duche under the name of "FILTRE EXTON". It is the Bangle cigarette which has been chosen to benefit immediately of this sensational new discovery.

—Tobacco News

Vitamin-rich milk—Giving shark liver oil to cows

Milch cows and buffaloes milk rich in vitamin A, if shark liver oil is included in the daily feed, research has shown.

Cows get vitamin A in the form of carotene through green fodder. To assure that vitamin A rich milk be produced even in the season when green fodder is not available, feeding shark liver oil is recommended.

Cows and buffaloes fed with ten grams of shark liver oil per day per head along with dry roughage during the dry fodder period gave milk rich in vitamin A content, experiment showed. The flavour of the oil was not noticed in the milk produced.

—ICAR Farm News Release

Compost is a Good Manure—Supplement it With Fertilizers for Good Results

Compost, whether produced on the farm or brought in from town depots, is a good organic manure, and is best applied to the soil at the time of preparatory cultivation.

The dose of the manure to be applied to the fields varies with the intensity of

cultivation, but, generally, ten to twenty cartloads (one cartload is equal to about 1,000 lb. of manure) are found to be adequate per acre of irrigated land. Where rainfall is between 20 and 50 in., four to eight cartloads per acre have been prescribed, and when it is less than 20 in., two cartloads have been found sufficient.

INDIAN TOBACCO

Compost manure is rich in organic matter, but is poor in nitrogen, phosphoric acid and potash. Farmers are advised to supplement it, wherever necessary, with nitrogenous and phosphatic fertilizers.

Where intensively cultivated crops like vegetables, potatoes, rice or sugarcane are

grown, it is profitable to use nitrogenous supplements, such as ammonium sulphate or oil cake.

Compost manure supplemented with extra nitrogen, phosphate and potash gives good results for such fruits as banana, citrus and mango.—ICAR Farm News Release.

OFFICERS UNDER THE INDIAN CENTRAL TOBACCO COMMITTEE

(a) *Secretariat, Madras.*

Dr. M. S. Patel, M.Sc., Ph.D. (N. Carolina)—Secretary.

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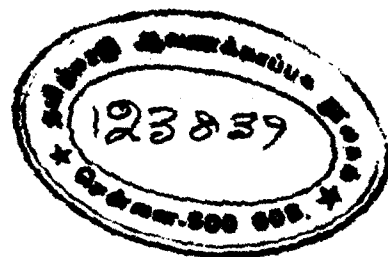
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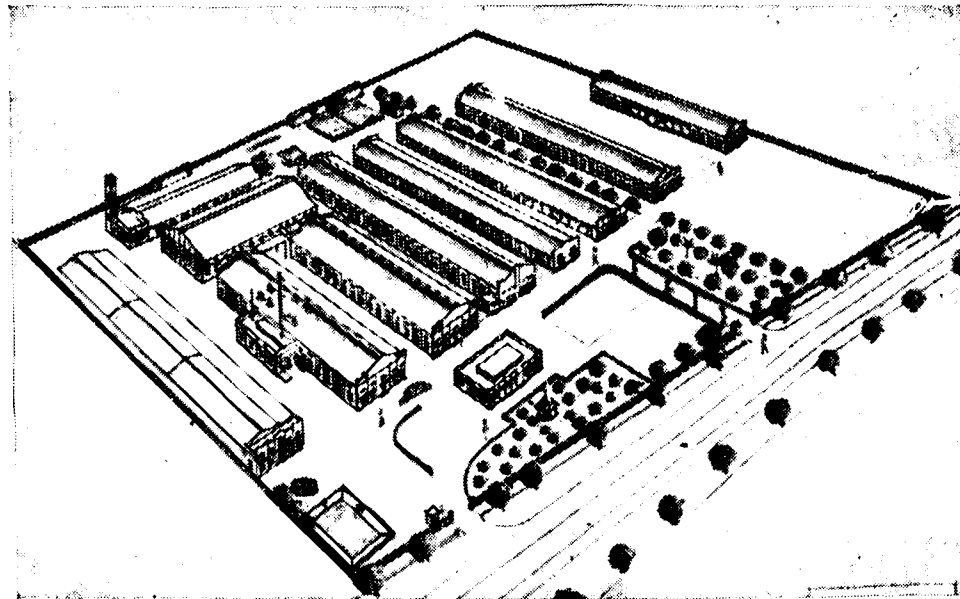
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