

On 29—9—'50 when the first batch of tubers was dug out, the tubers had little sign of sprouting. The control too had not sprouted. When the second batch was lifted after 28 days from burial, the sprouting had already commenced and was fairly well advanced, the sprouts measuring on an average 3 inches. In the control there were just indications of sprouting. The temperature and moisture content of the soil around this period, it will be noted, are comparatively high. The tubers, when dug out after 42 days, had shoots that had just come above ground. In the fourth batch, when the tubers were unearthed, the shoots that came above ground measured on an average 5 inches. There seems to be little loss due to delayed harvest. The quality of the tuber, however, is bound to deteriorate on account of the profuse sprouting if left unharvested at this period for over a month after the haulms have dried up. The average loss of weight due to shrinkage when kept on racks in the store for 2 months during this part of the year is found to be about 10%. This preliminary experiment has to be conducted on a bulk scale under field conditions for confirmatory tests.

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Virginia Tobacco in Madras State

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A notable advance which could be claimed during the past 1½ decades has been the introduction and spread of Virginia tobacco in Guntur, Krishna, East and West Godavari districts. The credit goes to a certain commercial concern which has been the pioneer in the field. The area under Virginia tobacco, which was only 40,000 acres during 1934-'35 has increased to 86,815 acres in 1939-'40 and to 1,34,000 acres during 1948-49. This area represents roughly 90% of the total area under Virginia tobacco in the Indian Dominion. Other improvements consequent on this increase in area in this cigarette tobacco industry were:—

(a) The value of foreign exports increased from 0.63 crores of rupees in 1935-36 to 9.75 crores of rupees, thus forming a large source of foreign exchange.

(b) The number of tobacco flue-curing barns rose from 1599 in 1935 to 16,912 in 1950-'51.

(c) The number of factories for redrying tobacco strips and leaves rose from half a dozen in 1939 with a total capacity of 14,000 lb. per hour to 16 with a total capacity of 39,250 lb. per hour and 5 more with 13,250 lb. capacity per hour are expected to be established in the course of this year.

(d) Increase in the number of cold storage rooms for storing tobacco at 60°F. rose from 3 rooms with a capacity 3 million lb. in 1935 to 11 rooms of 15 million lb. capacity.

(e) Introduction of grading by 'Agmark' system by which 60 to 80 million lbs. are being graded annually.

(f) A tobacco auction floor with capacity to accommodate 1000 bales for auctioning, being the biggest auction floor in the Indian Dominion was opened in January 1951.

(g) Another important milestone in the history of tobacco in India has been the establishment of Indian Central Tobacco Committee by the Government of India in November 1945 to tackle problems of production, research and marketing.

Virginia tobacco was first introduced in the Guntur district and the remarkable increase in area is as shown under :—

*Area in acres*¹

District	1934-35	1939-40	1944-45	1948-49
Guntur	40,000	79,481	67,573	93,818
East Godavari	...	75	8,797	18,281
West Godavari	...	736	12,021	16,239
Krishna	...	5,743	10,680	3,199
Nellore	...	780	478	278
Others	2,502
	40,000	86,815	99,549	134,317

The corresponding production of farm-cured leaf in these years were 30.2 million lb., 72.1 million lb., 74.8 million lb. and 80.5 million lb. respectively.

Supply of tobacco seedlings: At present the seedlings of Harrison Special for Guntur, Krishna, East and West Godavari districts are mostly obtained from commercial nurserymen who raise nurseries (3,782 acres in 1949-'50)² round about Chirala and Bapatla where the soil is light and sandy and favourable for tobacco nurseries. From these two centres, the seedlings are transported to almost the entire area in the above districts. The work done at the Tobacco Research

¹ From Season and Crop Reports of Madras State.

² From Indian Leaf Tobacco Development Company, Chirala.

Station of the Indian Central Tobacco Committee appears to show that seedlings can be raised as well in black cotton soil, provided the required amount of sand viz. half a ton per acre, is added to lighten the soil.

The cost of seedlings varies according to demand during the season from Rs. 5/- to 30/- per 1000 seedlings. There appears to be some scope for issuing purity certificate for private nursery men to have control of distribution of pure seeds.

The Madras Agricultural Department and the Indian Leaf Tobacco Development Company are at present distributing pure seeds of Harrison Special No. 9. The Madras Agricultural Department has a scheme by which pure selfed seeds from Agricultural Research Station, Lam Farm, Guntur, are to be taken and two acres of nurseries raised in the Agricultural College Farm at Bapatla. A special demonstrator is to supply these seedlings to interested growers in Guntur district covering about 60 acres at a nominal cost of Rs. 30/- per 6000 seedlings required to plant an acre. He will also supervise all the various operations during their growth. About 6000 lb. of seeds are estimated to be obtained free of cost for cultivation during the next season. The seeds are to be collected year after year by this method so that a supply of Virginia seeds for maintenance of purity is assured and hybrid growth avoided.

The tobacco crop: The seedlings are transplanted during September, October and November and the crop is harvested during December to February. Farmyard manure (3 tons) and ammonium sulphate (1 cwt) is applied per acre. The yield per acre is more in East and West Godavari districts being 600 to 800 lb. per acre, while the average yield in Guntur is 500—700 lb. The leaves of Rajahmundry area are bigger but the texture of Guntur leaves is better. This may be due to the soils being richer in the former area. At the same time it can be that Guntur soils have become tobacco "sick", having had tobacco grown continuously for 15 years. Experiments at the Rajahmundry Tobacco Research Station shows that the optimum and economic dose of manuring for Virginia is Nitrogen 20 lb. and Phosphorus 50 lb. per acre, in addition to farmyard manure at 5 to 10 tons per acre. Further, it was also found that watering once after 30 days of transplantation and a second irrigation after 50 days gave an increased yield of 825 lbs. Yields of upto 1230 lb. have been recorded at the Research Station. Other important experiments are on spacing and rotation of crops. Among the 20 to 25 varieties tried at the Research Station, the performance of "Chatham" seems to be most encouraging but its popularity with cigarette manufacturers and foreign buyers has yet to be studied.

The present cost of constructing a flue-curing barn is about Rs. 2500, with provision for using coal or firewood as fuel. A new type of aluminium, portable barn has been introduced by a private concern

in Vijiawada and the fuel used is crude oil. The cost of this barn is Rs. 4500/-. The cost of working is slightly more than in coal-burning barns but the main advantage is that the temperature inside the barn is easily controlled and the general management is easier.

Marketing: Flue-cured Virginia tobacco is marketed from January to April. The average annual production is of the order of 100 million lb. of cured leaf for the past 2 or 3 years. Manufacturers, exporters and merchants buy off the top grades (which form about 50% of the production) quickly within a month of the opening of the season. The low grades are purchased during the subsequent months, extending up to April.

It is estimated that 20% of the crop is sold in villages and the remaining 80% sold at what are called "purchase platforms". These platforms are about 43 in number, distributed all over Guntur, Krishna, East and West Godavari districts belonging to three well-established concerns and about eight big tobacco merchants. A farmer gets his cured produce in an non-standardized bale roughly graded as 1.V., 2.V., 3.V. and so on, to one of the platforms of a company. The bales are opened and examined by experienced purchasers of the company and the rate at which his company is prepared to pay for a particular bale is marked on the bale itself. It is optional for the grower to part with his produce at that rate or take it to another platform of another company or to his house or present the same the next day on the same platform. The average prices paid to farmers at the buying platforms during 1951 season by a particular concern were as follows:—

<i>Producers' grade</i>	<i>Price per candy of 500 lbs.</i>	
	Rs.	Rs.
1.V.	650	— 750
2.V.	400	— 645
3.V. (LBy & LBy.)	300	— 400
LG	500	— 600
LMG & DG.	75	— 250
Perished leaf	30	— 60

Auction floors: In January 1951, the Madras Government introduced the auction sale system as an experiment on the lines of U.S.A. and Rhodesian models, in the Guntur area. An area within 5 miles radius from Guntur town covering about 10,000 acres was notified. Under this system a grower within this area has the option to (1) take it outside this area and sell or (2) to enter into a private negotiation with a merchant and settle the price and bring it to auction floor for weighment, (This sale is mostly on credit basis) or (3) to take his produce to the auction floor where an auctioneer appointed by the Guntur District Tobacco

Committee conducts the auction bale by bale. The manufacturers, exporters and merchants bid and a competitive price is realised by the grower. Transactions on the auction floor are strictly on cash basis under special rules and by-laws of the committee, the buyers having to deposit money before coming to the auction.

The tobacco auction floor is the biggest of its kind in India and is a pucca building built at a cost of Rs. 1½ lakhs to keep 1000 bales at a time for conducting auction sales. The highest price in the annals of Guntur tobacco industry was Rs. 750/- per candy of 500 lbs. The prices obtained on the auction floor are usually higher than the rates obtaining outside on the same days.

The following are the transactions on the auction floor since its inception to end of March 1951.

Period	Tobacco sold by auction			By private treaty (within the notified 5-mile radius)		
	Qty. (000 lb.)	Value (Rs. 000)	Average price per lb.	Qty. (000 lb.)	Value (Rs. 000)	Average price per lb.
January 24-1-51 to 31-1-51	23.5	25.7	1-1-6	51	48	0-15-1
February	113.5	131.0	1-1-6	1194	1201	1-0-1
March	31.9	26.8	0-13-8	734	669	0-14-11
Total	174.9	183.5	1-0-2	1979	1918	0-15-4

There seems to be great scope to educate and train the farmers to grade according to Agmark standards or at least near to Agmark standards before bringing their produce to the auction floor. By so doing the growers would get correct value for their goods and the benefits of grading will reach the growers.

All purchases at "purchase platforms" are on cash basis and payment is paid the same or on the next day to growers. Usually the big concerns owning those platforms have either firm orders from the United Kingdom or the Continent or have their own cigarette factories in India. Only about 10 million lb. are said to be purchased by other merchants. 50% of this produce (5 million lb.) is purchased on credit basis and is sent to foreign countries on consignment basis but they get 60 — 80% of the value as advance on presentation of shipping documents. Even the big companies sometimes send on consignment basis if the tobacco

is a low grade type. However, on account of the great demand for tobacco in the continental countries, particularly Russia and Yugoslavia, the low grade stocks of 1944 and 1945 were purchased by Russia in the year 1946. The low grade stocks covering 1947, 1948 and 1949 crops were purchased by Russia and Yugoslavia, to the tune of 8.76 and 6 million b. respectively in 1950 and the value for the same was paid at Guntur itself. Hence there is no problem of stagnation or accumulation of low grade tobacco in the Guntur area.

There is also a system of sending brokers to village and buying tobacco from the ryots, but this is mostly on a credit basis.

The 'Katcha' bales purchased at the platform from ryots are taken to sorting sheds where they are opened. Women labourer sort the leaves into different grades. If the tobacco is going to their own cigarette factories in India the grading is according to their own private grades. Otherwise it is as per "Agmark" grades as F. C. V. 1, 2, 3, 4, LBy, LBy₂, Brown, DB, LG, IMG, DG, and PL. The cost of grading will be 0—1—3 to 0—1—6 per lb. The graded leaves are pressed into loose bales in hand-operated presses and sent by lorries, boats or bullock carts to redrying factories. Here the leaves are "stemmed" i. e. the midrib is removed by women labourers. Stemming charges work out to 0—1—3 to 0—1—6 per lb. The strips (stemmed leaves) are passed through the redrying plant, where it passes through drying chambers at about 160°F and then cooling chambers and then reaches the reordering compartment, where there is moist air at 130°F. The tobacco takes up the correct amount of moisture of about 10% and passes out of the plant properly conditioned. Redried tobacco has a better keeping quality. There are 16 redrying factories for the entire area with capacities varying from 750 lb. to 3,500 lb. per hour. The present cost of erection of a redrying plant will be as follows:—

	For 3,500 lb. capacity Rs.	For 2,750 lb. capacity Rs.
Cost of plant	... 2,70,000	1,50,000
Cost of building	... 5,30,000	3,50,000
Cost of land and acquisition	... 2,00,000	
Auxiliaries	... 1,50,000	1,00,000
...	... 11,50,000	6,00,000

The redrying charges will be 0—1—0 to 0—1—3 per lb.

The tobacco is then packed in bales of 250 lb. net or in deal-wood cases of 350 lb. net. The present cost of packing comes to Rs. 6—0—0 and Rs. 20—0—0 respectively and these packages are now ready for export. It is now that bales are examined one by one and "Agmark" labels given.

The average number of labourers engaged per day during the season is of the order of 35,000 for the whole area for grading stemming, redrying and stocking operations. This does not include the number employed in the flue-curing barns which may be of the order of 75,000 persons per day on an average. It would not out of place to mention here that the arrangements made by Indian Leaf Tobacco Development Company, Chirala for labour are noteworthy. The facilities offered in the form of dispensaries, creches, rest places and canteens inside the factory premises can serve as a model for other factory labour managements.

The tobacco stems (midribs) derived from stemming operations are put to different uses, such as :—

- (1) As manure for seed nurseries.
- (2) Stems are flattened under rollers and blended in the manufacture of cheap cigarettes.
- (3) Exported to Hongkong, Amsterdam.

The tobacco seed oil is in demand in the United Kingdom for manufacture of paints. The price per imperial maund seed in 1949 was from Rs. 6/- to 9/- while the price of oil per maund ranged from Rs. 46/- to 47/- and about 1000 tons of oil was exported to United Kingdom the same year. The price of oil cake was Rs. 3—4—0 per maund and this was used as manure.

"Agmark" Grading: To have a control over the quality of tobacco exported, Government of India in 1945, made it compulsory to grade and mark tobacco under tobacco grading and marking rules for export of Indian tobacco to foreign countries. The inspectorate staff consisting of one Chief Inspector, one Senior Inspector, 2 Vigilance Inspectors and 16 Inspectors work under the control of the Agricultural Marketing Adviser. Each bale or package packed for export is examined, free of charge for the exporter, and Agmark labels are issued according to the grades assessed. In order to ensure a proper check the Chief Inspector and the Vigilance Inspectors carry out surprise checks at the packing centres, redrying factories and ports of shipment.

During 1949 there were 273 parties authorised to "Agmark" tobacco and the progress of grading was as under ¹ :—

Varieties of tobacco	In million lb. 1949	Value in crores of Rs.
Flue-cured virginia	64.5	7.21
Sun-cured virginia	2.1	0.10
White Burley	2.2	0.14
Sun-cured country tobacco	8.3	0.47
Jutty	2.8	0.06
Top leaf		
Stems	1.1	small
Total	81.0	7.98

The Agmark grading has increased the confidence of foreign buyers who now advance 80 — 100 percent of value on presentation of shipping documents and firm orders are also being received on Agmark basis. This in itself is no small measure of achievement. Continental manufacturers do not seek now the aid of London or Continental brokers. Even in the local market, trade is carried out on the Agmark system. Local banks and agencies give now more recognition for advancing money on the pledge of "Agmarked" bales.

In this connection it will be interesting to know that price difference between grades obtained after inception of tobacco grades is more uniform than in the earlier periods as shown in graph I in which prices realised in pence F. O. B. Madras by an average Indian shipper for redried strips for grades 1 to 4 are illustrated.

Exports: The following table gives an idea of the position of Madras State in the foreign trade of raw tobacco ² :

	Exports in million lb.					Imports in million lb.				
	1945 -'46	1946 -'47	1947 -'48	1948 -'49	1949 -'50	1945 -'46	1946 -'47	1947 -'48	1948 -'49	1949 -'50
Total raw tobacco to foreign countries	12.7	63.2	43.6	43.2	72.3	Nil	small	3.0	2.4	2.2

The exports in the year 1949-50 reached the highest level of 72.3 million lb. as illustrated in Graph II. The following were the principal countries to which the exports were made, viz. United Kingdom 45.6 million lb. Netherlands 4.04, Belgium 3.2, China 1.6, Hongkong 4.0.

¹ From "Indian Tobacco" January 1951.

² From Sea Customs Statistical Department.

This includes a small quantity of country tobacco. Thus exports to the United Kingdom form nearly 63% of the total quantity exported. A study of the United Kingdom market during 1949-50 will reveal that she purchased from India during June—July season of 1949-50 only 14.4 of her total requirements of flue-cured tobacco:

*Imports into the United Kingdom*¹ (1949—50 June to July)

	Stripped	Unstripped	Total
<i>Flue-cured</i> : Southern Rhodesia ...	12	35	47
India ...	31	8	39
Canada ...	—	14	14
U. S. A. ...	3	156	159
Others ...	—	5	5
Total flue-cured ...	46	218	264
	Stripped	Unstripped	Total
<i>Other types</i> : Nyasaland ...	5	9	14
India ...	8	—	8
Turkey ...	—	14	14
U. S. A. ...	—	3	3
Others ...	1	5	6
Total ...	14	31	45
Total of all types ...	60	249	309

The above figures also reveal that the imports from India are mostly stripped, while other countries export only leaves (without stemming). The quality of our tobacco is said to be almost equal to that of Southern Rhodesia in texture, flavour and colour, but inferior to American tobacco. Our tobacco is said to blend very well with American tobaccos in the manufacture of cigarettes. In order to extend our export market, the quality of leaf as well as processing methods have therefore to be improved.

Madras State exports appreciable quantities of raw tobacco to other Indian States also both by rail and by sea. The exports include both Virginia as well as country tobacco, while imports of 'bidi' tobacco from Bombay and Mysore are also noted.

¹ From "Tobacco Intelligence" of Commonwealth Economic Committee, August 1950.

The tobacco consigned to other States in India are mostly for cigarette manufacture. The tobacco is said to be kept in storage for two years, for "maturing" before being used by cigarette manufacturers. There are about 22 cigarette factories in India. Almost all the brands of cigarettes in the market to-day are manufactured in India itself. Some cigarettes are even exported to important countries like Australia, Ceylon and Malaya. During 1949; 21,822 million cigarettes were produced in India¹. The most popular of the brands manufactured in India are, "Craven A", "Players", "Gold Flake", "Scissors", "Passing Show", "Number Ten", "Carlton's type" etc. It is said that in high-grade cigarettes 70—80% of American tobacco, is used for blending. medium grade cigarettes contain 30% American tobacco, 10% suncured Virginia and the rest flue-cured Virginia, while 10—70% country tobacco or sun-cured Virginia and the rest flue-cured Virginia are used for low grade cigarettes. Burley type is used for pipe mixtures.

The paper used for cigarettes is imported from America, United Kingdom, France, Japan, etc. A cigarette paper manufacturing factory was opened at Calcutta on 6—3—1951 by Shri Hari Krishna Mehtab, Minister for Commerce and Industry. First of its kind in India, the mill is designed to produce 240 tons of cigarette paper per month. 100 tons would be used for India's consumption and the rest would be exported, to enable India to earn foreign exchange for a crore of rupees. The cost of erection of the mill was Rs. 2.27 crores. Mr. Mehtab said "Although the consumption of cigarettes might be condemned in public speeches from the moral point of view, in reality the number of smokers was increasing. The country therefore needs manufacture of more cigarettes." The trend of demand for high grade and costly cigarettes is downward.

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¹ Indian Trade Bulletin, 1st September 1950.