

Sugarcane crop, its past, present and future in relation to Noyyal valley.

(Continued from page 264 of October Issue.)

Manuring during the growth of crop. It has been already said that in this tract sheep-penning at ten thousand sheep per acre as a preliminary planting of cane was a rule in the past. But this practice has been practically given up in wet lands at present. The solitary instances of wet land ryots who yet have recourse to this practice, will be only exceptions to the rule. The ryots neither give any other manure in its stead. They only apply 6 to 8 cart loads of Kolingi leaf carted from hills and costing Rs. 7 to 8 per cart load, as top dressing when the crop is 3 to 4 months old. Some apply groundnut cake in place of Kolinji leaf at 60 maunds or 1,500 lbs per acre costing about Rs. 40 to 50. While the actual quantity of Nitrogen utilised by a sugarcane crop from the soil has been calculated to be about 100 lbs, the experiments conducted at Manjiri Farm show that at least 350 lbs of Nitrogen is required to be applied to the soil to give a full crop. I have personal knowledge of ryots around Manjiri near Poona having got very heavy yields of jaggery by heavy manuring and I feel quite sure that by application of more manure than is now done by ryots better yields can be obtained, and that the extra expenditure on manure will be more than compensated by the additional yield. Sugarcane crop is one that readily responds to heavy manuring. Economy requires that a manure which is both cheap and good should be looked for. The one manure which fulfils the condition is the green manure. This system of manuring, supplies Nitrogen on the one hand and improves the physical properties of the soil on the other. No system of manuring is therefore economical, unless green manuring forms part of it.

Varieties of canes. The varieties of canes met with in Singanallur and other near villages are (1) Poovan or Rastali (2) Vellai (3) Kaludai Boodan (4) Namam (5) Karun or Shenkarumbu (6) Chittanai. But the main variety that is now cultivated is Poovan and

other varieties are found mixed with it. In Sular, Kaludai boodan is preferred owing to its hard rind, and the mixtures found here are Namam and Vellai.

About 80 years ago, the chief varieties of cane cultivated in this tract are said to have been Karun Karumbu and Chitta nanal, so far as it can be ascertained from the oldest people living here. The former is a dark red cane of middling thickness and the latter a thin hardy variety. In about the year 1840, the Government introduced a new Mauritius variety in all the cane growing tracts of the Coimbatore district. The people called this variety Vellai or Rastali because of its white rind. This variety became gradually popular with the ryots on account of its better yield both in quantity and quality—until at last it became the chief variety grown, while its predecessors Karun karumbu and Chitta nanal only formed mixtures. The Vellai continued as the main variety for nearly 40 years, and thereafter gave its place to Poovan, in the Noyyal valley, while Vellai still continues to be the main variety in the Amaravathi valley. The causes that led to the displacement of vellai by Poovan in the Noyyal Valley as given by the ryots are conflicting. There are no other sources from which more accurate information could be obtained. The different versions of the ryots are:—(1) That the Vellai crop suffered seriously from an attack of small worms eating away the root system—which resulted in complete or partial failure of the crop—while the minor varieties which formed the mixture were affected to a much less extent.

(2) Degeneration of the Vellai cane in course of time.

(3) That Vellai required more water, more manure, and better attention. That it could not withstand any delay or withholding of even one or two of the necessary number of irrigations, that a little neglect was attended with short outturn—while the cultivation of other varieties was far easier owing to their more hardy character.

The first version has to be rejected on the ground that the worms spoken of by the ryots could not have made any difference between Vellai roots and roots of other varieties for common found in the havoc on, while both were growing in the same field.

numbers 2 and 3 are within the bounds of probabilities. Good varieties of canes require systematic cultivation and systematic irrigation—unlike inferior varieties which mostly happen to be also more hardy ones comparatively. Good varieties deteriorate under neglected cultivation, deficient manuring or deficient irrigation. While the versions number 2 and 3 are accepted, it implies that there must be some difference between the Noyyal valley and the Amaravathi valley in some main conditions, as in the latter Valley, the vellai canes have prospered and yet continue to be the variety of main importance. The difference in their conditions lies in the fact that Amaravathi valley is a more fertile tract with more certainty of water supply from the tanks almost throughout the year, while the water supply in tanks of the Noyyal valley is uncertain, and limited. From the above differences, it may be inferred that the Vellai variety might have received better attention in the Amaravathi valley than in the Noyyal—with the result that that variety prospered in the former and deteriorated in the latter.

Poovan is presumably an indigenous variety and no accurate data are available as to whence it was introduced. The ryots say that it was a variety of cane found growing in mixture in the Vellai crops which was least affected by the attack; and that a certain ryot picked it up and grew it. The better success of this ryot induced the other ryots to copy him until at last the Poovan became the main variety of cane grown in the Noyyal valley.

Introductions from time to time of new varieties with higher sucrose contents and suitable to local conditions, may immensely contribute to a better future of the sugarcane crop. In this connection, may be mentioned, the introduction of new sugarcane cultivation. In the year 1900, a number of Mauritius cane varieties were said to be contributed to ryots by the Government in the Vizagapatam district. These varieties seem to have got both badly mixed and deteriorated of time in the hands of cultivators owing to indifferent cultivation. The then Government Botanist picked these up and transferred them to the Samalkot Farm for proper cultivation and such of them as he found to be the best were

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distributed to the ryots and it is these that practically ousted the indigenous varieties in Circars. Introduction of red Mauritius—a heavy yielding variety on the West Coast by the Agricultural Department is resulting in the extension of sugarcane in that tract.

But it is expected that new varieties introduced, may after a long time, get deteriorated. Change of seed or change of varieties may therefore become necessary from time to time. A cane breeding station may therefore be of very immense value for evolving and supplying new useful varieties. B-147 is becoming more prominent in its sucrose contents as well as in the capacity of yield per acre, as seen from the results obtained both in Taliparamba and Palur Farms. It would appear that this when distributed to ryots may get into their favour as much as red Mauritius.

Diseases and damages. There is not much of the common diseases seen in the cane crops in this tract at present. The root worms which did much damage to Vellai crops in the past have already been referred to. White ant damage is not much in evidence, as the lands where cane is cultivated in this tract are almost all black loamy soils. Jackals do a certain amount of damage but thorny fences put up around canefields minimise the damage. In this connection it may be here mentioned that the laying of the fences with thorns and twigs, though cheaper in its initial outlay is not so in the long run. This fence costs the ryots Rs. 25 to 30 per acre while it is not so effective as the wire fence, nor is lasting, quarter as much as the latter. The ryots of this tract do well to put up wire fencing 6' high round their cane fields at a cost of Rs. 75 per acre. This material, if well handled, will last to the ryots at least 5 or 6 years. The annual expenditure on fencing would in this case then, be reduced to Rs. 15 per annum while it is at least Rs. 25 at present. The wire fence is therefore not only cheaper but also more effective as a barrier to jackals than the thorny fence of the present, the materials of which, cannot last from one year to another.

One thing that is causing alarm to sugarcane cultivators, is common with the betel vine cultivators, is the earth worm found in the

soil in swarms. The ryots state that the earth worms do damage to the roots of young canes and vines. One or two fields are left uncultivated with these crops this year on this account. While the garden lands are free from earth worms, the wet lands have them in large numbers. Even among the wet lands, such fields as are kept in wet condition for larger periods are more subject to this phenomenon than other wet lands. The remedy seems to lie in cultivating these lands with some other crop than betel vine or cane for an year or two, and in the interval between crops to expose the land to the action of the sun after deep ploughing.

Yield. The yield of raw sugar per acre varies in different tracts of the Presidency depending on richness of soil, manner of cultivation, quantities of manures given, water supply etc. An idea may be formed of the variations in the yields in some of the parts of the Presidency, from the figures given below :—

District.	Average yield.
Godavery ...	10,000 lbs.
Coimbatore (Noyyal valley)	7,500 „
South Arcot ...	4,000 „
Vizagapatam ...	10,000 „
Ganjam ...	4,000 „
Bellary ...	5,000 „
Cuddapah ...	6,000 „
Kurnool ...	5,000 „
South Canara ...	3,000 „
Anantapur (Hindupur)...	8,000 „

In Singanallur an yield of 40 pothies (10,000 lbs.) is considered a good yield and 30 pothies or 7,500 lbs. an average yield. The oldest ryots of this village state that about 30 years ago, the average yield was about 20 pothies or 5,000 lbs. per acre. This statement is borne out by the figure of yield mentioned in Coimbatore District Manual—which refers to some year about 1885, that is about 30 years ago. The rise in yield by about 50% in these lands in the course of 30 years may be owing to the following causes :—

(1) The crushing in the past was being done in a wooden mill, which extracted less juice. The iron mill made its appearance some time near the year 1885.

(2) In the past the manure resorted to was only the penning of sheep before planting. Now the practice is to apply green leaf or kolingi at 6 to 8 cart loads per acre as a top dressing as already said. The extension and popularity of betel vine cultivation which crop is cultivated here in rotation with sugarcane with heavy manuring might also have much to do in enriching the soil in organic matter. The kolingi leaf carted year after year for application to sugarcane crop, must have also contributed to the richness of soil.

(3) The periodical carting of tank silt—must have also contributed towards the same thing.

Although the yield is slowly rising and the prices too, to some extent, yet the sugarcane cultivation is becoming less popular and the area under that crop is on the decrease as will be seen from the following statistics which relate to some of the important sugarcane growing villages of the Coimbatore Taluk.

Villages.	Area under sugarcane in acres.				
	Fasli	1320	1321	1322	*1323 or 1914-15
Singanallur	...	585	608	500	374
Uppilipalayam	...	192	215	148	77
Kuniamputhur	...	347	492	247	218
Kurichi	...	108	159	78	58
Kumarpalayam	...	133	150	32	18
Sircar Samakulam	...	102	102	69	81
Vellakinar	...	148	141	72	118
Agrar Samakulam	...	83	108	91	100
Thudiyaloor	...	23	56	6	59
		Total...1721	2031	1263	1103

* This is an extract from the report of the Tahsildar of Coimbatore Taluk.

This anomaly can be explained by the following :—

(1) The rise in price of raw sugar has not kept pace with the rise in prices of other agricultural products owing to the imports of cheap sugar from foreign countries.

(2) The cost of production is high and getting also higher owing to the general rise in wages for labour, value of manure, rent of land etc.,

In other words the cost of production is high and the prices obtained are not quite adequate. It is no wonder then that cane cultivation is becoming less popular. To add to it there is the cotton which owing to its demand from foreign countries, has risen very much in value and its cost of production is at the same time less. The cultivation of this crop leaves therefore a good margin of profit. Compare the following cost of production of sugarcane and its profits with the same details for the Cambodia cotton crop given below.

<i>Cost of cultivation of sugar-cane crop in wet land in Singanallur.</i>	<i>Same in garden in Uppilipalayam.</i>	<i>Cost of cultivation of Cambodia cotton in garden in Uppilipalayam.</i>
Preparatory cultivation	13—0—0	13—0—0
30,000 sets	45—0—0	45—0—0
Planting, weeding and hoeing	22—0—0	22—0—0
8 cart loads of kolingi leaf and its application	70—0—0	120—0—0
	<i>leaf manure sheep.</i>	
Fencing	25—0—0	25—0—0
Cost of labour for irrigation	75—0—0	100—0—0
Harvesting, milling and preparing jaggery	105—0—0	87—0—0
Assessment	10—0—0	2—0—0
Total...	365—0—0	414—0—0
		Ploughing 4—0—0
		Sowing and beds making 2—8—0
		Seed 1—0—0
		Irrigation 8—0—0
		2 weedings 2—8—0
		2 hoeings 4—0—0
		Manure 25—0—0
		Picking (paid in kind)
		Assessment 2—0—0
		say 49—0—0
		50—0—0

Value of average yield in wetlands 30 pothies at Rs. 18 per pothi	540—0—0		
Value of average yield in gardens 25 pothies at Rs. 18 per pothi		450—0—0	
Value of 5 pothies of cotton at Rs. 30 per pothi			150—0—0
Profits	<u>175—0—0</u>	<u>36—0—0</u>	<u>100—0—0</u>

From the above estimates, it would appear that where a capital of nearly Rs. 400 has been spent in cultivation of sugarcane, the ryots get a profit of Rs. 175 in the case of wet land, but the profit reduces itself to Rs. 36 in the case of garden land owing to the extra expense of raising water and additional manure required for it and less outturn of jaggery obtained in the garden land in the Singanallur conditions. In the case of Cambodia cotton the ryot gets a profit of Rs. 100 per acre when he spends only Rs. 50. From the above facts it will be to some extent clear as to why the sugarcane cultivation is getting out of favour of garden ryots. In the garden lands of Uppilpalayam and Singanallur, where sugarcane was formerly being cultivated, one can hardly see any sugarcane at present. The place of sugarcane in garden lands has now been taken by Cambodia cotton. The sugarcane therefore is now practically confined to wet lands only. Even here, the sugarcane is not so popular as it was in the past. The ryots in Singanallur and Sular all state that the area under that crop in wet lands is yearly becoming less and less. A large amount required for the working expenses during the growth of the crop is a dissuading factor. But the redeeming feature in the sugarcane cultivation is that it keeps a large number of labourers engaged. It is owing to this fact, the cultivation of canes in wet lands is partly in the hands of tenants who take up land on lease paying rent of Rs. 75 to 100 per acre. The rent per acre for sugarcane cultivation was till the last year or the year before Rs. 100 and sometimes more. The rent has fallen now to Rs. 75 per year per acre. This in itself is enough evidence of the cane cultivation loosing its popularity by degrees.

The wet land ryot sometimes prefers to grow a paddy crop and a Chitrai cholam crop with far less trouble and far less working expenses than required for sugarcane crop. The prices of jaggery are fluctuating. The risk of loss in case of the fall in price of jaggery is another point for consideration for the ryot who by habit is shy of speculation. The fluctuations in prices of jaggery are owing to local demand in relation to its supply. Higher prices in one year are followed by larger production in the next, the inevitable result of which is a fall in prices. But the sugar market only controls the maximum limit to which the price of jaggery can rise or in other words, if price of jaggery rises and approaches that of sugar, the major portion of its previous demand will divert to sugar as the better of the two and price of jaggery then is bound to fall for want of demand. The above remarks refer to pre-war period. Now owing to the war, sugar from Germany and Austria has stopped, consequently the price of sugar has risen by 33% already. Owing to this, I expect a portion of demand for sugar will divert to jaggery whose price will consequently rise, and I am confident that the area under cane in the next year may therefore become larger.

M. MANGESA RAO.

(To be continued.)

Green Manures for paddy on the West Coast (Daincha and Cow gram).

In Calendars published by this Department a good deal has been written about green manures. The importance of the subject amply justifies its repetition in this Journal. It must be admitted that the value of green manure for crops on wet and garden lands was well known to the ryots long before the advent of the Agricultural Department. This is evident from the general practice of applying green leaves both for such garden crops as sugarcanes, betel vines, cocoanuts, arecanuts, ginger etc., and for paddy on wet land. It is also commonly known to ryots that a cereal crop after a pulse grows much better than a cereal