https://doi.org/10.29321/MAJ.10.A03791

Sugarcane Development in Madras State for Maximising Production*

by

J. THULJARAM RAO[1]

The State of Madras is happily situated climatically with regard to the growth of sugarcane and excepting in the hilly district of the Nilgiris, sugarcane is being grown in all the other districts. The heavy concentration of area is in the districts of South Arcot, North Arcot, Tiruchirapalli and Coimbatore. There is a slight climatic disadvantage for the State from the point of recovery of sugar and jaggery. The temperature during the ripening period is not low enough for the cane to cease its vegetative growth and divert its energies for the accumulation of sugar. Thus, given similar conditions, the State of Maharashtra and the northern parts of Mysore and Andhra Pradesh have an advantage over Madras from the climatic point of view for higher recovery. It is thus essential that the slight disadvantage in the lower recovery should be made up by higher yields through varieties, fertilisation, irrigation and other cultural practices, thereby producing maximum of sugar/jaggery per acre.

The area under sugarcane in the State is 2·3 lakhs acres. The average yield of cane per acre for the State has been computed at 31·3 tonnes per acre and the recovery 9·2 per cent cane. The total production of cane is nearly 60,00,000 tonnes of which about 23 per cent is utilised for white sugar production and about 67 per cent for jaggery.

Development work has thus to be catered both to the white sugar and jaggery areas for maximisation of production. The choice of the basic material, variety, may have to be different for the two categories in the matter of fibre content, reducing sugars, etc. Naturally, the items of development work would vary in proportion with the tract and soil and climatic conditions. Broadly, the development pattern will have to be different for (1) the coastal area mainly in the South Arcot district; (2) the Vadapathimangalam factory area with its drought and waterlogged conditions; (3) the canal irrigated areas in Tiruchirapalli and Coimbatore districts and (4) the well irrigated areas, mainly in Coimbatore and Salem districts. The varietal picture and cultural practices will have to vary in the

---

* Paper presented to the Agricultural Seminar on "Maximisation of Production" held on 19th and 20th February 1966 at the Agricultural College and Research Institute, Coimbatore.

[1] Director, Sugarcane Breeding Institute, Coimbatore.

Received on 23—2—1966.

four tracts and this naturally has to be taken into account in any intensified development programme for maximising production. It has also to be pointed out that for future development programme, the best suited areas would be the districts of Coimbatore, North Arcot, and Tiruchirapalli.

The most important factor in development work is naturally the variety which is the pivot round which the cane crop revolves. In this, the State has been in a happy position during the last two decades with the cultivation of Co. 419. This variety is a very heavy yielder, rather late in maturity and profuse in flowering. The disadvantage of propensity to heavy flowering and late maturity has been skilfully got over by spreading the planting time in some of the districts. In Coimbatore and Tiruchirapalli, there are mainly two seasons of planting. The January—February planted crop is fit for crushing from December to March and the July—August planted crop is fit for harvest from August to November. Thus, the question of varieties with varying periods of maturity has not seriously affected the recovery curve in the State except in South Arcot district.

The coastal district of South Arcot stands on an isolated footing from the rest of the sugarcane areas in the State due to the sandy nature of the soil and the late monsoon rains because of which there is considerable drop in recovery. The sandy nature of the soil has brought with it the problems of wilt and recently nematode as well. Varieties which normally do well in the other parts of the State may not necessarily be good for this area. At the moment, the varieties Co. 658 and Co. 785 are the main varieties in cultivation. Co. 419 apparently has failed in the area which is an entirely white sugar belt. The main problem in the maximisation of production for this area is the evolving of varieties suitable for the area. Understanding this position during the last three years, there has been a co-ordinated programme between the State Department of Agriculture and the Sugarcane Breeding Institute, Coimbatore in a "location testing" programme by trial of a large number of seedlings in the factory area and at the Research Station, Cuddalore. This would be one of the surest means of evolving a suitable variety in minimum time.

Likewise, for the problem area at Vadapathimangalam wherein drought during summer and waterlogging during monsoon are the important factors, location test with over 10,000 seedlings has resulted in isolating a variety with built-in resistance to waterlogging and quite satisfactory performance with regard to yield and quality. This variety would specially suit the tract, thereby increasing the output of sugar.

In the districts of Tiruchirapalli, North Arcot and Coimbatore, the heavily concentrated areas from the point of sugarcane, Co. 419 has been doing well all along both in the lighter garden land soils and the heavier clayey soils. However, of late, considerable evidence of grassy shoot disease and iron chlorosis has been noticed in the variety in Coimbatore and Avanashi taluks of Coimbatore district in lighter soils as also elsewhere. Newer varieties have also been evolved which conveniently take the place of Co. 419. Among the new varieties, mention may be made of Co. 658, Co. 740 and Co. 997. Co. 658 is already in large scale cultivation in South Arcot district as an early ripener. Co. 997, an early ripening rich variety, would be very suitable for January—February planting and harvest in November. It is a very shy flowerer and hence suitable for February planting. Co. 740 would be an ideal variety for July—August planting and harvest at 12–14 months.

One of the important items of development work with regard to varieties is the rapid multiplication of a new variety to saturate an area in minimum time. The short crop method of rapid propagation, wherein the rate of multiplication can be to a maximum of 100 times, can be done. For this purpose, seed farms of suitable area may be had in each tract and the concerned variety for the tract, when released from the Research station, multiplied rapidly.

The programme of seed nursery which is already being followed in the State has to be intensified and adopted in a more scientific manner. Virus diseases like Ratoon Stunting Disease, Grassy Shoot *etc* are becoming increasingly common and it has been estimated that the Ratoon Stunting Disease can cause considerable reduction in yield. Hot water or hot air treatment of nursery seed material should be a "must" for prevention of some of the diseases spreading through seed material. Such seed material is said to be free from the disease for 3–5 years and a suitable programme of change over of seed material with the cultivators once in five years can be drawn up whereby new and healthy seed material is continuously saturated in an area once in five years. The seed nursery should be adequately fertilised with potassic fertilisers which is said to help in resistance to pests and diseases. This would be one of the surest ways of maintaining healthy, well nourished crops with the growers with all its advantages in the matter of yield of cane and sugar.

The cultivators of sugarcane in the State in general are highly fertiliser conscious and are willing to apply fertilisers provided they get the fertilisers. Increased fertilisation would mean more of irrigation. Irrigation facilities are particularly lacking in Salem district and in Avanashi taluk of

Coimbatore district. These two areas are potentially good for sugarcane and if irrigation facilities are provided, sugarcane cultivation should thrive well. In certain canal areas like Amaravathi, the closure of canals creates considerable difficulty for sugarcane.

There is need to undertake more of propaganda and development work with regard to green manuring and its beneficial effects for a crop like sugarcane which exhausts the soil. In tropical areas like Madras, the organic matter is depleted rapidly due to the sun and the sugarcane crop also depletes the soil. In addition, growers normally take at least two ratoons. Since the soil engages the crop for nearly three years, the need for organic manure needs hardly any emphasis. Seeds of green manure should be made available to growers when needed. It would be useful to supply seeds inoculated with bacterial cultures for deriving the maximum advantage.

While propaganda regarding improved seed, fertilisers, irrigation and pesticides form the normal routine, the scientific aspects of sugarcane growing for achieving maximum production has to be brought home to the growers through pamphlets, exhibits, talks, slides, *etc.* Among the more important of the scientific truths needing publicity are:

1. The fertilisation of the crop before four months age and when most needed by the crop, *viz.*, the tillering phase and the grand period of growth.

2. Trash mulching especially in areas of water scarcity to conserve soil moisture, suppress weeds and reduce incidence of early shoot borer.

3. Deep trench planting and adequate earthing up of the crop to prevent lodging. The trash twist method of propping with little finance needs wide propaganda.

4. Use of pesticides at the proper time when they will be effective and not when the borer larvae are 'safe' inside the cane stalk.

5. Withdrawal of irrigation a fortnight before harvest to force ripening in cane which would be advantageous both for the white sugar and jaggery growers.

6. The advantages of stubble harvest.

7. The need for proper care of ratoons.

One important aspect of sugarcane growing in the present context of high yielding rotation crops like hybrid *jowar*, hybrid *bajra*, paddy *etc*, may have to be kept in mind with regard to the duration of the sugarcane crop. With very good returns that may be obtained through cultivation of

the high yielding, shorter duration crops, the cultivator may be tempted to go in for these crops in preference to the long duration sugarcane crop. Hence, it is desirable to have shorter duration sugarcane varieties and not more than a twelve months crop. The *'adsali'* (15–18 months cropping) may not fit into the pattern of things to come.

From the point of increasing the quality of cane, the cultivators have to be educated on the following scientific points:

1. Harvest of the crop according to maturity. This is best done by the 'maturity harvest' system using the hand refractometer. The minimum effort in this direction would be the harvest according to age of the crop understanding the period of maturity of the variety grown.

2. The crushing of the cane within a maximum of 48 hours. This would depend on the grower and the miller with the bottleneck of communications well solved.

Lastly in the case of white sugar production, the efficiency of the factories would go a long way in increasing the production of sugar. A method should be evolved whereby inefficient factories are not allowed to crush unless they rise up to a minimum level of efficiency. In some foreign countries a 'rehabilitation fund' is created with contribution from each factory which is utilised for renovation of a factory falling below the standard of efficiency.

The average yield of cane in the State now is very satisfactory and an average yield of 40 tonnes of cane per acre can well be a reality before the end of the Fourth Plan period by intensification of the development work along sound scientific lines.