

## Cultivation of Rice and the best Method of Marketing.

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The subject, it is needless to say, is of paramount importance to the ryots of the Madras Presidency. About 10.5 million acres are cultivated under paddy at present. There are vast deltas under Cauveri, Godavari and Kistna systems of canal irrigation. It is also cultivated under lift irrigation as in Salem and other districts. But the area under it may be small. It is computed that about 75 % of the population take the rice diet in this Presidency and we may assume that this percentage will increase as the standard of living increases and more and more area is brought under irrigation projects. Rice in this Presidency stands in the same relation as wheat to North Western India. In North India wheat is the common staple food of about 75 % of the population. Rice will continue to be the main cereal of consumption in this Presidency and it will not be replaced easily by any other cereal.

It therefore naturally attracted the attention of the Agricultural Department right from the beginning and it set about to improve rice growing and production. Surveys of rice cultivation were made and a number of research stations was established in different parts of the Presidency as finance permitted, to study the local conditions and improve the local varieties. The needs of the Districts in this Presidency were separately met by establishment of Rice Research Stations. Generally speaking the varieties suitable to one locality are not generally suitable for other localities. To give an example the famous Tanjore *Sirumani* is not suited to Salem District and vice versa. The varieties of Malabar are not suited to the conditions of Tanjore and South Arcot districts and therefore there is the need to group together certain districts and find out suitable varieties for these districts. The time and money spent in search of such strains are well spent and will be amply rewarded in future as they have done in the past.

There are three different breeding methods by which best strains are selected. Firstly, Nature by its mysterious working may throw out a strain as for instance G. E. B. 24. It is a mutant which a breeder discerned, isolated and improved upon. The strain has established its fame and has spread to many parts of the Presidency, not to mention its rapid spread in the adjoining states of Mysore and Hyderabad. It is a very good table rice and it has other desirable qualities, such as ability to stand drought, and non-shedding, resistance to *Piricularia* and foot rot diseases. It is also non-shedding. It is not possible to have all good qualities in a single strain. G. E. B. 24 paddy has the drawback of giving less straw. I mentioned G. E. B. 24 as a sport of nature. Such mutants are very rare and noble nature sheds such bounties only once in a way.

The second method is to examine and select good single plants from an existing variety, (isolate) grow them separately, repeat the best selections from them, and establish finally one or more strains. This is done by experts who have intimate knowledge of rice growing. It will require good deal of time and patience to evolve a strain in this manner.

The third method is more intricate and highly technical. It is only highly trained technical experts that could handle and bring about select strains and it is called hybridisation. By this method it is possible to combine different desirable characters in the same strain. The Research stations are engaged in the last two methods and have already evolved a good number of strains suitable for the Presidency and have released them. These strains have given 10% to 20% increased yield over locals and have spread very much in all rice growing tracts. In Tanjore, Trichinopoly, Madura, Tinnevely and parts of South and North Arcot Districts etc., in the south, in Godavari, Kistna etc. in the north, improved strains of paddy strains have spread. In some parts of these districts they have completely replaced the local varieties and in others in varying degrees. In fact in paddy it is not possible to collect figures of improved strains for the area is increasing from year to year by the efforts of departmental officers as well as by the initiative of the cultivators themselves. The Department is doing its best to spread these strains and it is in fact one of the main items of its activities. In all the Taluk Headquarters Depots, the seeds are stocked and sold. The demand has been so great now that it is not possible to meet all the requirements from Research stations. Paddy seed-farms have been started by the Department, improved seeds have been purchased locally and sold to meet the increasing demand. Organised seed multiplication schemes are also under consideration of the Government. As finances permit they will be given effect to. By these schemes, rapid spread of the strains will be effected. I may mention here that it is not enough to purchase a superior strain and grow it in the usual way; scrupulous care is to be taken to maintain the purity of the strain. At first only a small quantity is purchased which we multiply to the entire area at our command. It is good to do so, for the single reason that it is economical and at the same time we get the seed acclimatised to our soil conditions and climate.

Paddy is one of those seeds which get easily mixed up in the nursery in planting, harvesting or in the thrashing floor, drying yard, storing etc. and requires all our vigilance to keep the seed pure. Seed selection and storing should be attended to personally by those interested and not left to those who handle them carelessly and who by ignorance or otherwise do not attach much importance to the purity of the seed. I need not go into details of the advantages of pure seed and the importance it plays in successful agriculture. With all the care and vigilance exercised paddy seed gets mixed up with other seeds in course of time and it is better the seed is replaced once in four or five years. Apart from mixing, the seeds get deteriorated and lose their original good qualities as for instance a fine

seed gets course or disease resistant variety develops a new disease. Such changes are naturally governed by environmental conditions and we have to change or adopt new strains to the different conditions. Therefore what a strain is to-day may be entirely different in years to come and we must be changing with nature.

Where is the need for improvement and increased production? The question has been partly answered. It is wrong to suppose that we are over producing. Our population is increasing as also our consumption, and the standard of living increased with the introduction of prohibition which is to be extended soon over the whole Presidency. Salem district, it is said, is now consuming more of staple food articles such as rice etc. and is drawing its supplies from the adjoining districts chiefly from Tanjore, Trichinopoly and South Arcot. People who used to take *ragi* and *cholam* are now getting more and more of the urban touch and are going in for a rice diet. When the whole presidency goes dry, one can imagine what a tremendous demand is going to be created for rice, so that all the quantities of rice you are going to produce will still be found short. There is a great future for rice and rice growing tracts.

Further, I need not emphasize the importance of increasing our yields with less cost in these days of economic depression and low prices. It did not matter when prices ruled high and when one *Kalam* of Paddy (24 M.M.) was selling at Rs. 4. In those days we could have afforded to forego a bit of production capacity. What was lost in yields was then made up in price. But now when prices have gone down considerably, it is important that the ryots should wake up and increase their production.

It is therefore a sound proposition for acceptance that the yield of paddy per acre should be increased and we shall presently consider ways and means how increase in yields could be effected. It was already stated that by using improved paddy seeds, 10% to 20% increased yield could be obtained by mere change of seed alone. The improved seed may cost a little more than the local seed and that is worth paying for.

By proper cultivation of wetlands with light iron ploughs, it is possible to decrease the cost of cultivation and increase the yield by about 5%. I mention here, the use of a plough like Cooper No. 25 for wetland cultivation. It is a handy and light plough for using in wet lands and has been found useful. In Chidambaram Taluk more than 200 ploughs are at work and those mostly in wetland cultivation. It suits the local cattle which are small sized animals and also the nature of wetland soils largely. Locally the ryots use a very small wooden plough and sometimes without the iron share resulting in poor and imperfect cultivation. The chief objection raised by ryots against the use of the iron plough is that, their cattle are of small size and even the lightest iron plough gets down deep into the mire in the puddled land and their cattle are unable to cope with the drought. This might hold good in certain cases but wherever conditions are better, it is certainly advantageous to use light iron ploughs and increase the yield.



By adopting improved cultural methods as for instance thin sowing and economic planting, yield could be increased by about 5%. Further about 60% in the initial cost of seed per acre is saved.

This improvement of raising thin nursery and adopting economic planting is as old as the Department itself and now vast areas are planted economically in many paddy growing tracts of the Presidency.

By judicious manuring yields could be increased. I am referring here to that aspect of green manuring by growing crops like *Jaincha*, *indigo* and *kolinji* and *pillipesara*. It is a known fact that paddy responds to green manuring and in combination with bonemeal or superphosphate the yields could be increased up to 10% to 25%. Different soils require different green manure crops. There are certain disabilities which work against growing green manure crops. As for instance *sunnhemp* and *pillipesara* and at times *daincha* are crops liable to be grazed by cattle unless protected by proper fencing or by watch over them. As fencing system is absent in the delta area, it is possible to get over the difficulty by co-operation. If ryots in a village co-operate and sow their green manure crop in a compact block it is possible to grow *daincha* or *sunnhemp* successfully and on large scale. Cultivation of *sunnhemp* for fodder after rice between December-February, in northern districts is a case in point. It is then possible, if necessary, to keep a common watch against cattle trespass. I might cite an example near at hand in South Arcot District. In a village called Medaiyur, Chidambaram taluk, a few ryots joined together last season, got about 20 bags *daincha* seed collectively and sowed about 100 acres in a compact block. It was cut simultaneously and composted. This is a good instance, where co-operation could really help. If one or two ryots had attempted to grow the crop separately, it might have ended in failure. I have now shown how we could increase the yields by using improved seed, by good cultivation, proper manuring etc.

By adopting all the improvements systematically and judiciously it has been in course of years possible to increase the yield of paddy by about 75% more. Records of the Agricultural Research Station, Palur and Central Farm, Coimbatore show that, where a variety yielded 1800 or 2000 lbs. per acre 20—25 years ago, it now yielded 3500 lbs. and more. This shows that by systematic farming and good cultivation we can increase the yields considerably.

**Marketing.** But it is not enough if we are merely able to produce a certain commodity. Mere production in any scheme of national regeneration will not solve the problems of poverty, indebtedness etc. unless those products are simultaneously marketed to the best advantage. The problems of production and marketing are knit close together and they have to be solved together. How best to market the produce should engage the attention of Rural Development workers as well as the State. Ryots who are generally poor are confronted with expenses specially when their paddy is

about to be harvested or just after it is harvested. They have to pay Government kist or celebrate a marriage or pay a pressing debt which cannot be postponed. They are compelled to take loans at exorbitant rate of interest from the *sowcars* or sell their new produce when the prices are usually low. They cannot afford to wait for better prices. It is in this way one and all from a rich *Mirasdar* down to an ordinary *ryot* are suffering. It is here, where real help is needed either from public bodies or corporations as in the west or from the State. We do not find in our country, such institutions as in the west where co-operative bodies are formed from public funds and help the societies. The burden here largely falls on the State.

Government has therefore come to the aid and formed co-operative societies, known as Loan and Sale Societies, for the benefit of the growers. The Loan and Sale Society will advance loans to the *ryots* or members on the security of the produce say at 6% interest. The society itself will be financed by the Central Bank at 5% interest. The produce will be sold either by the individual, better still by the Society itself when prices rule high. The Society will then recover the advances paid with interest and the balance handed over to the member. In this way, the member is helped not only to tide over the financial difficulty but is also materially benefitted with extra profit which he gets by selling at favourable rates and further we do away with the middlemen who more or less, like vultures, snatch away the extra gain which really should go to the actual tiller of the soil. As an example, I cite the paddy loan and sale society which is working at Chidambaram very successfully. This is the third year of its working. During the year 1938 the Loan and Sale Society disbursed loans to the extent of Rs. 75,000 in 21 centres among 245 members. The profit, the members got was as much as 10% to 40% extra. The paddy which was selling at the time of pledging at Rs. 1-8-0 per *Kalam* only, was sold later on at 1-12-0 to Rs. 2-8-0 per *Kalam*. Therefore if paddy could be held up for better price with the aid of a society, it could be sold subsequently at a great profit. It is therefore upto the *ryots* to follow such example, form Co-operative Loan and Sale Society and benefit themselves.

The Marketing section of the Agricultural Department is trying to improve marketing conditions for paddy. It has made surveys of the rice growing areas in the presidency and is trying to find out ways and means to market the produce to the best advantage of the producer. It has begun to introduce grading of rice in Tanjore District and sell the graded produce at some premium in foreign markets. It has already begun to function and has done some useful work in this direction but much remains to be done. The marketing section is actively engaged in solving several problems connected with marketing of rice and it is hoped that ere long the *ryots* will have the full benefits of its labours.

