

An early experiment in line sowing of paddy in Coimbatore District in 1842*

by

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Synopsis: An early experiment in line sowing of paddy in Coimbatore district carried out in the year 1842, having historical value is discussed in this paper.

Introduction: In an attempt to gather information about the agricultural conditions in Madras State during the previous century from the records of the East India Company preserved in the Madras Record Office, the author came across a record of an interesting experiment in drill sowing of paddy carried out in the year 1842 in Coimbatore District. As far as the author is aware this is not found in any published literature. Since this has some historical value, it is now published.

Circumstances under which the experiment was started: As a result of the successive investigations made during the eighteenth century, the textile manufacturing industry in England made very rapid strides. The demand for raw cotton was steadily increasing. The availability of extensive virgin lands at no more cost than a dollar per acre⁽¹⁾ and their opening up for cultivation with slave labour made it possible for the United States of America to increase cotton production tremendously. The aggregate imports of raw cotton into England during this period rose enormously but the share of India in these imports was relatively very small. This exercised the mind of the Court of Directors of the East India Company in London. The strained relations between England and America then existing made England apprehensive that if the American supplies were reduced, the textile industry at home would suffer substantially. The East India Company therefore brought to India ten cotton planters from America on a contract basis to cultivate in India American varieties of cotton by the American system of cultivation along with various varieties of cotton seeds grown in America, so that Indian cultivators could use the exotics and cultivate them precisely in the same way as was done in America⁽²⁾. It was thought that this was an "open sesame trick" which could effectively reduce England's dependance on America for supplies of raw cotton. It is recorded that this endeavour spread over 12 years did not yield benefits in the manner and to the extent expected. One of the ten American cotton planters was one Mr. Morris. An area of 101.7 acres of land suitable for growing the exotic cottons was leased near Erode town in Coimbatore district for locating one of the cotton experimental farms and this was placed in charge of Morris⁽³⁾. Morris along with his trials on cotton initiated an experiment on drill sowing of paddy which is reported in the present paper.

Details of the experiment: Morris should have seen in the areas commanded by the river Bhavani near Erode that paddy was transplanted and grown under swamp conditions. He should have thought that this was entirely different from the drill sowing of paddy and of other crops extensively practised in America, where scarcity of labour was a very important factor that weighed in evolving suitable modes of cultivation.

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In a letter dated 3rd June, 1843, ⁽⁴⁾ the Collector of Coimbatore enclosed a copy of a letter from Morris explaining his experiment. When the land was moist, it was ploughed with a country plough and levelled in the same way as was done by local cultivators. He then laid out drills from 16 to 18 inches apart with hoes to a depth of about 2 inches. The paddy seed was then sown "but very thinly in the drill at a rate of perhaps not more than half a bushel per acre". This works out to about 23-25 lb. of paddy seed per acre. Ten or 12 days after the seeds had germinated, a small quantity of water was let in daily. After the plants "began to branch, the water was then let on and remained for 10 or 15 days at a depth of 3 inches when it was let off for three or four days". This was continued till the maturity of the crop. Morris adds that "it was sown entirely too late for a fair experiment" and that his "mode of cultivation requires no more water than the Indian system".

Paddy varieties under cultivation in Erode in 1842: In his letter referred to in the previous paragraph Morris reported that Erode was growing the following paddy varieties at that time :

1. *Samba*: Five varieties of samba with durations ranging from 6 to 7 months were grown. The system of cultivating these varieties is described by Morris in the following words: "This is a small kind of paddy much preferred by the natives. To sow this, a small portion of land is ploughed and manured between the 2nd and 4th July. Fifteen days after, the ground is again tilled and the seed is sown as thickly as possible between the 24th of July 3rd August. This is termed 'Nautoo Nadavoo' meaning in English the formation of a nursery. During this period or while these plants are vegetating, the rest of the arable land of the farm is under preparation. The land once more undergoes ploughing and levelling with a harrow (piece of timber). It is then ready for the reception of the plants which are transplanted up to the 15th of October but not later. The process of weeding commences after the 14th November and the produce is reaped in January".

2. *Peshanam*: Morris stated that this was an eight months crop and described this variety also as a "small kind of paddy" which was cultivated precisely in the same manner as Samba.

3. *Sendalai*: There were two varieties of Sendalai with a duration of 5 and 6 months. Morris described this as a coarse variety. Nursery beds were prepared between 27th May and 27th June and sown between 13th and 27th June. Transplantation was done between 3rd and 14th September and the harvests were made between the 2nd and 21st of January.

4. *Manavary*: This consisted of 3 sorts and the crop had a four months' duration. Morris described "Viasee Caur" (Vikasikar) as a coarse kind of paddy and "Manavary" as a variety with a brown grain. These varieties were sown broadcast between 27th May and 27th June and harvested by 30th October.

5. *Caurtekay Caur*; (Kartikai Kar). There were two sorts in this variety and the crop was of three months duration. Morris described this as a coarse paddy sown between 16th October and 24th November and harvested between 26th February and 11th March. This also was sown broadcast.

In the experiment conducted by Morris, seeds of one of the broadcast varieties of paddy was used but the exact name of the variety is not available in any record.

Results of the experiment: The cotton farm at Erode which was placed in charge of Morris was under the Superintendence of Dr. Wight. In a letter dated 28-6-1842 ⁽⁶⁾ Dr. Wight reported to the Board of Revenue, Madras, that the "American mode of culture" did not give any extra yield but added that "the natives are so well pleased with the method that many have expressed a determination to adopt it as yielding a better return with a diminished expenditure of both labour and seed to which, I may add, time, as Mr. Morris's crop though sown nearly a month later than the crops in the adjoining fields was reaped shortly after and gave as large a return". Dr. Wight furnished the following statement of yield.

Land cultivated	...	13 acres
Produce	...	92½ salagays or 5525 seers.

American system gave 425½ seers per acre.

Native system gave from 300 to 500 seers per acre. One salagay in Coimbatore district is 64 madras measures which at 2½ lb. per madras measure would weigh 160 lb. Dr. Wight puts a salagay as equal to 60 seers and so a seer works out 2⅔ lb. The American system had therefore given about 1136 lb. per acre and the local system 800 to 1333 lb. per acre for broadcast paddy.

Cost of cultivation and manuring: Though Morris's letter does not contain anything about the kind of manures used, Dr. Wight gave the following statement ⁽⁶⁾ showing cost of cultivation for 13 acres by the American method.

		Rs.	A.	P.
Cost of 112 maunds of cotton seed used for manuring at 2 annas per maund	14	0—0
Cost of 112 measures of paddy seed	7	0—0
Cooly - sowing	4	0—0
„ - weeding & transplanting	20	3—6
„ - harvesting	0	12—0
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	Total	...	45	15—6

It is not clear how any wages for transplanting was mentioned when actually no transplanting was done. Another important matter is the use of 112 maunds of cotton seed as manure which is not prevalent in India. This maund is equal to 25 lb. According to Royle ⁽²⁾ cotton seed should be deemed valuable as manure since "a great portion of the inorganic matter, forming a component of, and taken away by the cotton is returned to the soil". Turner ⁽⁷⁾ has published a report of a cultivator recommending use of cotton seed as a manure for corn instead of using it as a manure for cotton itself. He recommends the application of 75 bushels of cotton seed per acre as a manure for corn. After opening up drills, he suggests that the cotton seed may be spread from one end of the drill to the other, over which corn seed may be dropped. According to him, a 100 per cent increase in yield is obtained and the residual effect lasts for five years. Apparently cotton seed was then largely in use as manure in America and that is presumably why Morris had adopted it in this experiment. At present cotton seed is very valuable both as cattle feed and as a source of edible vegetable oil.

Discussion : It is well known that dry or semi-dry cultivation of paddy is in vogue in some districts even now, such as Chingleput district. Under this system one of the "Manvary" varieties of paddy seed is sown broadcast with the receipt of rains. After some days when there is not enough moisture in the soil, the standing crop is irrigated from tanks or wells. This method is adopted in order to reduce expenditure on irrigation. The 'manvary' varieties of paddy referred to by Morris at Erode were perhaps being grown in that area in the above manner. All that Morris attempted was perhaps to sow the seeds in drills instead of sowing them broadcast. This cannot be deemed to entail additional demand on irrigation water as imagined by the Board of Revenue. The broadcast sowing with manavary variety of paddy seeds is itself a measure calculated to raise the crop under dry or partially dry conditions having regard to the limitations imposed by meagre water supply. If plentiful supply of water was available, no cultivator would go in for this kind of crop. He would prefer the finer samba varieties and grow them as a transplanted crop under swamp conditions. In any case, the experiment is an attempt to try growing paddy in drills. The line planting of paddy even in a transplanted crop is now largely advocated all over India since it facilitates hoeing and other similar cultural operations with certain labour saving implements.

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