

## SUNNHEMP (*CROTALARIA JUNCEA*) FOR GREEN MANURING IN COIMBATORE WET LANDS

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The wet lands represented by the Paddy Breeding Station, Coimbatore, grow a single crop of paddy of about 5-6 months' duration in the year and it is rotated with either sugarcane or plantains in a 5 to 6 course rotation. The water supply in the channels lasts for about six months, July to December, and as the plantain and sugarcane crops remain on the land for nearly a year, this supply has to be supplemented. It is a common feature of these lands to have a well, one in a block of 5 to 6 acres and water is lifted by mholes to irrigate these crops in the hot weather. There are four such wells in the Paddy Breeding Station and it was considered an attempt might be made to see if any garden crops could be grown successfully on the lands after the harvest of paddy between February to June. Crops like groundnut, ragi, gingelly, fodder, cholam (sorghum) sunnhemp, *pillbasara* (*Phaseolus trilobus*) and some pulses were raised on a small scale in the hot weather of 1931. This note explains the experiences gained in such an attempt, particularly with the growing of a sunnhemp crop. It may be stated here that none of the other crops tried was an economic success. The cost of lifting water from the wells formed such a big item in the cost of cultivation, that it by itself, covered the value of the produce obtained.

**Cultivation.** It is always a problem to get the paddy lands to a good tilth for the summer cropping. The usual practice adopted in the neighbourhood of the station is to wait for the lands to dry up completely after the paddy harvest, flood the fields once again, and plough them at the right time after a certain stage of drying. This practice has been adopted at the Paddy Breeding Station whenever the land had to be prepared for some summer crop. Sometimes a soaking rain would dispense with the necessity of irrigating the fields before ploughing. An iron plough of the 'Hindoostan' type has been found to do the work quite satisfactorily for the first ploughing. Two or three more ploughings with the ordinary country plough get the land to a good condition to receive the seed.

**Sunnhemp.** In the land prepared in the above manner sunnhemp seed was sown broadcast at the rate of 50 lb. to the acre, covered lightly by passing the country plough and irrigated. The sowings were done in two batches one on the 4th May (1.18 acres) and the second, one month later on the 6th June (0.32 acres). The germination was good and the land was soon covered with a vigorously growing crop. Later irrigations, three in all were given to supplement the



rainfall which amounted to 5'62 inches for the periods, April to middle of August. In about three months, the crop had grown to a height of nearly five feet and was ready to be cut and used as green manure. Taking both the sets of sowings together the cost of raising the crop per acre amounted to:—

	Rs.	As.	P.
1. Preparatory cultivation	16	7	0
2. Cost of seed	3	2	0
3. Cost of irrigations	16	6	0
4. Cost of cutting the crop	4	15	6
Total	Rs. 40	14	6

The total produce of green leaves obtained worked out to 39,000 lb. per acre or about 950 lb of green leaf to every rupee spent on cultivating the crop.

It is usual with the wet-land cultivation of the tract to green manure the paddy crop every year. The ryot usually applies green leaves brought from outside buying it at the rate of 4 annas per bundle of 50 lbs. The usual rate of applying the leaf being 1,500 to 2,000 lbs per acre he spends about 8 to 10 rupees for green leaf. The Coimbatore ryot does not require to be told about the efficacy of applying green leaves to his paddy crop and it is the prohibitive cost of the leaf that makes him limit the dose of application.

Moreover in the case of a three month old sunnhemp crop the leaves and stems are so succulent that they readily decompose in the puddled fields unlike the miscellaneous leaves brought as head-loads which more often contain plenty of undecomposable wood than of leaves.

Even if the farm figures obtained in 1930-31 be taken as unusual and extraordinary, an yield of 24,000 lbs. of green leaves from an acre of three months old sunnhemp crop can be easily expected. This quantity of 24,000 lbs. obtained from an acre should be enough to manure 6 acres of land at 4,000 lbs. to the acre and this would not cost more than 6 to 7 rupees per acre.

*Pillipasara* (*Phaseolus trilobus*) is another green manure crop that has been tried in the Paddy Breeding Station recently but under Coimbatore conditions it does not appear to be capable of giving such a heavy tonnage of green leaf as sunnhemp in such a short period as three months. Sowing it in the standing crop of paddy just before it is harvested, a practice in vogue in the Godavari delta, will be tried, so that it will remain sufficiently long in the field to give a bigger tonnage of green leaves.

With the experience obtained in 1930-31, the sunnhemp was raised for green manuring purposes in 1932 summer as well. Unlike the previous year the rains were more timely with the result that there



was no necessity for any irrigation. The cost of cultivation on this account was considerably less than that of the previous year namely Rs. 55—13—4 per acre. The green leaf obtained worked out at 36,436 lbs. per acre in  $2\frac{1}{2}$  months' time or 1410 lbs. per rupee spent on cultivation. In this case, the sunnhemp was pulled out instead of being cut and hence the entire plants including the roots were included in the weightage. If the crop had been pulled out in the previous year, the yield might have gone up by one-fifth more and the production per rupee might be 1150 lbs. instead of 950 lbs.

### PRACTICAL AGRICULTURAL CO-OPERATION \*

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As I have been studying co-operation with particular reference to agriculture I am here attempting to place before you some of my views on the subject. My claim as an outsider to speak on co-operation before an audience of co-operators is the fact that the man in the forest can see only trees, whereas the man outside can see the forest as a whole. Before coming to the point I shall attempt to describe the present position of co-operation in this country in the broadest way possible and contribute my mite by way of suggesting methods for improvement.

In the history of any organisation a few definite stages of growth can be noticed. With a number of enthusiasts who do propaganda work in favour of a movement and under their guidance new organisations are started as the first step in their existence. Secondly, there is a period when people are busy forming organisations and their number easily mounts up. Good reports commenting on the encouragingly large number of organisations formed during the period please the public as well as the Government. This is followed by a third period of working difficulties due to practical inaccuracies in the programme of work forecasted for the organisation to follow. The original scheme was probably suited to the conditions which were available at the outset when the propagandist studied the question. There must have been some changes, as a result of which the needs of the country and the population must have undergone considerable change. Later on comes the more difficult and annoying period of stagnation which is marked by inactivity. The next stage is one of fear of the authorities that helped the formation of the organisations as to whether they are any good or can serve any useful purpose, and so forth.

\* Paper read before the North Arcot District Co-operative Conference in May 1932, held at Pallikonda.