

sugar is sold at Rs. 3-3-0 to 3-4-0 per maund in the open market. An attempt was made to work out the cost of manufacture by the above two methods but the manufacturers were rather reluctant to furnish figures for fear that the existing duty might be enhanced.

Excise Duty and its Effects. According to the Sugar (Excise duty) Act of 1934 a duty of excise at the rate of ten annas per cwt. is levied on sugar produced by Centrifugal factories on or after 1st April 1934. No mention is made in the Act about sugar produced by the use of water weed. Such concerns cannot come under the definition of factory since 'factory' has been defined in the Act as premises in any part of which any manufacturing process connected with the production of sugar is being carried on or ordinarily carried on with the aid of power. It remains to be seen whether the levying of excise duty will interfere with the establishment of further Centrifugal factories. There is no likelihood of increase in the number of concerns following the old method since the supply of water-weed is limited.

THE VELLORE MUNICIPAL SEWAGE FARM

By M. K. SWAMINATHAN, L. Ag.,

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The Vellore Town Municipality maintains 58 heads of working cattle for conservancy purposes and the annual budget allotment for maintaining these bulls comes to about Rs. 4000 which is spent mainly on the purchase of fodder etc. They were being fed till very lately with the following rations per head per day :—

Paddy straw, 15 lbs.
Rice bran, 3 Madras measures.
Agathi leaves, 1½ lbs.

Contracts were given to dealers to supply the above food materials and it was found that the quality of bran supplied was very poor due to the presence of husk, etc. It was therefore a problem to the authorities how to change the rations given to their working animals omitting bran. The Municipality consulted the Agricultural Department. It was suggested to them, to utilize a small area of their sewage farm for raising fodder crops such as lucerne and elephant grass. The suggestion was taken up immediately.

The Municipality owns about 25 acres of land on the banks of the Palar and this area is irrigated by sewage water, taken through pucca drains, sieved in many places, stored in big wells and finally pumped out by gas engines direct to the fields. This farm is divided into plots of one acre each and leased out to ryots. The average lease amount works at Rs. 100 per acre per year. Sewage water is supplied to the plots, free of cost for 6 hours a week, ryots mostly raise kitchen garden

crops such as brinjals, chillies, onions etc. since they are easily marketable at Vellore town. They rotate these crops with maize, ragi, cholam and tobacco. Intensive cropping is done and the plots are never kept fallow. Manuring is done to a very little extent as the ryots are quite aware that the sewage water is rich in manurial ingredients.

In this sewage farm, an area of 1.80 acres was tackled by the Agricultural Department for raising lucerne and elephant grass, and the council sanctioned Rs. 50 towards the expenses. The plot was ploughed by Cooper ploughs, levelled by bucksrapers and manured with well-putrified night-soil at the rate of 10 cartloads per acre.

Lucerne was sown on 24-12-33 in a plot of 60 cents and elephant grass slips were planted on 10-1-34 in trenches 2 feet apart in another plot of 1.20 acres. Sewage water was regularly applied twice a week during the first month and later on once a week. The germination and the growth of these crops were excellent and the lucerne plot was ready for cutting on 22-2-34 (i. e.) 60 days after sowing. On an average, 90 lbs. of lucerne were cut every day. Elephant grass was ready for cutting on 22-3-34 (i. e.) 70 days after planting. On an average 1300 lbs. of grass were cut each day. With the availability of lucerne and elephant grass a change in the existing rations of the conservancy bulls was effected and the following is the revised rations per head per day :-

Paddy straw, 10 lbs.
Lucerne, 1½ lbs.
Elephant grass, 18 lbs.

The change was made rather gradually, slowly reducing the quantity of straw, bran and agathi leaves, and gradually increasing lucerne and elephant grass. By a series of trials every day during the first fortnight of the change, it was found that for a reduction of 5 lbs. straw, 2 Madras measures of bran and 1¼ lbs. agathi, each bullock required 18 lbs. elephant grass and 1½ lbs. lucerne. During the first fortnight, some of the animals showed signs of dysentery, but in a few days the digestive system corrected itself to the new rations and now the animals are free from the trouble and look hale and strong.

In the first cutting, lucerne has given an acre yield of 6,545 lbs., while elephant grass has given an acre yield of 37,400 lbs. Coming to the economic aspect of the question, the Municipality is saving Rs. 120 per month. The details of the saving are tabulated below :-

Name of fodder.	Daily reduction per head.	No of heads	Saving per day.	Saving per month.	Rate per rupee.	Amount saved. Rs. as. ps.
Paddy straw.	5 lbs.	58	290 lbs.	8700 lbs.	110 lbs.	79 1 5.
Bran (paddy).	2 m. m.	58	116 m.m.	3480 m.m.	126 m. m.	27 9 10.
Agathi leaves.	1¼ lbs.	58	72½ lbs.	2175 lbs.	160 lbs.	13 9 6.
Total.						120 4 9.

Deducting a maximum expenditure of Rs. 100/- per year over a watchman and Rs. 40/- per year towards manuring, weeding etc., the net saving to the Municipality will be Rs. 1,300/- in a year from the budget allotment towards the purchase of fodder for conservancy cattle. Other Municipalities or Unions or Panchayat Boards who have similar facilities may with advantage copy the action taken by the Vellore Town Municipality.

The writer's thanks are due to Mr. M. Kanti Raj, Assistant Director of Agriculture, Vellore, for instructions given in carrying out the work and suggestions given in preparing this note.

AGRICULTURE UNDER THE FASCISTS

By S. V. RAMAMURTI, M.A., I.C.S.,

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I have much pleasure in accepting the invitation of the Madras Agricultural Students' Union, to speak this evening about the many things I have seen in Europe, particularly in Italy, under the new regime. I had the advantage of going to Italy with a request sent by the Madras Government to the Government of Italy, to give me official facilities for seeing the work there, both by way of agricultural research and by way of other agricultural organisation; and the Italian Government were extremely kind, and showed me great courtesy and consideration in giving me full facilities for seeing the work that was being done there. Italy, I have visited thrice—I was there in 1922 before Signor Mussolini became head of the Government; I was there again in 1927, and the present was my third visit—and, every time I found an enormous change had very emphatically shown itself in the spirit of Agricultural Research in Italy.

The general level of research work in Italy, and even in Europe, is about the same as that obtains in India. In fact, except in Russia, the quality of research work done at Coimbatore is second to none. The great difficulty in India, has however been, that in spite of the large accumulation of results of research work, we are not making headway actually in the application of those results. I wanted to see whether in Italy, which approximates somewhat to the conditions of India, people having small holdings can adopt the results of scientific work in practice and if this had been successful I wanted to study the methodology of how this was being done and I may say, that I did get indeed a few ideas.

What was called the wheat campaign was started in Italy in the year 1925 by Signor Mussolini and it went on for five years. It was

* Lecture delivered under the auspices of the Madras Agricultural Students' Union, on Monday 10th July 1934, at the Agricultural College, Coimbatore.