

with scientific investigations on green manuring in India, a list of references is given below.

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THE WATER-HYACINTH AND ITS UTILIZATION.

In a recent review* of the work done by the Agricultural Department in India during the last twenty years, attention was directed to the profitable utilization of the water hyacinth in increasing crop-production in Bengal. The suggestion was thrown out that this water weed should no longer be regarded as a pest to be destroyed but should be converted into valuable manure for jute and rice by means of the Chinese methods of composting crop residues described by King in *Farmers of Forty Centuries*. The matter was referred to in *Capital* of January 22nd last (p. 131) and again on February 5th by Dr. Gilbert Fowler in his article on the water-hyacinth problem (p. 242.)

* *Crop-production in India*, Oxford University Press, 1924.

In connection with a series of experiments at the Institute of Plant Industry, Indore, on the conversion of crop residues into finely divided organic matter suitable for the cotton crop, results have just been obtained which leave no doubt that the profitable utilization of the water-hyacinth in Bengal and in Burma is a practical proposition. In the Indore experiments, one of the materials employed was water weed obtained from the local river. This was mixed in the fresh condition with earth, cow-dung and wood ashes in the Chinese fashion in a compost heap. To begin the heap five cart loads of the weed were spread on the ground in the form of a rectangle—eighteen feet by twelve—and about nine inches deep. Half a cart load of earth, half a cart load of ordinary farm-yard-manure and two baskets of wood ashes were then spread uniformly on the weed, moistened with water and the whole mixed. A second layer of water weed was added and again mixed with moistened earth, cow-dung and wood ashes as before. This procedure was continued till the heap contained from thirty to forty cart loads of the weed. The heap was then lightly covered with earth to prevent excessive drying and left for a month. An active fermentation at once began and the water weed was rapidly broken down into a damp moist mass. At the end of the first month the heap was turned to promote thorough aeration. By the end of the second month the fermentation was completed and the water weed was converted into finely divided organic matter resembling moist leaf mould. This material when added to the soil stimulates growth in a remarkable manner and is proving a valuable manure.

There is every reason to believe that the above treatment would produce similar results if applied to the water-hyacinth in Bengal and Burma. The only modification likely to be necessary is to adjust the moisture in the water-hyacinth before composting so as to prevent water oozing from the heap. If this takes place a loss of valuable material would result. This loss could easily be prevented by allowing the weed to wither for a few hours in the sun before being used for the compost. The best time of the year to convert water-hyacinth into Chinese compost would be after the monsoon between October and March when the work could be carried out in the open air. During this period a large volume of compost could be prepared for the cold weather crops, for the jute areas, for rice nurseries and for vegetable and fruit gardens.

It will naturally take some years before the ryots of Bengal realize the great value of the water hyacinth in increasing crop production. A beginning however can be made at once by many private individuals interested in gardening and fruit growing. The experience thus obtained will soon begin to filter down to the people. If at the same time organizations like the Universities, the Agricultural and Co-operative Departments and Agricultural Associations take up the work, progress will be rapid. At all Agricultural Exhibitions in Bengal substantial prizes should be offered for the best compost made from the water-hyacinth and for produce raised with this manure. [Albert Howard in *Capital*, dated 18th June, 1925]
—Agricultural Journal of India, Vol. XX, Part V.