

very valuable investigations relative to the utilization of fish waste as a fertilizer. In one Bulletin, No. 50, United States Department of Agriculture, he re-affirms what many other investigators of agricultural economy have stated, namely:

'It should be pointed out here that, with such fertilizing materials as dried blood, tankage, cotton-seed meal and fish scrap, it is better agricultural practice to feed these to stock than to apply them direct to the soil. It can be taken as thoroughly well established that both the nitrogen and the phosphoric acid, after performing their rôle in the life processes of the adult animal, are eliminated. Then the high food value of these rich foods is utilized and at the same time the fertilizing elements are still available for use on the growing crops.'

QUANTITY OF FISH WASTE IN CANADA

With regard to the availability of fish waste in Canada, I am only in a position to offer an estimate, but, after conversing with many in the fishing industry, I feel sure I am not over-estimating when I place the quantity at something like 250,000 tons a year.

A few examples of waste may be useful as illustrating my assumption. It is stated authoritatively that it requires 88 lbs. of salmon on the Pacific coast to fill 48 one-pound cans; the balance, about 46 per cent, is waste. In the British Columbia salmon packing industry alone, it is estimated there is annually some 20,000 tons of waste. In the lobster packing industry, the percentage of waste is 75 per cent. In the Atlantic dry-fish curing industry, 45 per cent is waste. On the Great lakes, 44 per cent. of the total annual catch is waste.

Fishermen generally will inform one that, of the total catch of all species of fish caught at sea or on lake, 25 per cent consists of fish of no market value, and, further, of the remaining 75 per cent, an additional 25 per cent can be deducted as waste on gutting for market. In the halibut fishery, the head is the only waste brought ashore and it is estimated to be one-sixth of the weight of the 'cleaned' fish. It will be readily understood that, whatever the quantity of waste is, it is colossal.

The outstanding question, then, is how much of this waste is economically collectable and convertible. This is a factor for further investigation.

Obviously, the chief points of collection will be found on the two sea coasts.

PREPARATIONS FOR EXPERIMENTING

It was thought wise so late in the year (October) to commence investigations on the waste originating in the inland waters, where, it is