INVESTIGATIONS ON THE CONTENT OF SUGARS IN THE SUGAR CANE TOP, AND ON THE EFFECTS OF MILLING UNTOPPED CANE

I. INTRODUCTION

Cane tops, which comprise from 5-45 % of the total yield of cane, are generally discarded in the field at harvest time. They are allowed to rot, and comprise a return of organic matter to the soil.

In some cases tops are used for feeding animals, and also as a planting material. But the quantity of tops which are used for such purposes represents but a small proportion of the tops produced.

Until recently the harvesting of the sugar cane was done entirely by hand. However the production of efficient mechanical harvesters has been stimulated by world-wide labour shortage and difficulties, and mechanical harvesting is now playing an increasingly, important role in the sugar industry.(35) This method of harvesting eliminates the necessity for the large amounts of labour which are required only during the harvest season, and also effects a considerable reduction in cost. It is considered(36) that machines will soon be available to suit the conditions of almost any cane growing country.

It is a recognised fact that one of the greatest difficulties which confronts the mechanical harvester is the problem of topping the cane. Dr. Willcox,(37) discussing the present position of mechanical harvesting, states that machines have been designed to top, with a fair degree of efficiency, cane which is erect in its growth habit and fairly uniform in height. However, where heavy yields are obtained, there is a strong tendency for the cane to become recumbent and tangled. In such cases the difficulty of topping by a machine is so great that no attempt is made to top the cane. It is sent to the factory, tops and all.

Since the tops represent such a high proportion of the crop, and since in some cases the tops have to be transported to the factory in any case, it would obviously be very profitable if some economic use could be found for them.

The writer therefore carried out investigations for the purpose of acquiring information which might indicate possible uses for the cane top. The experiments were carried out in Trinidad with cane grown under the local conditions. The varieties used were some of those which were recently produced by the Cane Breeding Station in Barbados, and which have become popular in the B.W.I. The investigation took the form of an examination of the content of sucrose and reducing sugars in the tops, and also of the effects of milling untopped cane in a sugar factory.

Experiments in various countries have indicated that the milling of the tops along with the normal mill cane produces undesirable effects. But no detailed study of the subject has been undertaken in the B.W.I., and none at all with the varieties which are popular at present.

Early in 1946 Mr. Easton, Chemist in Charge of Brechin Castle Sugar Factory, Trinidad, expressed his desire to see these experiments performed as outlined. It is therefore concluded that the sugar industry of this area would be interested in the results of these investigations.