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Combined Meeting of the Factory Sections of the Association

The Nineteenth Combined Meeting of the Factory Sections of the Association was held at the Conference Room of the Sugar Research Department, Mandeville, on Friday, 13th November, 1959, commencing at 8.30 a.m. under the chairmanship of Mr. H. B. Springer, who welcomed the members present. He mentioned that there were many papers of importance to the Section and hoped that members would take part in the discussions that would follow each paper.

Trends in Rum Production

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(MR. M. B. FLORO in the Chair)

Introduction

The scientific production of rum has fallen far behind that of cane and sugar, and it is essential for the future good of the industry that this situation should be changed. This change can only be brought about by a real scientific assessment of the entire industry. It is not proposed to do so in this paper, but it is hoped that some thought in that direction may be stimulated.

Historically, Jamaica rum is recognized as the finest rum in the world. It has gained its repute because of its genuine rum taste and odour. It has been often described as full-bodied with characteristic flavour and bouquet. Yet strangely enough we do not find people specifically demanding Jamaica rum when they have a rum drink.

In 1957 a survey of rum-drinkers[1] was carried out for the West Indies Sugar Company Ltd. by the British Market Research Bureau Ltd. This survey showed that "while rum-drinkers readily associated the drink with Jamaica, the country of origin of the rum appeared to have very little influence upon their choice of the particular rum they drank." Surely such a situation should cause concern to producers in Jamaica, and especially so as other rum-producing countries are doing everything possible to improve their production and sales. It can well be that these producers could very well increase their sales at the expense of Jamaica's renown for rum. It is rather peculiar and very distressing that a product which is so well known and so freely associated with a particular country is so poorly sought after specifically.

It seems that the time has come—nay, may well be past, when something must be done to make people demand Jamaica rum in preference to other types of rum. The time has come when people's awareness of Jamaica must not be only as a source of rum or as a generic term for rum. People must be persuaded to insist on Jamaica rum because Jamaica rum is best!

This last statement poses a question in everyone's mind, "How are we to persuade people that Jamaica rum is best?" The answer may well be found in a statement made by the Sugar Industry Commission of 1944[2] when they concluded their opinion of the Jamaica rum industry by the words: "The production of rum in Jamaica is in general still regarded more as an art than a science." With the backing of its reputation Jamaica must produce quality rum scientically.

It may well be said that Jamaica rum is at the cross-road. Should rum production continue as it has over the past years as if it were some mysterious art? Should rum production continue in the present wasteful, insanitary, rule of thumb manner? Should we continue to say that because we have been making a particular type of rum for years and have had a ready market, there is no need to change, or should we assess our present methods of production and investigate modern distillery practice which is based on sound scientific and economic principles? The ultimate success or failure of rum production is whether or not there is a demand for the finished product. Bloomfield[3] states that "The trend of consumer taste appears to be gradually changing in favour of very light and almost neutral type." This trend of consumer taste should be seriously borne in mind in present day rum production.

Modern Rum Production

The main considerations in producing rum scientifically are in relation to:

(*a*) Molasses.
(*b*) Yeasting.
(*c*) Fermentation.
(*d*) Distillation.

(a) Molasses

Final molasses as produced in the sugar factory today contains many constituents which are undesirable for the production of alcohol. There are some constituents which are not conductive to good fermentation while others cause scale incrustation in the still. Then, too, the molasses may not have sufficient nutrients to support the yeast. There are several tried methods[4] of treating molasses prior to fermentation and each producer must make investigations to determine which process is suitable for his needs.

(b) Yeasting

The type of yeast used in any fermentation will have a great deal of influence on the amount and quality of rum which is produced.

The manner in which sucrose is hydrolysed to alcohol is extremely complex but it is sufficient to say that yeast contains in their cells complex substances called enzymes which act like catalysts in that they promote hydrolysis of sucrose without themselves being changed in the reaction. It is interesting to note that the enzymes of yeast are very specific in their reaction. It is for this reason that the type of yeast used for fermentation is so important. In selecting yeast it is essential that it has certain characteristics, viz.:

(1) High alcohol production.
(2) Ability to withstand high alcohol concentration.
(3) Ability to withstand acidity.

In order to obtain yeast with such qualities, selection must be made and each culture kept pure. Different yeast could be separated for different types of rum. Where the trend is for light rum the problem is greatly simplified as special flavours need not be considered.

(c) Fermentation

With the molasses properly treated and a suitable yeast available, the fermentation is off to a good start. These factors, however, are not all that are necessary. The fermentors must be absolutely clean with no means for contamination during fermentation. This is the ideal situation, and to do this totally-enclosed metal fermentors are necessary. Good fermentation can be obtained, however, with open-type fermentors, provided steps are taken to reduce bacterial fermentation. In this respect the use of wooden fermentors are to be shunned as they are difficult to keep clean. Metal fermentors made from copper bearing steel will last for 25 to 30 years. There is virtually no up-keep and they are easily cleaned. The draw-off from fermentors should also be provided with an extension inside the fermentor of 4 to 6 in. This is to prevent any dead yeast cells going to the still, thereby causing scale and imparting undesirable flavours to the distillate.

For good fermentation it is necessary to have the molasses of even constituency and the density must be such as to give the best results with the yeast used. In this respect the amount of yeast footing added to the wash must be such that the fermentation runs to its maximum production of spirit. Too much footing is as bad as too little.

Fermentation at a constant pH is essential if quality of product is to be maintained. Bacterial activity is increased at higher levels of pH.

Temperature is very important in fermentation. High temperatures are to be avoided during the fermentation process. Where possible it is preferred to provide coolers. Where this is not possible adequate measures should be taken to ensure good natural cooling. Increased temperatures cause increased losses of alcohol. Speaking of temperatures, hot molasses should not be used to mix wash as it is desirable to have the wash at the lowest possible temperature prior to the start of fermentation, since a lot of heat is generated during fermentation.

Finally, it need hardly be pointed out that fermented wash should go to the still immediately fermentation ceases as any delay will cause loss of alcohol due to evaporation.

(d) Distillation

It is possible to get the maximum alcohol from fermentation and yet have large losses at the still. The ideal method would be to centrifuge the wash prior to its going to the still so as to ensure that all solids are removed. Distillation practice today is by the use of continuous column stills, and if Jamaica rum is to remain in the forefront, this type of manufacture will have to be used increasingly.

The modern column still designed for rum manufacture allows for the production of virtually any type of rum. Most or all of the undesirable constituents of rum can be removed while the well known, desired clean rum taste and odour are retained. The product when mature is mellow, smooth and of delicate flavour. The great advantage of the column still is the ease with which a product can be produced to suit public taste and demand.

The Future of Jamaica Rum

Floro[5] has suggested that the uncertain rum market has been the biggest deterrent to modernization of distilleries in Jamaica. At the time he said further that "as we see it at present, so long as the qualities demanded by the market for Jamaica rum are to be maintained no very great improvement can be expected in the present standards of recovery as attained by the bigger and more up-to-date distilleries without involving big capital outlays." That single factor may well be the real reason for the lack of scientific method in rum production in Jamaica. The time has now come, however, when the qualities demanded by the market for Jamaica rum has changed and it is up to rum producers to meet the challenge and produce an article worthy of the fine traditions of Jamaica rum, yet reaching out into a larger, more demanding and most exacting clientele.

This is a highly competitive age, and success in any venture demands careful thought, astuteness, foresight and forthright action. Research has made available tools which can fashion worth-while commodities. We must not let these tools lie unused. The ideas and the way of life of a thousand years ago, although good are not acceptable to the twentieth century. The present demand is for a light rum. Jamaica should produce such a rum but in doing so it should be distinctively Jamaican.

Summary

The scientific production of rum has not been greatly pursued in Jamaica. This now seems necessary in order to have Jamaica rum recognized specifically rather than a general association of rum with Jamaica. The demand for lighter rums makes it necessary to pay more attention to modern rum production. This requires scientific control of the molasses, yeast, fermentation and distillation. Development along these lines will ensure a consistent product of excellent

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Summary

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quality and filling public demands. Rum producers in Jamaica should not be afraid to modernize their approach to the problem as delay may cause grave setbacks to the future of the industry.

References

1. A Survey of Rum-Drinkers. Prepared by the British Market Research Bureau Ltd.
2. *Report of the Sugar Industry Commission, Jamaica*, 1944–45, VII, 86.
3. Bloomfield, C. A., *J.A.S.T.*, 1958.
4. McFarlane, J. R., *J.A.S.T.*, **1949**, **13**, 40.
5. Floro, M. B., *J.A.S.T.*, **1944**, **8**, 16.

The Chairman said that rum was one of the most important by-products of the Jamaican sugar industry, especially at present low sugar prices. The members of the industry were at the cross-roads regarding the formulation of a good rum. He said that times had changed and the rum industry should progress with it He then threw the paper open for discussion.

DISCUSSION

Mr. G. T. Macdonald said that the revenue from rum played a very big part in the economy of sugar factories and it was a timely occasion for Mr. Campbell to raise that topic. There was a time when the Research Department had a fermentologist on its staff but that section had been disbanded. He asked whether it was possible to produce a lighter rum similar to the Barbados and Trinidad types while still preserving the peculiar characteristics of traditional Jamaica-type rums.

Mr. H. D. Campbell said that was possible. The peculiar characteristics of a light or a heavy rum were brought about by their particular chemical content, e.g. aldehydes, esters, etc. The design of a continuous still enabled the operator to regulate the type of rum produced. The production of neutral spirit which was then blended with rum from a pot still was not necessarily good rum.

The Chairman said that it was difficult to define exactly the characteristics peculiar to Jamaica rum and it was even more difficult for anyone to reproduce our Jamaica rum.

Mr. R. F. Innes wanted to know where blending came into the production of the final rum product on the market and to what extent are we in the hands of the blenders.

Mr. H. D. Campbell agreed that the product on the market was in the hands of the blenders but if there should arise any particular defect or deficiency, then the blender should consult with the manufacturer. There must be co-operation between both parties and production must be discussed in relation to the market.

Mr. C. R. D. Shannon mentioned that some years ago he visited a rum buyer in London and had been impressed with the fact that there were sometimes very great differences in rums having the same mark, but made in different years; that could be due either to the inexactitude of manufacturing methods or to variations in raw material stemming from the cane itself. He also mentioned that if the embargo on rum from foreign sources, e.g. the other West Indian Islands was removed, he was certain that the local sales of the Jamaica rum would fall. Many of the Barbados and Trinidad rums had flavourings such as vanilla and prune wine added. Continuing, Mr. Shannon said that the rum manufacturers in Jamaica had had insufficient incentive to develop their business in order to meet the changing market due to the small manufacturing allowance, and until recently the sharing of the proceeds with the cane growers.

Mr. D. P. Elder said that advertising should play a big part and that a lot of rum was blended and bottled in England and sold as Jamaica rum. The public did not realize that there was a difference between that and locally blended rum. The rum blended and bottled in England was different and he thought that the S.M.A. should advertise the differences in the origin.

The Chairman agreed that that should be examined and said that there were a number of buyers in Britain who did their own blending and the solution would be to have a centra bottling plant.

Mr. R. F. Innes asked Mr. Campbell how would he propose to change the production of rum with respect to consumer demand in England.

Mr. H. D. Campbell replied that there were three possible ways:—

(1) That there should be two centralized distilleries in which all rum would be distilled and the distillation at the small factories abolished. There were, however, many problems in this respect, which had to be surmounted.

(2) Abolish some of the distilleries of the smaller factories and operate the others on a proper basis but reserving the particular mark or brand of each estate.

(3) Co-operation with the big marketing firms whereby estates manufacturing for any particular buyer would make an effort to induce that buyer to share in the cost of the erection of a particular still producing the rum he required.

It would be very difficult to convince buyers in England to buy and to stick to a particular type of rum but the industry could consider handling all the rum and having a central distilling, blending and bottling plant. Too much consideration was given to the primary buyer who did as they pleased with their purchase. We should also remember that one of the biggest buyers of Jamaica rum produced their own rum.

Mr. G. T. Macdonald said that the rum buyers in the U.K. should know their own business and might be reluctant to abandon an established market for traditional Jamaica-type rum for a speculative market of a specialized type of Jamaica rum.

Mr. H. D. Campbell thought that we could maintain our traditional market and still produce new improved types of light rum but it would be necessary to exert a lot of drive, effort and advertising skill.

Mr. D. P. Elder suggested that the name rum should be changed if a new product was put on the market.

The Chairman felt that a gradual and not a radical process of centralization was necessary for the production of a better type of rum.

Mr. G. T. Macdonald said that the industry was fortunate in now having a knowledgeable and experienced person investigating the technical and economic problems of rum production.

The Chairman thanked Mr. Campbell for his very interesting paper, and brought the discussion to a close.