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Expert Group Meeting on processing
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SUMMARY

FACTORS IN THE PROCESSING OF BANANAS

by

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The use of bananas in a wide variety of foods such as infant formulations, ice cream mixes, bakery products, and formulated drinks offers the possibility of developing new industries concerned with the processing of banana and banana products. Bananas possess a number of properties which make them admirably suited to their use as a food component. Their flavour is highly desirable, and their starch and sugar contents may contribute functional properties to products formulated from them.

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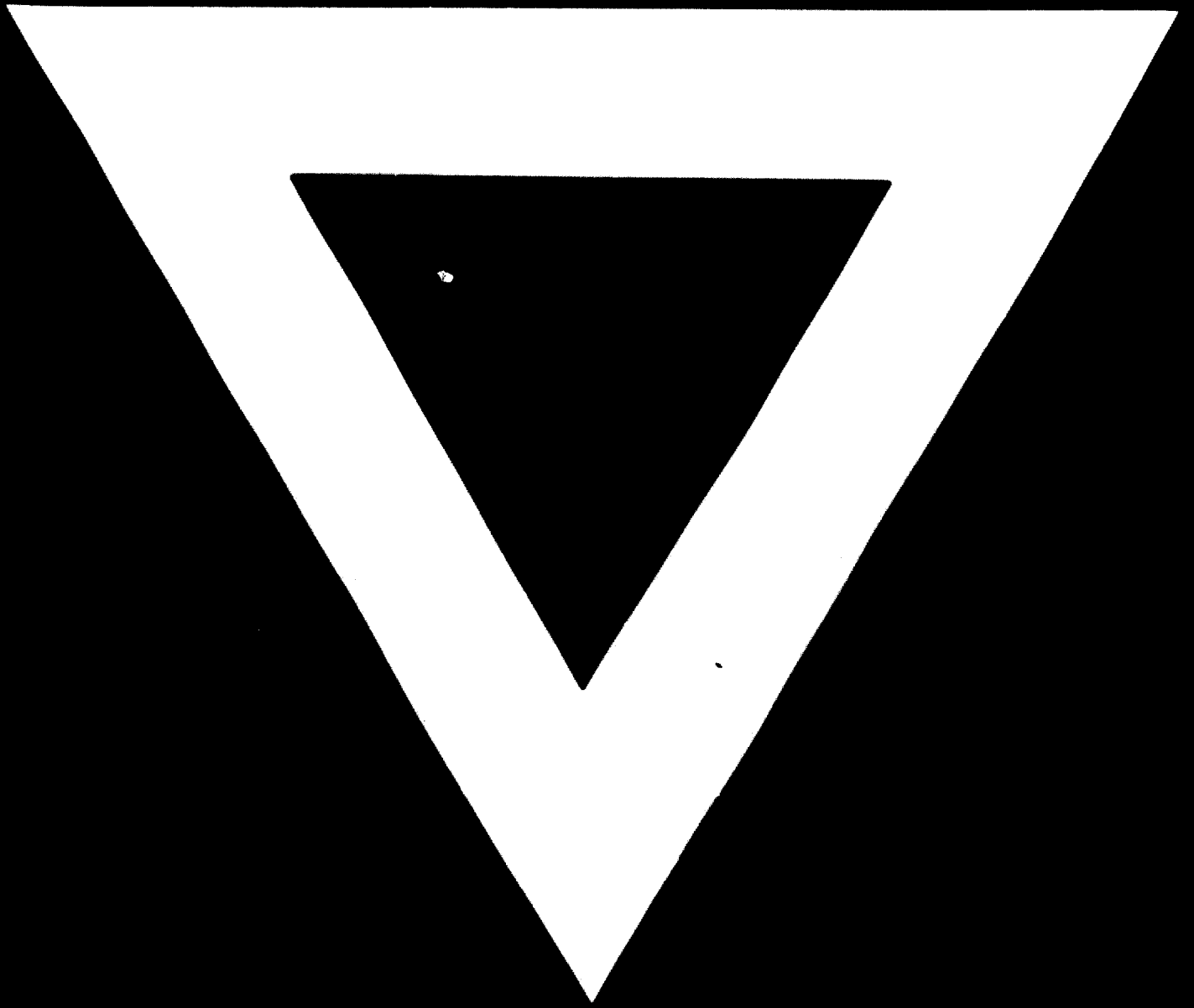
Industries based upon the production of banana stable concentrates, dehydrated powders, or possibly completely formulated foods can be promoted in countries where banana culture is indigenous to aid export development. In order to maximize the potential of industrialization of bananas, however, many factors must be considered. Traditionally, bananas are thought of as a fresh export product, and the characteristics of the banana fruit, other than those used as cooking bananas, have been pointed toward the development of a product that is utilized in this market. Varieties and cultural conditions have been adapted to increase the yield and flavour of fruit destined to this market.

A number of problems exist in the industrialization of bananas, among which are flavour retention, enzymatic and non-enzymatic darkening, astringency, and aroma. The maximizing of the desirable characteristics among these and the minimizing of the undesirable ones make it technologically difficult to successfully industrialize banana products. Techniques now available may surmount many of the problems in the production of banana products, but there are still factors which must be considered. Additional work is required to establish the best techniques for the prevention of enzymatic darkening and thus the production of a stable and flavourful dehydrated product. Other points of investigation, however, may be of equivalent importance. The adaptation of fresh market varieties of fruits and vegetables for processing is always fraught with some difficulties. Particular success in producing flavourful industrialized products either for export or domestic consumption has proceeded rapidly where the identifiable desirable characteristics can be maximized by varietal selection and those which are undesirable minimized. There is ample evidence that among the varieties of bananas which are now cultivated some may be significantly better, from an industrial point of view, than those which are cultivated for fresh market. In addition, there is the possibility that varieties particularly adaptable to industrialization may be developed, as has been the case in fruits such as peaches, tomatoes, and in vegetables such as peas, onions, etc.

Of particular importance in industrialization is enzymatic browning. A study of a significant number of varieties of bananas indicates that enzymatic browning is not uniformly distributed among varieties. Equivalent differences are found in starch contents, ascorbic acid, and other important factors in industrialization.

In enzymatic browning a number of techniques are available for the minimization of this problem. Intervention in the browning reaction is possible at several points. These intervention techniques must be applied successfully to process the fruit available at present. It will be desirable, however, to work closely with agriculture to produce fruit which is particularly adaptable to industrialization.

While additional work is desirable in the processing of bananas and banana products, the concept of processing offers a significant possibility to develop products and technologies uniquely identified with geographic areas which are capable of cultivating bananas. These, in turn, offer important possibilities for the development of non-traditional export markets.



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