PRODUCTION OF SWEETNERS FROM CEREALS AND OTHER STARCHY SOURCES

BY

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Approval Sheet

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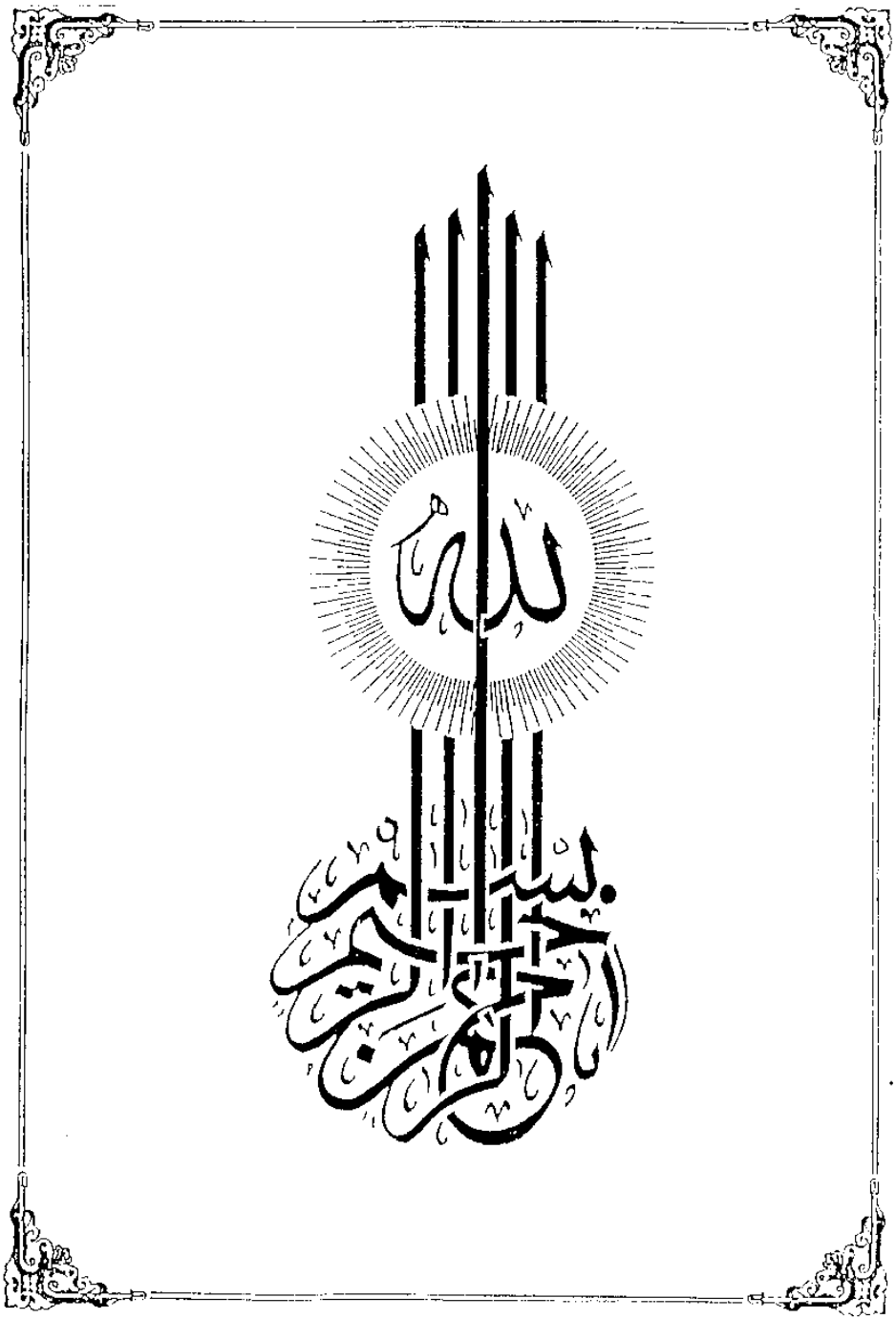

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ABSTRACT

Chemical composition of the investigated samples; i.e tapioca, potato, corn 45 was considered. The obtained results, especially those related to hydrocyanic acid content of the same samples proved that the cultivated tapioca could be considered as a sweet variety and its starch may be used safety in edible purposes. The optimum conditions for α-amylase,(Fungal α-amylase), ß-amylase, Amyloglucosidase and glucose isomerase enzymes, which act on different starch types, were specified through evaluating of these enzymes.

Production of glucose syrup by one step using amyloglucosidase under its optimum condition of activity indicated that the glucose content reached 83.41, 93.67, 91.83, 93.67, 92.17 and 38.28% for potato, tapioca (Amerky and Antonicy), corn 45, Mostorod starch and soluble starch respectively.
On the other hand, when the two steps enzymes method was applied by using α-amylase and amyloglucosidase the results showed that the percentage of the produced glucose was ranged between 50.88 to 97.91%.

Production of maltose syrup by β-amylase under the optimum condition showed that the percentage of maltose content was 90.22, 87.21, 86.11, 85.41, 83.21 and 65.51 for potato, tapioca (Amerky and Antonicy), corn 45, Mostorod starch and soluble starch respectively. In case of using Fungal α-amylase, the obtained data proved that the percentage of maltose content was ranged between 38.36 to 60.34%.

For the production of high fructose syrup by using glucose isomerase the available data indicated that the maximum conversion value to fructose was obtained with initial glucose syrup concentration that varied between 38.36% and 59.04%.

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