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Properties of glucose syrup and application in the production of jelly beans

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Glucose syrup is obtained by acid or enzymatic hydrolysis of starch and in addition to glucose, it also contains maltose and dextrans of different molecular weight. This paper analyzed the properties of glucose syrup, which is the primary raw material for the production of jelly beans in the company "Swisslion Takovo" from Gornji Milanovac, and also described the technological procedure for the production of jelly candies. The analyses are done in the laboratory of the Faculty of Agronomy in Čačak and gave results that describe the quality of the tested syrup and which are in accordance with the specification and regulations on the quality of this type of product. Based on the tested parameters: reducing power (dextrose equivalent) and dry matter it is clear that glucose syrup was obtained by acidic hydrolysis. Specific angle of rotation polarized light ($130,28 \text{ }^\circ\text{mL}\cdot\text{g}^{-1}\text{dm}^{-1}$) and DE value are not in correlation theoretical values that predict % reducing power about 60 for this specific rotation. On the other hand, by examining the color of the sample using the spectrophotometric method, it is clear that the product has a satisfactory quality, which was also determined by ICUMSA units (9,4 ICUMSA). In order to complete the analysis of the properties of the syrup, chromatographic detection of HMF was also performed, which proved its presence to a lesser extent (with a retention time of 7.5 min) which was expected considering that this type of product is obtained by heat treatment. Finally, a sample of glucose syrup was used in the jelly candies recipe, after which a sensory evaluation of the final product was performed. Jelly candies were produced in with different gelling agents: gelatin and agar agar and identical other ingredients: glucose syrup, water, sucrose, aroma and citric acid with certain differences in the production process. Based on the sensory evaluation, jelly candies with agar agar belong to the very good category, and jelly candies with gelatin belong to the good category.

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