

Секція 1. ІННОВАЦІЙНІ ТЕХНОЛОГІЇ ХАРЧОВОЇ ПРОДУКЦІЇ РЕСТОРАННОЇ ІНДУСТРІЇ

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IMPROVEMENT OF TECHNOLOGY OF IODINE-CONTAINING SOFT ICE CREAM (УДОСКОНАЛЕННЯ ТЕХНОЛОГІЇ ЙОДОВМІСНОГО М'ЯКОГО МОРОЗИВА)

Удосконалено технологію м'якого морозива за рахунок використання підсирної сироватки як основної сировини та додавання йодованої води «Йодіс». Розроблено раціональну рецептуру для м'якого морозива та заморожених десертів. Визначено, що здатність до збивання, стійкість піни та ступінь дисперсності жирової фази кращі за контроль відповідно на 10%, 31% та 23%. Визначено раціональні параметри пастеризації напівфабрикату (за температури 80...82 °C протягом (5,8...6,2) · 60⁻¹с).

World science has found that the state of almost all human organs depends significantly on the work of the thyroid gland, including the provision of its iodine. At the present stage in Ukraine the problem of iodine deficiency is much more global. Almost the entire territory of Ukraine iodine intake is 40–80 mg per day at a rate of 150–180 mg for an adult, that is 2–3 times lower than the physiological needs. Medical examinations of Ukrainian citizens in 2017 showed that 30% of adults and 20% of children had thyroid disorders.

Medical and genetic studies have found changes in the hereditary apparatus of people, the cause of which is environmental pollution. The most unfavorable situation is observed in the Carpathians, Volyn and Crimea. In the Kharkiv region, 31% of girls and 24% of boys have iodine deficiency disorders or thyroid disorders. In the Dnipropetrovsk region, such changes were found in 19–24% of people. In Krivoy Rog the problems caused by shortage of iodine, exacerbated by the considerable environmental pollution by industrial emissions. It should be noted that iodine is a weak halogen, and stronger halogens – chlorine, fluorine – displace it from the soil and from the human body. The main part of iodine consumed by a person – up to 90% – enters the body with food, so the issue of iodine prophylaxis is directly related to the organization of a healthy diet. The content of iodine in water and food varies considerably due to the geochemical characteristics of the soil. However, even in the most prosperous regions of Ukraine, the amount of naturally consumed iodine rarely exceeds 30% of the need. Thus, iodine prevention is necessary for all citizens of Ukraine.

A promising way to provide the population with functional ingredients, which certainly includes iodine, is to create enriched products based on traditional favorite foods, which are ice cream and frozen desserts. In the aspect of solving the problem of iodine deficiency are timely and relevant research in the field of development of new technologies of semi-finished products (liquid or dry mixes) for making frozen products with a foam structure with iodine-supplement "Iodis".

Long-term comprehensive studies conducted by scientists from Ukraine, Belarus, Russia, Lithuania, Moldova and several other countries have shown the universality and safety of iodized water "Iodis". It was recommended for the production of dairy, sausage, bakery products, mineral and table water, and other food products. In addition to the health effect, the introduction of iodine-water additives can increase the shelf life of the finished product, replacing hazardous chemical preservatives.

On the basis of the conducted research the most rational formulation for the semi-finished soft ice cream should be considered as recipes based on cheese whey containing "Iodis" of 0.8–1.1%, sugar 13.2–14.1%, and the stabilizer of 0.2–0.3%, fat 7%. Analysis of the research results showed that the developed semi-finished product has the highest ability to knock down (9.8–10.2%) compared to the control sample. Semi-finished product is able to form 1.31 times more stable foam than the control sample. The degree of dispersion of the fat phase of the semi-finished product is 1.23 times higher than that of the control sample. The heat resistance of ice cream mixtures is studied: it is rational to carry out the pasteurization process for semi-finished products – at a temperature of 80...82 °C during (5,8–6.2)·60⁻¹sec.

It is revealed that new types of soft ice cream are suitable for consumption for a longer period than ice cream made by traditional technology, is (35..45)·60⁻¹sec. In addition, soft ice cream made from semi-finished product "Iodis" has a more delicate creamy consistency than the control sample.

The main directions of use of semi-finished products in the technology of restaurant production were determined and original technologies of ice cream and frozen desserts were developed.

The developed semi-finished product is characterized by a high content of all nutrients and can be used for processing into food without reducing its nutritional value.

Prospects for further research in this direction is to determine the nutritional value of the developed dishes and their functional properties (physiological action), as well as functional and technological characteristics of dishes based on the developed semi-finished product.