

Of Technology for Production of Dairy Fruit Cocktail with The Use of Milk By-Passed Raw Materials

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Abstract. In the process of performing research work, original recipes for cocktails based on milk whey have been developed, technological modes of their production have been substantiated.

The results of the studies showed that the obtained samples of cocktails in terms of organoleptic, physicochemical and microbiological indicators comply with the requirements of TR CU 033/2013 "On the safety of milk and dairy products"

Keywords; Microbiological, studies, process, organoleptic, physicochemical.

Introduction.

The need to process whey and reduce its losses is due not only to the economic feasibility of producing new dairy products, but also to the need to protect the environment.

Until now, whey is not fully collected and processed, it ends up in wastewater, which harms the environment. Calculations show that a ton of whey discharged into wastewater pollutes the reservoir in the same way as 100 m³ of household wastewater. The cost of treating wastewater contaminated with whey, which is obtained at a cheese-making plant when processing 50 tons of milk per cheese per shift, is equivalent to the cost of treating wastewater in a city with a population of 80 thousand people. Therefore, at present, most of the enterprises of the dairy industry in the Republic of Belarus strive for the complete processing of secondary milk raw materials in order to minimize losses for wastewater treatment, but also to make a profit [1, 2]. In addition, specialists in the dairy industry are developing formulations for new products on the basis of whey.

Taking this into account, the purpose of the research work is to develop a technology for the production of a milk-fruit cocktail based on milk whey.

Research on the development of technology for the production of a milk-fruit cocktail based on milk whey was carried out in the educational laboratory for quality control of milk and dairy products of the department of technology for storage and processing of animal raw materials of the educational institution "Grodno State Agrarian University".

The objects of research were samples of whey-based milkshakes prepared using various components: 10% cream in various quantities and combinations with sugar and syrup in accordance with the recipes.

In the course of the graduation work, organoleptic, physicochemical and microbiological research methods were used.

For the production of samples of milkshakes used cheese whey. Whey, as well as finished products (cocktails) were evaluated for organoleptic, physicochemical and microbiological indicators in accordance with the requirements of TR CU 033/2013 "On the safety of milk and dairy products" (No. 67 dated October 9, 2013) according to standard methods.

Organoleptic indicators (appearance, texture, taste and smell, color) were determined in milk serum in accordance with TU RB 100098867.119-2001 "Milk whey". The mass fraction of fat was determined by the Gerber method according to STB ISO 2446-2009 "Milk and dairy products. Methods for the determination of fat". Determination of acidity was carried out in accordance with GOST 3624-92 "Milk and dairy products. Titrimetric Methods for Determining Acidity".

Determination of whey density was carried out by the areometric method in accordance with GOST 3625-84 "Milk and dairy products. Methods for Determination of Density ". Determination of the content of total protein, lactose, minerals was carried out on an ultrasonic milk analyzer AKM 98 Ecomilk. The determination of the mass fraction of fat in milk-fruit cocktails was carried out by the acid method according to STB ISO 2446-2009 "Milk and dairy products. Methods for the determination of fat ". To determine the microbiological indicators in the finished product, the method of successive dilutions was used, followed by sowing 1-5th dilutions on universal and differential diagnostic nutrient media.

The inoculation of microorganisms on a dense nutrient medium KMAFanM was carried out by a submerged method: 1 cm³ of the required dilution was added to the bottom of a sterile Petri dish and filled with KMAFANM medium, melted and cooled to a temperature of 40-45 ° C.

Determination of BGKP was carried out by sowing the 1st dilution on Kessler medium with floats in accordance with GOST 32901-2014 "Milk and dairy products. Microbiological analysis methods ". Tubes with Kessler medium were incubated at 37 ± 1 ° C for 24 hours. In the presence of gas formation in the smallest of inoculated volumes, it is considered that BGKP were found in them. To confirm the belonging of the bacteria that caused fermentation (gas formation) in Kessler's medium, the material from the fermented tubes is subcultured onto Endo's medium.

The content of yeast and mold fungi was determined according to GOST 10444.12-88 "Food products. Method for the determination of yeast and molds ". Tubes and Petri dishes and tubes with inoculations were placed in a thermostat and incubated at a temperature of (30 ± 1, 37 ± 1) ° C for 24-72 hours. After incubation, the grown colonies were counted.

In the process of performing research work, original recipes for cocktails based on milk whey have been developed, technological modes of their production have been substantiated.

The results of the studies showed that the obtained samples of cocktails in terms of organoleptic, physicochemical and microbiological indicators comply with the requirements of TR CU 033/2013 "On the safety of milk and dairy products" (No. 67 dated October 9, 2013).

An assessment of economic efficiency showed that the production of cocktails based on milk whey is economically profitable, since it does not require the installation and modernization of equipment at a dairy enterprise, and the profitability of production is at least 15%, which is a high indicator.

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