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Milky Extract of Stevia - A Basis for Healthy Foods.

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ABSTRACT

This article presents a researh on the use of stevia as a natural sweetener. Designed modes stevia extract by milk. The possibility of using milk extracts for production of dairy products for a healthy diet.

Keywords: stevia, natural sweetener «Stevia-VIT», milk, extract

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INTRODUCTION

It is now known that the cause of many diseases, such as obesity, diabetes and some other factors is not only related to the environment and hypodynamia, but also food, which contributes to the appearance of these diseases [1, 5, 8].

The market periodically appear new special products, which have a directional effect on certain bodily functions. Overall, however, the problem of healthy eating is not decided. It is necessary to develop a qualitatively new, high-grade products suitable for several categories of people, including those suffering from diabetic diseases, prone to be overweight and obesity, as well as active youth. One component of such products may be stevia [2, 3, 7].

Stevia is able to slow down the natural aging process, providing a powerful antiseptic and antifungal action, strengthens the immune system, improves the cardiovascular, digestive and nervous systems [4].

Country of origin Stevia - Paraguay (South America). But scientists Stavropol State Agrarian University have adapted this culture to local climatic conditions. Natural and climatic conditions of the Stavropol Territory is unique for the cultivation of stevia and stevia let you receive the list with the content of glycosides to 16%, significantly higher than in the homeland of its growth [6, 9].

There were new varieties of stevia such as «Stavropol sweet tooth» and «Martha», as well as the technology for production of natural sweetener «Stevia – VIT», which is the dried and crushed leaves of stevia [10].

Using natural sweetener «Stevia – VIT» developed a series of herbal teas containing herbs, fruits and berries, have valuable properties for human health. Experimentally were establish the lowest dose of stevia in the beverage, in which there is a very sweet taste and a slight aftertaste. However, it is the aftertaste is a significant factor limiting the use of stevia in food technology [11].

Stevia glycoside complex comprises eight components, including stevioside, and rebaudioside (Table 1). Stevioside has a bitter aftertaste, and rebaudiosides are more refined sweet taste with fewer residual bitter taste. Therefore, many companies use the purified crystalline steviol, which is obtained by chemical synthesis. However, it is difficult to consider this all-natural sweetener.

Table 1: Stevia glycoside complex [3]

Name glycoside	The extent of sweetness relative to sucrose, ed.
Steviolbioside	50
Stevioside	150
Rebaudioside	400
Rebaudioside B	50-100
Rebaudioside D	400-450
Rebaudioside E	400-450
A dulcoside	50-100
In dulcosid	150

MATERIALS AND METHODS

The aim of this work was to develop modes of producing stevia extract with milk [4]. Parameters obtaining milk and whey extracts using sweetener «Stevia-VIT» presented in Table 2.

Table 2: Parameter of extraction

Indicator	milk		whey	
Value: sweetener / extractant	1 : 100	1 : 200	1 : 100	1 : 200
The temperature in the beginning of the process, ° C	78	78	78	78
The exhibition, min.	30	30	30	30

Upon completion of the extraction residue was dried sweetener was separated from the extract by centrifugation. After cooling carried out physicochemical and organoleptic studies.

RESULTS AND DISCUSSION

The extracts constitute a milk and whey herbal drinks using stevia. It is found that for most milk beverage is desired ratio and extracting the sweetener 1: 200, and for serum - 1: 100 (Table 3).

Table 3: Organoleptic milk and whey drinks

Indicator	milk		whey	
	1 : 100	1 : 200	1 : 100	1 : 200
Colour	Beige	Light beige	Greenish-beige	Greenish-beige
Taste and smell	Milky, lusciously sweet	Milky, pleasant, slightly sweet	Milky, pleasant, pronounced sweet	Milky, slightly sweet

Tasters noted that the taste of milk and whey beverages with moderate sweetness and very bland aftertaste can be used as stand-alone drinks, both hot and cold.

Physico-chemical characteristics and energy content of beverages are presented in Table 4.

Table 4: Physical and chemical characteristics of the milk and whey beverages with stevia extract

Drink	Mass fraction, %				Titratable acidity, ^{o}T	Energy value, kcal per 100g of product
	Protein	Fat	Carbohydrates	Dry matter		
Lactic	2,8	2,5	4,7	10,0	17	51,3
Serumal	0,8	0,3	4,7	5,8	23	22,9

Physico-chemical characteristics and energy content fully comply with the original products - milk and whey. The resulting milk and stevia extract serum served as the basis for the development of new formulations of products containing the sweetener «Stevia-VIT».

CONCLUSION

Analysis of the data allows us to recommend stevia extract milk for the production of dairy products. Further research will be directed to the development of dairy desserts, based on the obtained extract.

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