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Justification for the Selection of Components In Phyto-Teas: Steviana.

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ABSTRACT

This article discusses the relevance of the development of compositions for herbal teas to improve human health. It is proposed to use various plant compositions for prevention. The substantiation of the use of stevia instead sweetener. Describes the technology industrial production of the sweetener «Stevia-VIT».

Keywords: stevia, herbal tea, sweetener.

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INTRODUCTION

Presentday studies of medicinal herbs have shown that in medical practice more efficiently their application without chemical treatment - in the form of infusions and decoctions. It is well known that vitamins, macro- and microelements best absorbed by the human body because of plants. After all, in the plants they are in harmony and therefore does not have side effects on the body, which are often seen with the use of vitamins derived synthetically.

Infusions and decoctions of various parts of herbs are called herbal teas. Herbal teas have long been a popular natural ways to maintain health. Proven recipes of centuries of herbal teas are available to everyone, and for the improvement of health is a means found to be effective [1].

The composition of herbal teas include not only the vitamins, but also a variety of minerals, and amino acids, and essential oils, tannin and caffeine, and many other components of plants.

In other words, the component composition of herbal tea depends on its purpose, the main beneficial effects and spillover effects. This should be considered a combination of components that are not permitted by their mutual inhibition. It is desirable to enhance the possibility of mutual efficiency [2].

An important condition for a drink is the presence of a harmonious flavor and aroma, which are provided by a conscious, scientifically sound selection of herbal ingredients.

The aim of this work is the scientific study of the component composition series of phyto teas «Steviana». The main components of these herbal teas are used Krasnodar black tea and natural sweetener from a dry leaf honey herb stevia – «Stevia- VIT ».

RESULTS AND DISCUSSION

Krasnodar black long leaf tea is made from the top three tea leaves and bud collected by hand, the tea plantations are located in the foothills of the resort city of Sochi. Hand picking tea, the special processing technology of tea leaves and sorting allowed to select the best tea leaves to produce a bouquet of taste, flavor and color infusion tea beverage. This tea - a rare phenomenon in the blend are found as large premium tea leaves and tea leaves tart medium, small, stalk and lint.

This tea combines all the advantages of its components: the fortress petty teas, soft and delicate taste leaf tea, unusual notes and aroma petiolar tea. Black tea enriches the brain cells of oxygen, so that thoughts become clearer, and the headaches go away. Also, black tea is an excellent prevention of cancer.

The taste and aroma of black tea can be considered self-sufficient, but many people are used to add to the drink sucrose to impart a sweet taste. An alternative to sucrose are so-called sugar substitutes, however, almost all of them are unsafe, so to impart a sweet taste herbal tea can be used stevia plant (*Stevia rebaudiana*).

Currently known plants surpassing sucrose sweetness several hundred times. The most used and studied representative is stevia (honey herb). Stevia belongs to the family Asteraceae perennial shrub up to 120 cm. It comes from South America (Paraguay). Of the 100 species it contains only *Stevia rebaudiana* sweet substance at a concentration sufficient for industrial production. Yield of dried leaves of 2 to 6 t / ha.

In the scientific literature there are no reports of toxicity or mutagenicity components in stevia. Sweet compounds of stevia belong to a class of diterpene glycoside contained in an amount up to 8%.

The sweetener rebaudioside contains in its composition to 11-15% protein, vitamin C and minerals. It has antibacterial, anti-diabetic, hypoglycemic, cardiogenic, anti-caries, and diuretic properties. The sweet components of stevia are non-toxic, low in calories, are not addictive, have been successfully used as a sugar substitute for people with diabetes and impaired glucose metabolism. They are sweeter than sucrose (in total) to 300 times have minimum calorie [3].

The totality of the components contained in stevia, prevents the growth of harmful bacteria and viruses, have antiinflammatory capacity. Therapeutic and prophylactic properties of stevia are due to its content of flavonoids, water-soluble chlorophylls and xanthophylls, water-soluble neutral oligosaccharides, free sugars, amino acids and mineral compounds. Of the 17 amino acids found in stevia, 8 are indispensable. It includes vitamins D, E, K, P, A, C, and saponins, protein, fiber, tannins, minerals, essential oils, etc. Components of stevia act on the healing process in complex, selectively and consistently at the cellular and genetic levels.

Powder and lyophilized extract of leaves of stevia (*Stevia rebaudiana*), used as a sugar substitute contains from 13,7 to 35,5% of amino acids, including proline proportion of 7,91%, which increases consumer properties of the extract, which is recommended for use in as a sweetener.

Scientists of the University developed the technology of cultivation of stevia in the climatic conditions of the Central Caucasus. As a result, two new original varieties: «Stavropol sweet tooth» and «Martha» (entered in the State register of breeding achievements permitted for use in the Russian Federation). The deduced parameters of the technology of growing culture in the Stavropol Territory. Obtained permission, specifications, certificates and declarations, confirming the safety of products. This makes it a promising culture for use in the food and processing industry.

The results of studies of the dried weight cormophyte stevia grown in an experimental plant for physico-chemical parameters (Table 1) and the amino acid composition.

Table 1: Chemical composition of dry leaf of stevia, %

Total moisture	Crude protein	Crude fat	Crude fiber	Crude ash	Anazotic extractive substances
6,67	19,90	2,72	7,77	8,56	54,35

The considerable amount of anazotic extractive substances - 54.35%, the main one being rebaudiazid referring to glycosides. This also includes the water-soluble neutral oligosaccharides, alkaloids, tannins, spicy and aromatic substances that are similar to the coffee aroma and cinnamon.

The relatively high (7,77%) content in dry weight of fiber, as well as macro- and trace elements (8,56%), which include potassium, calcium, phosphorus, magnesium, silicon, zinc, copper, selenium, chromium, and iron. The composition of the lipid fraction (2,72%) contains essential oils, polyunsaturated fatty acids. The protein fraction of stevia contains 17 amino acids, eight of which are irreplaceable. Like all vegetable proteins, proteins stevia are incomplete. The main limiting amino acid is isoleucine. However, it amino-acid score (AAS) sulfur and aromatics of more than 100%. It is known that milk protein is ascertained deficiency of sulfur-containing amino acids (AAS 90%), which determines the possibility of using stevia for the enrichment of dairy products.

Natural sweetener «Stevia-VIT» is made by standard of organization № 00668620-002-2010. To obtain and use the dried crushed to particle sizes from 0,71 to 1,5 microns stevia leaves harvest during budding, which provides them a maximum solids content.

In addition to the basic composition of the herbal teas are also specific supplements that contribute features and purpose of drinks. As additives are used: Jerusalem artichoke tubers, grass oregano, lemon balm, mint, hyssop, rose hips and hawthorn, black currant leaves, petals Sudanese rose, lemon balm and other grass. The list composition of matter protected by patents for the invention.

CONCLUSION

The range and characteristics of the developed beverages are presented in table 2.

Table 2: Range and characteristics of herbal teas

Designation	Composition of matter	Packaging, appearance	Prescription
INTERESTING BALM	Krasnodar black tea; Jerusalem artichoke tubers (variety «Interest»), natural sweetener «Steviya- VIT», grass marjoram, lemon balm, mint, hyssop.	Figure 1	It is recommended to drink when consuming fat, «celebratory» food, smog, «stuffy» and inclement weather, in overweight, bronchitis
BRIAR	Krasnodar black tea, hips, natural sweetener «Stevia – VIT », blackcurrant leaves, sudanese rose petals	Figure 2	Multivitamin agent. The drink is useful in diabetes, obesity and gout
MELISSA	Krasnodar black tea, chinese green tea, herb lemon balm, natural sweetener «Stevia – VIT»	Figure 3	Used in functional disorders of the cardiovascular and nervous system, low immunity, overweight.
HAWTHORN	Krasnodar black tea, hawthorn, natural sweetener «Stevia – VIT», sudanese rose petals	Figure 4	Useful with the weakening of the heart and lungs, sleep disorders and overweight
OREGANO + MARJORAM	Krasnodar black tea, oregano herb – oregano, hyssop, natural sweetener «Stevia – VIT»	Figure 5	The drink is useful for excessive excitability, increased hyperactivity, reduced attention span, to improve sleep, in overweight, colds and bronchitis
GINGER	Krasnodar black tea; the tubers of root ginger; herbs lemon balm and hyssop; cumin seeds	Figure 6	Useful when taking bold and festive food, the prevention of influenza and colds



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



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