

DEVELOPMENT OF THE DENTIFRICE WATER FORMULATION BY USING OF DISTRIBUTED IN FLORA OF GEORGIA BIOLOGICALLY ACTIVE SUBSTANCES

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Resume

Currently treatment of teeth and oral cavity is one of the topical tasks for pharmaceuticals. A large number of papers are published on oral cervical disorders, as well as treatment and prophylactic remedies. With taking into account a rather rich flora of Georgia, including plants that have antiinflammatory, antibacterial, antiseptic and so on activity, creation of new, effective remedies represents a topical task. The production of dentifrice water tooth by application of Georgian raw materials and expansion of world market is not only scientific innovation, but also has economic effect.

At development of elixir formulation, the existing literary data on the chemical composition of the ingredient and biological activity were taken into consideration. The alcohol-water extract from the leaves of the scum, tinctures from the fruits of hawthorn, grass and leaves of motherwort, leaves of eucalyptus, mint grass was used. The latter two provide also aroma of dental toothpaste.

The antiseptic, anti-inflammatory and tanning effect is achieved by using a tannoid extract from the leaves of scumia or sumac.

Anti-inflammatory, antimicrobial, bactericidal, biostimulating, and disinfecting effect has the entire complex of substances contained in selected tinctures and extracts - tannins and other phenolic compounds, carotenoids, oils, sesquiterpenoids and so on. The epithelizing, healing, vitaminizing effect on the mucous membranes makes the carotenoids, vitamins A, PP, K, vitamins of B group, etc. existing in tinctures of mint, motherwort and hawthorn. The presence of A and E group vitamin in hawthorn fruits in combination with a tincture of eucalyptus leaves, containing monounsaturated and polyunsaturated acids, creates a sufficient antioxidant effect. The application of mineral waters "Chargali" and "Utsera" with certain content of elements, in the dentifrice water formulation gives the intensification of connective tissue collagen synthesis, mineral elements gum and teeth saturation remedy, makes the inhibition

of inflammatory reactions, stimulate the regenerative processes in the epithelium cells of mucous in oral cavity.

The water "Chargali" contains 1650 mg/l - of sodium, 440 mg/l of calcium, 150 mg/l of magnesium cations, 5100 mg/l of bicarbonate ion, 1200 mg/l of chlorine ions. The water "Utsera" contains: HCO₃ - 4,2-7,9 g/l; Na + - 1,2-2,4 g/l; potassium contents varies from 4.9 mg/l - up to 7,9 mg/l, divalent iron content of 15-17 mg/l, contains lithium and strontium. Both water contains microelements that are needed for gingival nutrition - boron, vanadium, manganese and other compounds. In order to maintain microbiological and colloidal stability, ethyl alcohol content will be no less than 25-30%. Due taking into account the existence in the dentifrice water composition of a large number of biologically active substances that have the ability to self-rusting, is necessary together with ethyl alcohol, the existence of a preservatives that provides stability and expire of the elixir no less than one year.

International Scientific Conference Future Technologies and Quality of Life 29 September – 1 October 2017, Batumi, Georgia.

Pre-processing of raw material (quinces, cherries, elder) for getting vitamin and enzymatic complexes

L Targamadze, N. Gelovani, I. Gvelesiani, I. Tsomaia, D. Ghughunishvili-Songulashvili

International Scientific Conference, Future Technologies and Quality of Life, 29 September - 1 October 2017, Batumi, Georgia

Resume

The purpose and objectives of the research: To obtain vitamin and enzymatic complexes form vegetable and animal origin raw material, technological means of processing plant raw material and modern, improved methods are needed. Simplicity and accessibility of selected methods.

Research methodology

1) To obtain vitamin and enzymatic complexes, we selected plant raw material containing biologically active substances and made their characterization.

2) We conducted pharmacognostic research on all plants that are in the composition of multicomponent plant collection. Determined their assessment criteria; Preliminary experiments of biologically active substance content in the leaves of cherry (*Cerasus vulgaris* Milli) and elderberry *Sambucus ebulus* L, we selected extracting reagents of biologically active substances.

3) We carried out the experiments on composition of biologically active substances in the fruits and leaves of quince (*Cydonia oblonga*) and elder (*Plores Sambaci nigrae*);

4) We developed methods for determining biologically active substance properties and identified the norms of content in the selected plants according to regions of Georgia;

5) We studied the effect of extraction on way out of biologically active substances from plant collection, in order to work out the scheme of getting dry extracts from existing raw material and determine the quality indicators;

6) Particular attention is paid to the selection of technological processes of fruit drying;

The results and conclusions: As it is confirmed the way we will maintain vitamins, will not lose useful properties of the product, even more- will add them – is the fruit drying. Thanks to this method, fruit will become a concentrate of vitamins. Moderate use of dried fruit – no more than 100 g /day – does not cause the increase of blood sugar and weight. Along with vitamins, all micro and macro elements of these species are retained in dried fruit.

Sialonic and Small tungsten composite materials

Z. Kovziridze, N. Nizharadze, M. Balakhashvili, G. Tabatadze, N. Darakhvelidze
Journal "Ceramics" 2017

Summary: Coal: The monograph reviews technologies in order to receive sialonic and small tungsten composite materials and physical and chemical processes flowing there, the properties of materials and the ways of their improvement, material science issues.

Calculation of the amount and free volume of microspheres at per unit volume of the suspension, depending on the internal diameter and wall thickness.

N. Sinauridze, S. Badzgaradze, N. Kutsiava, T. Kantaria, T. Kantaria, R. Katsarava

Summary: One of the convenient and promising ways to deliver pro-controlled drugs is the inclusion of microspheres obtained on the basis of polymers. (In microcontainers carrying drugs) Drug loaded microcontainers are taken and used in the liquid phase (mainly in water) as a suspension. Journal "Ceramics" T. 19 N 1 (37); 2017; pp. 20-24.

A SYSTEMATIC STUDY OF FABRICATING DRUG DELIVERY MICROCAPSULES MADE OF AMINO ACID BASED BIODEGRADABLE POLYESTER AMIDE.

Kantaria Tem, Sinauridze N., Kantaria Teng, Badzgaradze S, Kutsiava N, Tugushi D, and Katsarava R.

SUMMARY: The paper deals with a systematic study of fabricating microcapsules destined for numerous drug delivery applications. The microcapsules were made of biodegradable poly(ester amide) constituted of amino acid leucine, 1,6-hexanediol and sebacic acid using a water-in-oil-in-water (w/o/w) double emulsion-solvent evaporation method. The influence of various parameters such as a concentration of the polymer in organic phase (dichloromethane), a concentration of a surfactant in water phase, nature of a surfactant in the water phase, and a

homogenisation rate of the secondary emulsion were studied in terms of the size and size distribution of the microspheres.

Journal "Ceramics" t. 19 N 1 (37).

"Neutralization of Paper-based Historical Documents Using Local Bentonite Clays"

Students: Ketevan Bakhutashvili, Lia Gamtsemlidze,

Heads: Maia Tsverava PHD Associate Professor Tamar Gagnidze

Annotation: Full neutralization of the specimen using bentonite clays; Natural lamination effect while processing the material with the suspension of bentonite clays; Improvement of optical characteristics of the paper.

GTU Students' Open International Scientific Conference - Thesis Collection – 2017

Create an innovative complex of pipes from the stainless steel stainless steel sheet

Jalilashvili T.O., Mikadze O.Sh.

ABSTRACT:

Currently, in world practice, the production of steel pipes suture consists of two stages: steel smelting, manufacture of steel sheets and production of pipes from steel sheets. We have developed the technological scheme providing for the integration of the two stages within a

single metallurgical complex. The enterprise of this type will guarantee 1) fulfilment of orders in the shortest possible time; 2) reduction of production costs; 3) reduction in capital construction costs due to compactness; 4) high quality of environmental protection.

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OPTIMIZATION OF SILICOMANGANEZE MELTING PROCEWSS IN PURPOSE OF INCREASING USEFUL USE OF MANGANEZE AND SILICA

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Abstract:

It is determined that the process of silicates production is impeded and conducted in gas phase but the speed of manganese and silica reduction is increasing. Using alkali metals in furnace charge and partial alteration of metallurgy coke with coal lets us increase useful use manganese and silica and improve main technical-economic indices of melting.

ENRRGY. № 1(81). 2017. Tbilisi. P.58-62.