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**TECHNICAL SCIENCES**

# TARACSACUM OFFICINALE EXTRACT QUALITY STUDY FOR ICE CREAM ENRICHMENT

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**Introduction.** Desire of the population for a healthy lifestyle and proper nutrition change the global market for products. Currently, the domestic dairy industry is facing the main task - development of new types of dairy and dairy-containing health products, as well as the improvement of existing technologies by enriching them with useful ingredients. Dairy products with wellness properties must not only satisfy the body's need for nutrients and energy, but also contribute to the enhancement of immunity and vitality. Improving the formulation of health dairy products, reducing sugars and energy value, improving quality values is possible through the application of local and non-traditional types of vegetable raw materials containing vitamins, micro and macronutrients, pectins and dietary fiber, polyunsaturated fatty acids, natural antioxidants, and possesses an increased nutritional and biological value.

An analysis of the literature on the use of herbal components in dairy products indicates a strong interest in the *Taraxacum officinale* dandelion. It is proved that roots of that plant contain: inulin (up to 24%), rubber (2-3%), bitter glycosidtaraxacin, mucus, resins, fatty oil, which includes glycerides of palmitic, oleic, linoleic, melissic and cerotic acids; taraxerol, taraxol, taraxaster, as well as phytosterols (sitosterol and stigmasterin). The high inulin polysaccharide content,

which has a wide range of pharmacological activity (antihyperglycemic, prebiotic, immunostimulatory, etc.), greatly expands the *Taraxacum officinale* extract application not only in medicine but also in the food industry.

Beneficial properties, high nutritional and biological value of *Taraxacum officinale* root extracts extend the prospects for creating biologically active additives on its basis, the use of which in the dairy industry will allow producing products comply with the modern concept of healthy nutrition and will increase competitiveness in the country's food market. The use of dandelion in the production of ice cream is not widespread, which allows creating a new range of products based on milk ice cream and *Taraxacum officinale* root extract.

**Aim:** selection of the biologically active substances'extractant from the *Taraxacum officinale* roots, development of parameters for the extraction process, quality evaluation of the extracts obtained, determination of the rational concentration of the selected extract in the formulation composition of a wellness purpose ice cream with immunomodulatory effect.

**Materials and methods.** The developed technology of an ice cream intended for health purpose with the use of vegetable components was selected the object of study in the course of work. Water, cheese whey and skimmed milk were selected for the *Taraxacum officinale* roots extraction. The extraction process was carried out at a temperature of 40, 50, 60 °C for 30, 60, 90, 120 minutes. Sensory (taste, odor, color, consistency) and physico-chemical parameters (weight fraction of polyphenol compounds, inulin and total sugars) were selected as criteria for evaluating the quality of extracts obtained and the efficiency of the extraction process.

When performing studies, the polyphenol compounds weight fraction was determined with the help of a photometer CFC-3, the inulin and total sugars weight fraction - by the Bertrand method.

**Results and discussions.** The results of studies are presented in the Table 1.

**Table 1**

**Quality indicators of dandelion extracts**

| Indicator | *Taraxacum officinale* extract | | |
|---|---|---|---|
| | water | cheese whey | skimmed milk |
| | Value of an indicator | | |
| Sensory indicators | | | |
| Taste and smell | Spicy herbs. There is a bitter taste of dandelion roots. | Dairy. There is a bitter taste of dandelion roots. | Sourish.There is a bitter taste of dandelion roots. |
| Color | Dark brown. | Pale brown, similar to black tea with milk. | Pale brown, similar to black tea with milk. |
| Consistence | Liquid, homogeneousthroughout, without sediment. | Liquid, homogeneous throughout, without sediment. | Liquid, homogeneous throughout, without sediment. |
| Physico-chemical indicators | | | |
| Polyphenolsubstances weight fraction, mg/100 g | 206,1 ± 12,5 | 314,2 ± 12,5 | 317,2 ± 12,5 |
| Inulin weight fraction, mg/100 g | 8,39 ± 0,5 | 1,75 ± 0,5 | 2,0 ± 0,5 |
| Totalsugars weight fraction, mg/100 g | 21,9 ± 1,0 | 10 ± 1,0 | 10,7 ± 1,0 |

The rational parameters for the process of polyphenol compounds extraction from the roots of dandelion are as follows: temperature -50 °C, duration -120 minutes, the *dandelion:extractant*ratio– 1:10.

**Conclusions.** The following has been found as a result ofstudies performed: the cheese whey based extract from the dandelion roots contains the most acceptable sensory indicators; it contains a sufficient amount of biologically active substances that allows it to be applied as a raw material component in formulations of new types of health products, incl. milk ice cream with herb components added. The rational concentration of *Taraxacum officinale* dandelion extract in a milk ice cream of wellness purpose was experimentally established. It is determined that one serving of a milk ice cream enriched with herb components (90 g) contains 0.34 mg of inulin, which satisfies the daily requirement foran adult (10 g) by 0.0034%.