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The use of dandelion root (*Taraxacum officinale* Wigg.) as non-traditional raw materials in technology of functional beverages fermentation

In the process of research the extracts of dandelion (Taraxacum oficinale Wigg.) high in inulin were extracted. It can be used to prepare fermented beverages as a source of carbohydrates during the fermentation. There were selected the optimum conditions for extraction of inulin from roots.

Inulin is a polysaccharide consisting of residues of β-D-fructose contained as the spare substances in the dandelion and some other plants belonging to the family Asteraceae. In recent years a growing interest in inulin as prebiotic, a component of the protective environment during freeze-drying. Chemically synthesized derivatives of inulin significantly reduce the surface tension and can be used as Surfactants [2].

Inulin is a source of fructose, which can act as a sweetener in the food industry in the production of fermented beverages.

The roots of the dandelion is the raw material base for procurement of high-molecular inuline muktasana. Thus, according to the literature, its content in the roots in the autumn is approaching 40 % [1].

Also in the autumn in the roots of the dandelion accumulates a large number of other carbohydrates (18 %) [1], in particular, fructose and sucrose, proctozone that are a mixture of oligomers and polymers in which the molecules of fructose linked by the formation of β-2,1-bonds, and as the end groups are usually glucose molecules [1].

We studied the effect of temperature on the extraction of carbohydrates, including inulin from the roots of the dandelion. The extraction was performed at 40 °C, 50 °C, 55 °C, 60 °C, 65 °C, 70 °C, 75 °C, 80 °C. After extraction determination of total carbohydrates in the extracts was performed by standard methods [1]. The results of the analysis shown in Fig. 1.

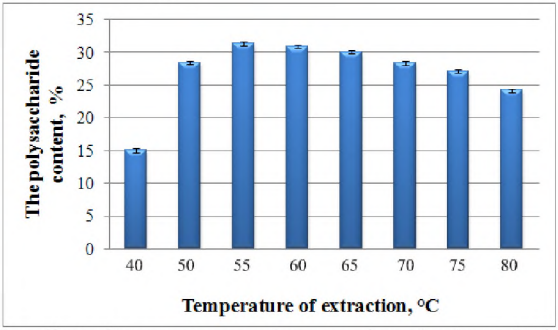

Fig. 1. The effect of temperature on the extraction of polysaccharides from the roots of dandelion (*Taraxacum officinale* Wigg.)

Considered temperature interval from 40 to 80 ℃. At temperatures below 55 ° C was observed a gradual increase in the concentration of total sugars from 15 to 32 %, in the temperature range from 60 to 70 ° C, these values were almost constant, and at values above 70 ° C decreased to 24 %. Thus, we have established that the optimum temperature of extraction is 55-60 ℃. The decrease in the concentration of sugars at temperatures above 70 ° C may be due to their partial oxidation or decomposition under the action of temperature [2].

The obtained extract was concentrated to a solids content of 40-50 %. Ready-made concentrates can be used to prepare fermented beverages as a source of carbohydrates during the fermentation.

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