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Collection of abstracts by leading scientists, specialists and young researchers in the field of food science, technology, chemistry, economics and management presented to the Congress

The congress addressed the following topics:

FOOD EXPERTISE, SAFETY AND TECHNOLOGIES

- **Food Expertise and Safety**
- **Food Technologies**

ENERGY SYSTEMS FOR FOOD CHAIN

- **Energy Efficiency**
- **Machine Building for Food Chain**
- **Intelligent Control Systems**

NATURAL BIOACTIVE COMPOUNDS, FUNCTIONAL AND NATURAL FOOD PRODUCTS, PACKING, STORING AND PROCESSING

- **Natural Bioactive Compounds, Functional and Local Food Products**
- **Packaging, Storing and Processing**
- **Food Processing**

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A STUDY OF THE VISCOSITY OF WATER SOLUTIONS OF INULIN — THE FUNCTIONAL FOOD INGREDIENT

A study of the viscosity of water solutions of inulin — the functional food ingredient.

The functional food products technology is based on a modification of the composition of traditional products, aimed at increasing their nutritional value by means of increasing the content of beneficial (useful) ingredients.

Inulin is a perspective ingredient for the production of dietary, functional low fat and low sugar foods with improved structure, stability and taste sensations.

To ensure product's balanced nutritional profile and excellent taste properties, it is necessary to carry out a thorough study of physicochemical properties of the ingredients, especially their viscosity.

The diluted solutions of high molecular (macromolecular) compounds should be considered as thermodynamically stable (monophase) systems, which are genuine solutions of substances with a high molecular weight.

The measuring of the viscosity of these solutions allows to judge about the molecular weight of the polymer, if the system's constants are known. Measuring of the viscosity allows to accurately monitor (observe) the changes in molecular weight, for instance, in the process of splitting or, on the contrary, in the process of macromolecule's growth. For this purpose there is viscometric method that has become widespread due to its simplicity, speed and possibility of measuring in various temperatures and using various solvents.

We examined the viscosity of diluted water solutions of inulin, extracted from tubers of Jerusalem artichoke, of concentration between 0.1% and 5%. Kinematic, relative and specific viscosity was measured by a usual method using viscosimeter. A series of experiments was carried out and the viscosity was determined for 1, 2, 3, 5% solutions of inulin in water at temperatures of 20, 30, 40, 50, 60°C.

KEY WORDS: *viscosity, solution, inulin*