

MICROSTRUCTURE OF MULTICOMPONENT IN WATER INULIN SOLUTIONS.

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Abstract

The researches earlier carried out by us have shown expediency of inulin application as bases for creation of new kinds of a butter (BC). It is revealed, that the additive of inulin essentially influences formation of structure of BC on the nanolevel, that improves its consistence and storage-ability. Therefore studying of changes of a microstructure of inulin in water phase BC is expedient. The butter enters into a diet in hospitals, sanatoria and all population of Ukraine. The butter with filler uses special demand of consumers. Therefore we conduct works on creation on a inulin basis new kinds of BC with flavouring additives - chicory and fructose which possess diabetic properties. It has been earlier revealed, that the additive of inulin essentially influences formation of a crystal and water phase of a butter. On structure of SM essential influence is rendered by structure of a water phase in which researched additives are dissolved.

Studied formation of a microstructure of water solutions inulina, chicory, fructose and their mixes in a water phase. Modeling solutions investigated a method of the microstructural analysis. Used optical and polarizing microscopy.

Researches have shown, that water inulin solution form dendrite structure. The microstructure of water solutions of chicory was characterized by the big version of structurization. Set of fine crystals of three and the quadrangular form; occasionally located large and fine crystals as luminous disks consisting of concentric rings of various painting, and also many-sided crystals of yellowy-brown color. The microstructure of water solutions of fructose has consisted from needle, stick-similar and branch-similar the ramified needle crystals.

Research of two and three-components mixes have revealed ability of inulin to form in mixes a version of structures: type sphere, linear, filamentous, the bound strings of yellowish color. On a background of threadlike structures of inulin' crystals and not luminous structurizations of components of a mix were formed.

Inulin ability is established to pass from one structure in another, that depends on component structure of a mix, temperature of a mix and other factors.

The received data are used for definition of optimum ratio of inulin with researched components that will provide formation of plastic structure, and high organoleptic parameters at creation of new kinds of butter and spreads.
