

## **ELECTRO-MICROSCOPIC INVESTIGATIONS OF THE STRUCTURE OF BUTTER WITH INULIN**

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The purpose of the work is to study the microstructure of butter with inulin by the method of electronic microscopy.

The samples for the electro-microscopic investigations were made by breaking the immediately-frozen preparation of butter into parts.

We studied the samples of butter with inulin and those control (without additions), the fresh samples and those which were kept in the temperatures of +5C and -18C.

Analysis of the microstructure of fresh butter (the control sample) showed the presence of insignificant number of both undamaged and broken (the kernels with the remains of a cell) fat balls. The microstructure of butter with inulin had a great deal of undamaged balls whose measure were bigger than in the control sample. We affirmed the ability of a native balls' cell to connect inulin. With that, an additional cell forms around the balls. Electro-microscopic photographs of the butter samples show that inulin strengthens the connection of the fat ball cell and kernel. The connection between a cell and the plasma and liquid fat is weaker in butter with inulin.

There is exposed that the storage temperature for butter with inulin does not lead to fat balls' destruction. The control samples, stored in the same conditions, had the fat balls damaged.

In the structure of butter (control samples) stored in -18C, we noticed the presence of a significant number of plate-shaped crystalline aggregates, which conditions the product's fragility. The microstructure of butter with inulin is characterized by less number of thin crystalline aggregates, and the plasticity of interglobular space.

Electro-microscopic investigations exposed the inulin's influence on the microstructure, its role in the formation of butter's plastically consistency. The results of the studies will be used in working out the fat-containing milk products and margarine with medical and preventive properties.