

TECHNOLOGICAL FEATURES IN THE PRODUCTION OF SOFT CHEESE «SVITANOK»

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Because of the conditions of reduction of milk for cheese producing volumes the actual task is the development of cheese technology with the use of raw materials of vegetable origin. One of economic technologies of soft cheese making is the technology on the basis of thermo-acid coagulation of albumins of milk by a sour whey.

Such technology gives an opportunity to increase the exit of the prepared product due to besieging of whey albumins. Albumins and globulins promote the biological value of cheese, because amino acid composition of the prepared cheese broadens due to such irreplaceable amino acid as lysin, leucine, isoleucine and tryptophane. The prime price of such cheeses considerably diminishes due to diminishing of norm of charges of raw material and due to reduction of technological process of making and cheese ripening. One of perspective directions of reduction of prices of the prepared product is the use of vegetable oils. The use of vegetable oils also gives an opportunity to extend fat-acid composition of the prepared product.

With the aim of establishment of behavior of thermo-acid coagulation of the milk-vegetable mixture, made from fat free milk, dry fat free milk and vegetable oil, the research was conducted in the laboratory terms of the department of technology of milk and dairies.

During experiments the temperature of coagulation was varied from 80 °C to 98 °C, whey acidity — from 120 °T to 250 °T, dose of whey addition from 8 % to 20 %. Milk-vegetable mixture was normalized after the albumin and fat from the calculation of receipt of the prepared cheese with mass part of fat in a dry substance — 40, 45, 50 %. Acidity of whey was varied due to addition in pasteurized and chilled to the temperature 38 °C milk of ferment on the clean cultures of acidophilous bacterium of not mucous race. During realization of every series of experiments cheese was prepared from identical raw material and with identical technology except the size of indexes which was investigated. Authenticity of receipt of results was provided to 3 – 5 time realizations of experiments. The experimental standards of cheese were compared to the cheese made from normalized milk by coagulation of sour whey with temperatures 90 °C on the standardized technology. Basic indexes after which the optimization of technological indexes was conducted were organoleptic indexes, the exit of the prepared product, the ability of well-educated cheese mass to forming.

On the basis of the conducted researches graphic and analytical dependences are got that reasonably describe the process of thermo-acid coagulation of milk-vegetable mixture with a sour whey.

The basic technological parameters of realization of process of thermo-acid coagulation were stated and the technology of soft cheese was worked out which

consists of next basic operations: heating of fat free milk to the temperature 45 °C, adding the dried fat free milk, isolation during 35 minutes, adding vegetable oil, dispergation of mixture, heating of mixture to the temperature 90 °C, bringing of whey with acidity 210 – 230 °T with temperature 45 °C. Cheese mass was maintained in a hot whey during 5 minutes conducted forming and self pressing. After salting cheese was cooled to the temperature 6 – 8 °C.

For applying of new technology in industry normative documentation was worked out TU U 15.5-02070938-109:2010 «Soft cheese «Svitanok» and the technological instruction to these TU.

Test in productive terms on LTD. «Brusilovskiy creamery» the Zhytomyr region confirmed the results of laboratory researches. The pre-production models of cheese on organoleptic, physical and chemical and microbiological indexes answered the requirements of the worked out Technical requirements and operating state standards. After the calculations of production workers an economic effect from the elaboration of new technology on Brusilovskiy creamery is 440 UAH on 1 tone of the prepared cheese.