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MODELING OF DEPENDENCE OF ABILITY TO CONNECT A MOISTURE OF MEAT FROM PRESSURE

Now interest in edible techniques is called with nonconventional expedients of production which can be used for intensification of technological processes. One of such techniques is using of high-pressure. High pressure capably to kill microorganisms and to attach foodstuff of a new consumer properties. Some authors are given examples, what after handling by high pressure of food are preserved such properts, as natural odour, color, texture of meat. By many authors it is marked, that at handling by pressure losses of vitamins and macrocells are reduced to a minimum. In this connection designed and such techniques for production fruit and vegetable juices, for degermination of such yields, as a cheese, meat, a fish etc. [3] are used. The positive effect by high pressure detected in a series of technological processes: heat, quiescing, etc.

Many authors establishe perspectivity of using of high-pressure by production of bacon. Production of this foodstuff enough long-lived process, and using of hyperpressure allows to reduce considerably a run time without losses of quality of a finished stock.

To frame quality yields with high edible indexes, it is necessary to define optimal parameters of technological process (temperature, pressure, time). At pressure 400-800 MPa and temperature 25°C it is possible to achieve culinary readiness of meat products. Thus the time of treatment of meat food contracts many times over. Their readiness is reached in 15 minutes. It is possible to reach the greater intensification of process if to use heat up to 60-70°C. However it will reduce in the considerable losses of vitamins and decrease of economic benefit of using of the given technique.

At handling by pressure from above 400 MPa discolouration of meat from brightly red up to gray-brown which is peculiar to ready meat is scored. Change of colourity occurs owing to an oxydation of a heme of myoglobin, as at heat processing.

Also it is necessary to mark, that on gustatory qualities production received with using of high-pressure does not yield production prepared by

a traditional expedient. However, some authors score, that the meat prepared thus has more a sweet taste as contrasted to a control specimen [3].

The framework of meat treated by pressure much more gently and more juicy, than meat treated by a traditional method [1]. One of the important advantages of using of high-pressure in edible techniques is absence of limitations on the geometrical shape, the size of meat and a culinary part.

As a result of handling meat at the investigated parameters of support of technological process vitamins and trace elements are as much as possible preserved, the strain of a yield is not observed.

The amount of the bound moisture in treated meat is augmented [2]. We tested high-pressure influence on change of ability to link a moisture of meat at handling by high pressure. For this purpose we have taken fashions of meat after forcing by pickle. Samples have packaged into a vacuum coating. We have treated meat pressure from 100 up to 600 MPa at a run time of 15 and 30 minutes at temperature 25°C. After handling it is model, we have spent examinations on definition of ability to link a moisture.

Ability to connect a moisture was defined by a method of pressing.

We have analysed received datas and came to an output, that dependence of ability to connect a moisture from pressure looks like

$$x = a + b \cdot e^{-(c \cdot P + d)^2}$$

With the help of the program of statistical data processing optimal parameters a , b , c i d have been picked up.

The terminating equation of dependence (time of processing is 30 mines) looks like $x = 88,2869 - 16,4829 \cdot e^{-(0,0098 \cdot P - 2,1128)^2}$.

The coefficient of the Pearson is $R^2=0,97$. It testifies to reliability of datas which have been received. Thus, if to analyse the equation of dependence of ability to connect a moisture from pressure, it is possible to define optimal parameters of handling to receive maximum moisture content in a yield. At an injection meat by pickle fractional excretion of pickle is observed. Using of optimal parameters will allow to reduce considerably losses of pickle.

So, high-pressure utilization for deriving ready bacon is rather perspective. The long-lived stages of salting and heat processing are substituted by one process of handling by high pressure.

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