"Optimization Of the Process Of Drying Sausage Products With the Help Of Water Activity Index"

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Introduction

Food products including meat and milk are complex heterogeneous biological systems. Most of them contain a considerable amount of water, which greatly influences their physical, chemical and biochemical properties. In this connection to optimize hydromechanical, hydro- and hygrothermal, biochemical and microbial processes it is necessary to control the content and the state of water in foods. For these purposes the most acceptable and informative of all thermodynamic indices is water activity index. At present this index acquires an ever more importance for control of meat products quality in the process of technological production.

Materials and Methods

To determine water activity in meat products the method and device have been developed. The principle of action of the device for determining water activity is based on the simultaneous measuring the temperature of the product put on the indicator and the temperature of the "wet thermometer". While determining water activity on the device a thin layer of the product investigated is put on the indicator. After this the indicator is put into the device. Distilled water is fed into the indicator serving as the "wet thermometer". A ventilator is switched on. In 3-5 minutes the readings on water activity of the device are recorded. The device includes the microprocessing technique, which gives the values of water activity at the temperature of 20°C on the screen, though the temperature of the product doesn't

equal to this t°. This device is used to determine water activity while formulating sausage meat with protein products as well as while optimizing the process of drying sausage products. The quality of sausage products depends on the quality of the sausage meat which in its turn depends on optimum carrying out all the technological processes and the formulation. The process of producing sausage meat consists of salting, fine grinding, mixing, stuffing and batching. Because of the absence of effective methods and means of the control of water state in the process of drying the quality of sausage products deteriorates which causes great losses. For optimizing the process of drying sausage products water activity index was used in production conditions. Water activity values of sausage products were investigated by means of the developed device during the process of their drying in the drying chamber. As a result of the study the dependence of sausage products humidity on water activity during the drying process was determined. Table I shows the values of humidity and water activity of the finished product. The received data on water activity of sausage products during the drying process give the possibility of optimizing the parameters of drying agent (air) in summer and winter periods and regulating the work of asorber and refrigerating unit for maintaining parameters of relative humidity φ = 75% and t° = 12°C of the drying act.

Literature:

Technology Of Meat and Meat Products (edited by I.A.Rogov). M.: Agropromizdat, 1988.

Table I.

No	Sausage products	Humidity %	Water activity a_w
1.	Tambov uncooked smoked	21.0	0.890 - 0.891
2.	Choice cooked smoked	37.3	0.940 - 0.925
3.	Moskvoretskaya semi-smoked	52.0	0.932 - 0.940
4.	Ukrainian semismoked	43.0	0.935 - 0.937
5.	Alma-Ata semismoked	43,0	0.936 - 0.938
6.	Steppe semismoked	47.0	0.937 - 0.938
7.	Ala-Tau semismoked	37.0	0.936 - 0.937
8.	Pork semismoked	44.5	0.935 - 0.936
9.	Moscow cooked smoked	38.0	0.925 - 0.930
10.	Cervelat cooked smoked	38.0	0.932 - 0.934