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ANALYSIS OF QUALITY MEASURE THAT QUALITY-RELEVANT OF BAKERY PRODUCTS

Introduction. Bakery products are the main food products, which are in the first group (Food products for mass consumption) in the systematization of the main types of food products according to their purpose. Ukraine produces a lot of bakery products, the number of different products related to bakery products exceeds 300. Bakery products include such products as: various types of loaves and bread, braids, bagels, rolls, etc. In this paper, we will consider the example of making a loaf "cut". According to DSTU-P 4587: 2006 "Loaf" "sliced" consists of: wheat flour of the highest grade, prepared drinking water, baking yeast, table salt, white crystalline sugar, skimmed milk powder, table margarine "Special milk" 82% fat (sunflower oil), drinking water, salt) [1]. As a rule, the main technological processes of bakery production are mechanized. Consider the production of loaf and the processes that accompany it. Description of the technological process and the choice of controlled parameters.

Production of loaf. Before the production of the loaf, raw materials are prepared, and more precisely: store, mix, aerate and sift flour, prepare and dose water, salt solutions, sugar, yeast emulsion, wash and clean various additives and spices. Flour, which is the main raw material of production, is aged at the plant for at least 7 days. After preparation of raw materials knead and ferment the dough and dough. Then, using dough dividers, the dough is divided into equal pieces by weight. Next, the blanks are formed, ie the pieces of dough are processed in such a way that they acquire a characteristic shape, increase the gas and shape retention of the workpiece by sealing the surface layer. Then carry out the aging of the dough pieces in the chambers for 50 minutes at a temperature of 30-34 ° C and a relative humidity of 60-75%. After aging, bakery product is subjected to hygrothermal treatment at 150 ° C for 2 minutes, and then sent to the oven and baked at a temperature of 190 ° C for 20 minutes. And finally, the loaf is cooled in the cooling compartment for 1-2 hours.

Description of the technological process. Flour for production is delivered by special flour trucks, which allow to fully mechanize the delivery and unloading of flour at the bakery. From the flour truck the flour arrives in the form of an aerosol in the form of an aerosol to the receiving board (fig. 1 - 13), and from it through pipes (fig. 1 - 14) to the silos (fig. 1 - 8). In silos flour is stored separately by varieties and grades. From silos flour of different grades is mixed by rotary feeders (fig. 1 - 6) and as an aerosol is moved by pipes. With the help of a switch (fig. 1 -16) the aerosol goes to the cyclone (fig. 1 - 17), from there - to the sieve (fig. 1 - 18), the intermediate hopper (fig. 1 - 18)) and weight (fig. 1 - 19). Weighed flour is fed by aerosol transport through pipes into production hoppers (fig. 1 - 20), and from there - in a high-intensity plate kneading machine (fig. 1 - 24), where it is mixed with water, salt solution and yeast solution. from batchers (fig. 1 - 25). The liquid slurry kneaded in this way is poured into the section hopper of the fermentation apparatus (fig. 1 - 23), where it is fermented for 120-150 min at a temperature of 30-22 ° C.

Then the dough with the support of a rotary pump is fed into a disk kneading machine (fig. 1 - 24), there the dosing station (fig. 1 - 25) serves water, salt and other components. The dough is kneaded for 3 to 7 minutes, after which it ferments in the hopper (fig. 1 - 26) for 30-60 minutes.

The fermented dough enters the hopper of the dough separating machine (fig. 1 - 27), which produces separate test blanks of the set weight in the range of 0.8-1.2 kg. The latter are fed by a belt conveyor to the rounder (fig. 1 - 28), and then by means of a pendulum stacker (fig. 1 - 33) are loaded into the cradles of the conveyor rack cabinet (fig. 1 - 32), where they are 30-55 min at a temperature of 32-35 ° C. After that, the blanks are transferred to under the conveyor oven (fig. 1 - 31), where they are first steamed (hygrothermal treatment), and then baked at a temperature of 200-230 ° C for 35-45 minutes.

Ready loaves with the support of the stacker (fig. 1 - 30) are loaded into containers (fig. 1 - 29), the latter are marked and sent to the expedition and then to the store. The duration of the technological process of bread preparation, starting from the reception of flour and ending with the issuance of finished products, is 9-10 hours. Most of these industries operate around the clock in three shifts. In advanced foreign countries, bakeries work in one or two shifts, which meets modern standards of healthy society [2].

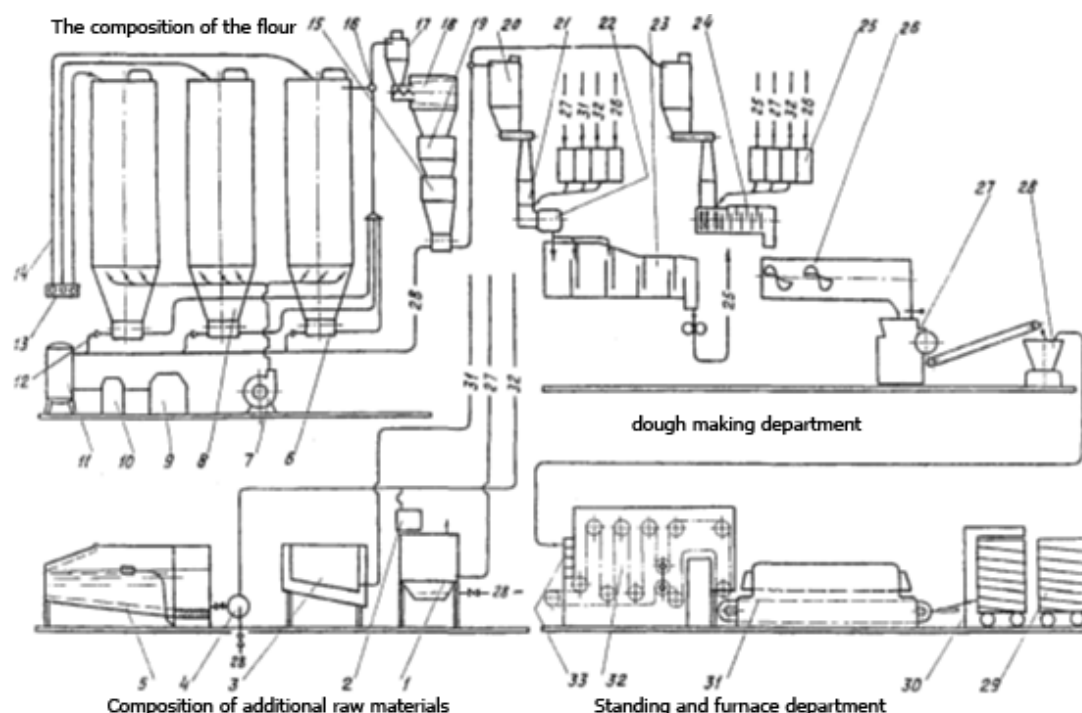


Figure 1 - Machine-equipment scheme of production of wheat hearth bread

Parameters that quality-relevant of the finished product. According to DSTU-P 4587: 2006 to organoleptic indicators include: appearance (shape, surface, color), condition of the crumb, taste, smell. Physico-chemical parameters include moisture of the crumb, acidity of the crumb, porosity crumbs, mass fraction of sugar in terms of dry matter, mass fraction of fat in terms of dry matter. These indicators of product quality are influenced by at least two groups of factors, the first group is the quality and conformity of raw materials, the second group is the level of technological process.

One of the most important indicators of the quality of bread is softer. According to DSTU-P 4587: 2006, the porosity of high-quality bread crumbs must be at least 68%, there must be no voids in such bread, the presence of foreign objects is not allowed in the loaf and it is very important that the crumb is well baked, otherwise it may be sticky and wet [3]. The crumb of quality, well-baked bread should take on its original shape after being pressed with a finger. If the bread is not baked with sufficient quality, then we will not be able to achieve such a result and such a product will not be of sufficient quality. In order to improve the quality of baking our products, we need to control the temperature and the baking process.

Conclusion. The production of bakery products has a rather complex technological process and includes many stages of production, so the quality of bread depends on many

factors. One of the main indicators of quality is the quality of softer bread. The quality of the softer bread is affected by the quality of the baking, because if the quality of the baking is poor, the softer can be wet and sticky. Therefore, in order to get a quality product, you need to control a several factors, one of the most important of which is the control and regulation of temperature and intensity of baking.

References

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