

product from the mucous membranes and the serous membranes in one apparatus and automating this process. Application of synergistic effect will allow to make a compact design that will reduce the number of required personnel, reduce the time of the technological process, using the conveyor, improve the quality of products and reduce the cost of manufacturing equipment. Thus, the set of proposed features allows to provide the expected technical result.

IMPROVING THE PROCESS OF PREVALENCE IN PERFORMANCES

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Steam convectors are one of the most technologically advanced and functional apparatus used in restaurants. Their functionality significantly exceeds a number of devices that are traditionally used in the hot shops of restaurants. However, the maximum power consumption of the apparatus remains rather high and is at a level of 18–21 kW/hour. In addition, it should be noted that as a steam source in steam convectors, either a built-in steam generator is used, or there are open TENs in the chamber that water is sprayed through the nozzles. At the same time, the cost of vehicles with a built-in steam generator is much higher, so to reduce their value on some models, steam generators are not installed. Together with lowering the cost at the expense of the exception, the level of technological capabilities of the device is reduced, as well as the intensity of the introduction of these devices in the enterprises is reduced. The main factor that causes this state of affairs is the process of vapor formation, the creation of which takes place in the steam generator. Most steam generators are equipped with TENs, which require some water treatment to ensure durable and efficient work. Owners of restaurants neglect the need for water treatment, that is, using water softeners, thereby using untreated water, which leads to the formation of scale and razing on the heating elements, pipelines of the apparatus. It should also be noted that such kind of heaters as TEN is quite energy intensive and inertial. Therefore, we propose to use electrode steam generators to reduce energy consumption, increase the reliability of the apparatus and increase the speed of access to the operating mode.

The principle of operation of the steam generator proposed by us is as follows (Fig. 1): the prepared fluid (in the case when the steam acts as an intermediate coolant – a mixture of distilled water and an electrolyte) enters the tank through the filler hole. In front of the steam generator, due to the installed filter, it is cleared of impurities, which helps to prevent the occurrence of a circuit. During the opening of the electromagnetic membrane valve, the liquid through the pump through the inlet pipe enters the body of the steam generating unit. Then the liquid is washed by phase electrodes.

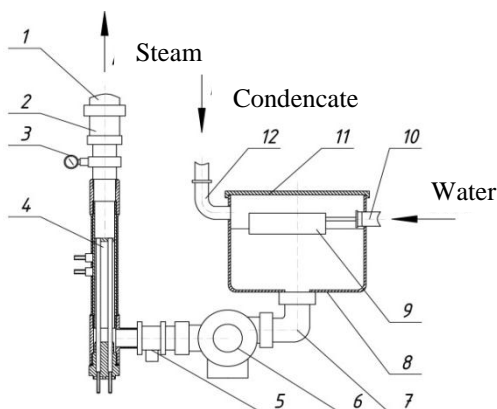


Fig. 1. Schematic diagram of the electrode steam generator: 1 – fitting; 2 – electromagnetic valve membrane; 3 – pressure gauge; 4 – electrode node; 5 – the return valve; 6 – pump; 7 – kneeling; 8 – nutritional capacity; 9 – level regulator; 10 – the connection pipe of water; 11 – cover; 12 – condensate drainage connector

During switching on the power between the electrodes and the zero contact, there is an alternating electric field that causes the heating of the liquid. To prevent electrodes locking and fixing, they are further isolated from the case by an insulator. Ready-made process steam through the fitting, which overlaps the valve, is fed to the technological apparatus. Excess liquid and condensate from the processor with a condensate drain valve and a pipe fit into the liquid tank.

Electrode steam generators have a number of advantages and solve a number of technical and technological issues related to the operation of steam condensate units. These advantages are as follows: compactness of

placement, lack of scale on the heating element, reduction of energy consumption in 2–2,5 times, reduction of the time of the device's withdrawal into operating mode, reducing the material costs of manufacturing the apparatus.

TECHNICAL EQUIPMENT OF PRODUCTION LINE OF PECTIN PRODUCTS FROM RAW MATERIALS

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Statistical data concerning the development of the world economic activity give grounds for making the conclusion that the study the technological processes of obtaining pectic products will give the best results if you choose abroad citrus residues as raw material for the production of pectin. This is primarily due to high content of in these types of plant material, the degree of esterification (the use of pectin in food industry), as well as a large number of juice producing plants. However, the main advantage of the research is tropical citrus, in particular oranges and lemons.

In accordance with the chosen pectin-containing plant material for the development of hardware equipment of the line for the production of pectin products, it is necessary to select a scheme of technological process.

The basic processes of pectin production technology can be presented in the form of two schemes:

1. Preparation of raw materials → primary extraction (removal) of substances → purification → concentration → deposition → crushing → washing of the resulting substance → separation of fractions → buffering → re-grinding → drying → pectin powder → further use.

2. Preparation of raw materials → chemical extraction (extraction) of substances → separation of fractions → concentration (ultrafiltration) → purification (diafiltration) → drying or preservation of liquid pectin → further use.

In our opinion, the second scheme of obtaining pectin is preferable, because it is less energy-intensive and more productive than the previous one. In addition, this scheme reduces the duration of obtaining pectin, and has a minimum number of equipment involved in the production of high-performance products.

A great interest in considering the process of obtaining pectin products is the way of extraction. Extraction today is the most effective