ANALYSIS OF METHODS STERILIZING EQUIPMENT AND CULTIVATION OF MICROALGAE PLANE FOTOREKATORE INDUSTRIAL TYPE

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More calls to world science is conditioned by the necessity of sustained economic growth, which inevitably leads to an increase in energy consumption and the negative influence of global anthropogenic greenhouse gases in the earth's ecosystem. Thus, the focus of recent research aimed to look for new, cheap, renewable energy or ways to reduce carbon emissions.

One of the most promising areas of energy generation complexes in heat and electricity use is microbial biotechnology.

Since the life cycle of unicellular microalgae accompanied by rapid metabolism and photosynthesis, and can be used as a filter carbon dioxide, and from the point of generation biosure.

Known physical and chemical methods utilization of carbon dioxide is expensive and energy-consuming. Therefore, the use of microorganisms is one of the most promising and relatively inexpensive method of recycling CO2, and their ability to accumulate in the cells of a large amount of lipids (80% in terms of dry weight), which makes microalgae promising for their use in the energy sector.

Methods of cultivation on a large scale has some differences, such as sterilization of the working reactor volume is through a concentrated solution of NaOH, which is sprayed in the workspace and then washed plenty of distilled water. This operation is repeated three times, after which the workspace and corresponding sensors are sterilized by germicidal lamps БУВ-40 for 2 hours and then washed with distilled water. At a time when the temperature and Ph level workspace is necessary parameters inoculums is introduced into the reactor.

Having analyzed a number of options for industrial cultivation of microalgae, open and closed systems, in the power management laboratory was developed flat vertical fotoreaktor, total size – 75 liter (Height 1000 mm, 500 mm width and 150 mm depth) and working - 50 liter.

The construction of the cultivator has several advantages over other systems Closed: simple design; a large light surface of the natural lighting with the possibility of artificial illumination; possibility of thermoregulation and regulation of gas supply; foundation, made in an inclined manner that promotes simple gathering culture for further research and the relatively large volumes of culture medium in the ratio of cost of manufacture.

The analysis method of sterilization equipment before laying fotoreaktor culture medium, the method of growing algae and the ratio of CO_2 emissions to the mixture aeration during the cultivation of algae. The selection of microalgae Chlorella Vulgaris Beijer, for further research and considered environment Fitzgerald in the modification Zehnder and Gorham №11 as further cultivation. Made flat, vertical fotoreaktor with a working volume of 50 liters, to research utilization of CO_2 and proposed his own method of sterilization of the bioreactor to generate biosure.