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INCREASED EFFICIENCY OF THE IMPROVED SUN SUN FRUIT DRYING DEVICE

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Abstract

The total amount of solar energy falling to Earth during the year $62 \cdot 10^{16} kVt/m^2$ is equal to. Today, solar collectors are the most efficient device for using solar energy. If the photovoltaic panels are solar energy $14 - 18\%$ This effect on the solar collector $70 - 80\%$ reaches. President of the Republic of Uzbekistan August 22, 2019 "On urgent measures to increase energy efficiency in the economy and the social sphere, the introduction of energy-saving technologies and the development of renewable energy sources", PQ-4422 Resolution No. 1 identifies further development of the use of renewable energy sources as a priority World research to reduce energy consumption in the drying of grapes and other fruits has resulted in a number of scientific findings, including the development of wet-heat treatment tools for drying and blanching grapes. (Chisinau Polytechnic Institute, Republic of Moldova); The use of surfactants to change the hydrophilicity of the surface of grapes and plums, as one of the effective methods of breaking down the quasi-stationary structure of the plant cell, created drying devices by electro-physical action on grapes. (Krasnodar Technical University and Moscow Institute of Food Industry, Russian Federation); primary aerosol treatment methods for grapes have been developed for primary drying (University of California, Washington State University, USA; Editions of the University of Barcelona, Spain; Dry Fruits Australia Inc., Australia); new efficient technologies and technical means of processing have been created simultaneously with the drying of grapes (Universite de Bordeaux, National School of Agricultural Sciences, France; Polytechnic Institute of Viseu, Portugal; Yildiz Technical University)

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Nowadays, advanced technologies have been developed that allow the product to be stored for a long time. In this regard, the achievements of chemistry, physics, biochemistry, biotechnology, biophysics, physiology, botany, agrochemistry, microbiology, horticulture, agricultural machinery, phytopathology, entomology, plant protection are being used. In Uzbekistan, the issues of harvesting, drying, storage and processing of agricultural fruits and vegetables are not studied in depth, and scientific and technical achievements in this area are not widely applied in production. Pittman Ch.U., Prakash N., Kravchenko G.M., Mohan D. on the use of solar energy in various technological processes. and the practical services of other scholars are great. Extensive research has been conducted by scientists in our country as well. This work, started in the 1960s by Professor GA Greenevich, academicians SA Azimov, GY Umarov, was continued by academician of the Academy of Sciences of Uzbekistan RA Zohidov and professor RR Avezov In this area, it is important for the national economy to combine the use of renewable energy with traditional energy and, as a result, to offer optimal and easy ways to generate electricity and heat. Heating or hot water from a solar collector can be used effectively for drying fruits. Of lands in our country $1m^2$ the energy of sunlight falling on the surface is approx $1\ kVt/m^2$ ga teng Karshi Institute of Engineering Economics at the landfill of the department "Alternative Energy Sources" On the basis of the research, a laboratory for improving the efficiency of the improved fruit drying device in agricultural conditions was created. (1-2 picture)

The recommended improved fruit solar dryer has the following advantages
- To make a geliocollete, it will take less cost and less labor.
- Electricity and fuel are not wasted;
- Mountains, deserts, cities and parks can be made in open areas.

Between the stone and steklovata, so that the stones laid for akkmulation in the device do not touch the steklovates at the bottom 6,5 sm Reykjavik boards of thickness are arranged in parallel. Parallel reyka moves the heated air between the boards according

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to the laws of aerodynamics. If we ensure the movement of air heated between the stones of each floor, the temperature difference between the floors is reduced, all stones in the collector will have the opportunity to warm up at the same temperature, and the temperature inside the collector will increase. The cooling of the temperature inside the collector will also depend on the speed of the moving air between the stone floors. Moving between the stones, through the heated air, the temperature inside the collector can be kept stable. The total amount of total heat collected by the solar collector in the water heater can be calculated as follows: $\sum Q(stack) = Q(water\ container) + Q\ (Tas\ back) + Q(collector\ hollow) + Q\ (aluminum\ pipe)$

∑ Q (YIG) - the total amount of heat collected for the heating of water; Q_(water tank)- the amount of heat received by the water tank; Q_(stone surface) - the amount of heat received by the aluminum pipe as a result of overheating of the stone surface; Q_(inside the collector) - the amount of heat received by the water tank and the aluminum pipe as a result of an increase in the internal temperature of the; Q_ (Alu pipe) -the amount of water in the aluminum pipe, Heat received by solar radiation; (1) increase the temperature of water in the geliocollector by increasing the heat parameters (sizes) in the formula can increase. The useful working coefficient of the solar collector will be equal to the part of the energy that the sun's light falls on the Collector receiving surface, which is converted into useful thermal energy. And the receiving surface of the collector will be equal to the surface on which sunlight is effectively exposed. Part of the light falling on the surface of the Collector reverses under the influence of reflection. Using the relationship between the amount of radiation we collide and the amount of radiation we radiate in the absorber, which has become thermal energy, the total amount of heat lost in the solar collide that is being improved can be calculated as follows Q_uq=Q_plan Q_plan+Q_(beton devor) + q_tag+Q_tip

Q_plyon - the amount of heat lost through the surface of the film:

Q_(concrete wall) - the amount of heat absorbed into the concrete wall of the Collector;

Q_tag - the amount of heat absorbed (lost) to the bottom (part of the earth) of the Collector;

Q_tir-the amount of heat lost by the collector through the plugs.

Improved sunscreen;

Q_tag is the amount of heat absorbed into the concrete wall by the amount of heat lost to the bottom of the Collector. Q_ (concrete wall)≈0

Q_tag ≈ 0

it is close to zero, almost heat is not absorbed into the concrete wall with the bottom of the collector without it (2) the formula will be as follows:

〖Q_uq=Q_plan 〗+Q_tir

Q_plyon-film in the formula to reduce the amount of heat lost through the surface, when the external temperature decreases in the evening, the surface of the Collet is closed with a material with low thermal conductivity.

Q_plyon≈0

〖Q_yuq≈Q_tip 〗

we can know that the efficiency of solar collars increases when used. In this solar cell, the useful working coefficient increases from 65% to 75% [3]. The lower part (the Earth) is treated with liquid stiklovata, betum to prevent the absorption of heat energy into and insulated with the resulting earth, covered with a film of light refractory foil glass over which it is dried. For aquaculture, deliberately spherical stone slabs are placed so that aerodynamic forces based on the Bernoulli law are generated at the surface boundaries of the flywheel and the heated air is moved through the hollow channels. Each floor provides movement of heated air between the stones, and the temperature difference between the floors is reduced, all the stones in the Collector are selected with almost the same density, amorphous is obtained as non-existent and warms up at the same temperature, as a result, the temperature inside the Collector increases, and in this case the density of heat energy increases. The cooling of the temperature inside the collector will also depend on the speed of the moving air between the stone floors. Through the heated air moving between the stones, the temperature inside the collector can be kept stable. It is desirable to seasonal use of sand, rock, water, aftol, diesel oil and other materials and substances used for akkmulatization into the Collector. If we look at this as an example of snow-covered rocky rocks, these stones will depend on the size of each of the stones, the number of stones, how many floors they are located, the aerodynamics of the air circulation between them [4]. The experimental experiments obtained showed that the temperature difference was observed for 24 hours on each floor of the snow-covered stones used in akkmulation Experiments show that the larger and flat the surface of the stone used for akkmulation, the more heat energy it accumulates in itself. It is desirable to use these rocks when solar radiation is high.On may 19, 2021, the Institute of Engineering and economics of Karshi conducted a survey of “Alternative Energies”.

The results obtained show that the materials and substances used for accumulations are low-cost, while they do not freeze in the winter, months of the day, precipitation should not rust the materials used in the days, do not undergo corrosion, avoid rotting. Analyzing the renewable energy resources in the region of Uzbekistan, we can say that the use of solar energy in the supply of electricity and hot water completely justifies itself economically in the conditions of Uzbekistan. [5].

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