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Prospects Of Use Of Solar Energy At Drying Of Cocoons

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Annotation: The article describes the prospects for the use of solar energy in the drying of cocoon raw materials.

Keywords: cocoon, collector, valve of adjustment, fan, source of heat, drying case, accumulator, rack.

High results are being achieved in silkworm breeding as well as in the construction of large-scale production in agriculture of our country. It should be noted that the technology of cocoon processing has also changed radically, and new technologies are being introduced.

Again, pictures of different types of cleaners in the drying of cocoon raw materials. Depending on the method of heating the wet material, the joints are divided into convective, contact and other types.

Air, gas or steam can be used as heat carriers. On what basis is the cocoon raw material cleaning plant supported.

It is known that the sun has been coming from the heat since mankind existed. In Uzbekistan, it is possible to easily use solar energy sources. The strongest part of our country consists of hot and sunny days. The process of growing and processing raw cocoons also occurs in early summer. Due to which it is possible to efficiently recover from solar energy in the processing of cocoon raw materials.

The main components of the solar energy system of the cocoon are the collector, the accumulator, the loading (cocoon transfer chamber) and the adjusting devices. The solar collector is cut in such a way that y solar cells receive the devices, converting this current energy into heat and sending it to the heat carrier for purifying air or purification (Fig. 1). The most common of the collectors gets a glass flat solar package. In addition, a number of complex collectors are being developed and put into practice. Bakiym collectors are obtained from such collectors.

A series of constructions of collectors with solar radiation collectors, moving and other structures are being created. They are designed for medium to high temperatures. However, in spite of this,

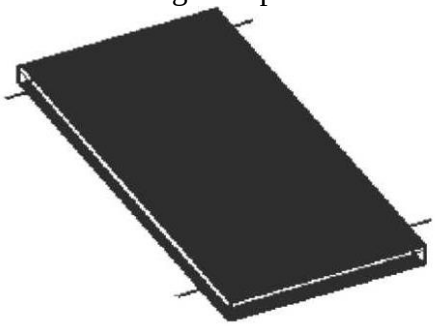

Figure-1. Appearance of a solar collector.

Flat solar collectors for water heating can be made of different materials (steel, gypsum, aluminum, plastic, etc.). However, their work is based on the same principle.

This is called the “greenhouse effect” and involves absorbing solar energy and converting it into heat energy with minimal losses.

Solar collectors can vary in design. However, the constructions still have a number of similar elements listed below.

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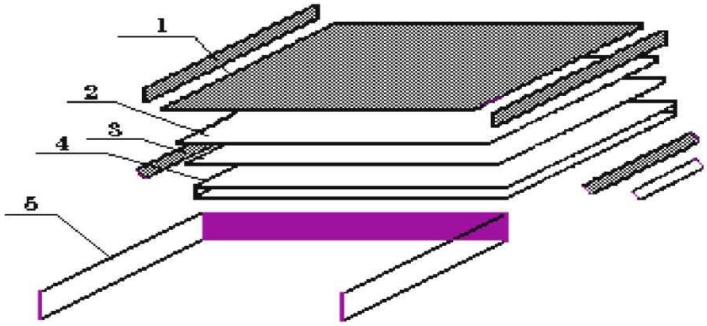

Figure 2. Flat solar collector drawing.

Here: 1- transparent cover; 2nd collecting surface; 3rd heat-insulating layer;
4-corpus; 5- reflection screen.

The collecting surface is a key element of solar collectors. It is usually made of copper. However, in some cases, special types of aluminum and plastic can be used. The collecting surface consists of a series of hollow tubes. It provides solar heat to the water circulating inside the pipe. the surface on which the sunlight falls should have such a property that the absorption of the light flux should be maximal at the minimum level of energy loss. The technology of creating surfaces of such quality, as we know, consists of coating with a selective coating. Every manufacturer, in many cases, uses a little "know-how". In some cases, instead of coating with selective coatings, it is used to cover the surface with special paints that are resistant to the effects of sunlight and cyclical changes in temperature during the operation of the collector. There are many forms of collecting surfaces. However, most of them are steel-welded “Welded surfaces ”or in the form of a grid of barrier pipes for a piece of copper.

The size of solar collectors can vary from 0.5 to 4 m, but in most cases it is around 2 m^2 Transparent coating performs 3 main functions: to create a "greenhouse effect", to protect the collector from the effects of the external environment, to reduce energy loss.

The quality of the fastening elements is of great importance during the installation of solar panels. This is because the solar collector is very large and heavy (on average, it weighs 50 kg per 2 square meters). The collectors have a sufficiently large surface area (usually 2 m sq. M.).

Currently, active solar systems are widely used. Depending on the type of heat carrier in the KEK (solar energy collector) circuit, it differs in fluidity and air structure. KEQaa can be a heat carrier liquid or water, including a gaseous solution of 40-50% ethylene or propylene glycol solution can be an organic heat carrier and others.

Figure- 3 shows a schematic diagram of air-powered solar systems. The device consists of a solar energy collector, a hot air accumulator tank, pumps, connecting pipes and a drying cabinet. Cold air is supplied by the bottom pipe, hot air is transferred from the top to the drying cabinet.

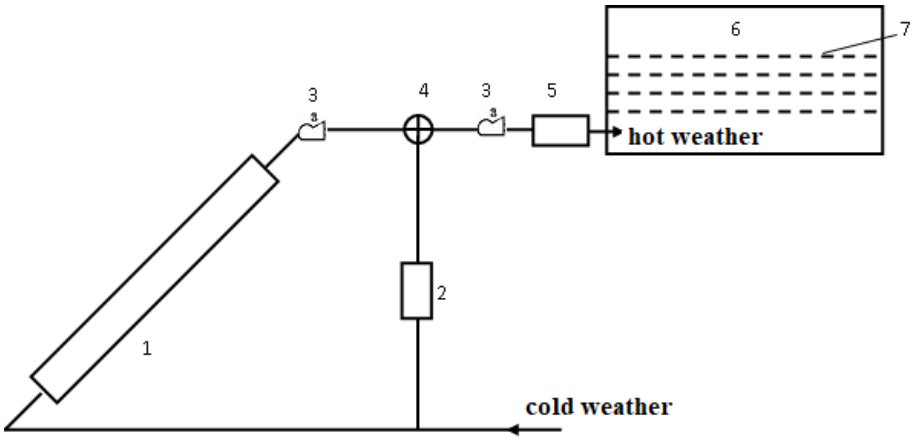

Figure 3. Schematic diagram of a solar heating system Here: 1- Solar energy collector; 2-Shagal heat accumulator; 3- Ventilator; 4-Adjusting valve; 5-Additional heat source; 6-drying cabinets; 7-cocoon sori (racks).

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Due to solar energy, the air in the collector is heated and pumped from the bottom to the cocoon rows of the drying cabinet, and this circulation continues naturally. The average temperature of the air in the upper pipe will be higher than in the lower pipe.

For the rotation process to be good, the connection point of the tank with the top of the pipe should not be less than 2/3 of the total tank height. If such conditions are taken into account, the temperature will rise at the height of the tank. A high temperature is formed at the top of the tank and a low temperature at the bottom. Therefore, low-temperature air enters the collector, resulting in an increase in the collector's FIC and efficient use of solar energy.

The purpose of using a fan in the system is to keep the pressure in the collector higher than the ambient pressure, which in turn reduces heat loss in the collector.

In air systems, there is no possibility of the heat carrier in the collector freezing and overheating during the period when heat is not transferred. In such systems, the decay of metals is not noticeable, and heat regulators are installed. When choosing geometric dimensions and structural materials for solar air heating systems, it is necessary to take into account the requirements for simple household appliances, ie compactness, mobility, lightness, reliability and ease of use.

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