



Analysis of Systems For Creating Optimal Microclimate In Greenhouses

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Annotation: The article presents systems of using geothermal energy sources for heating greenhouses. A climate cell is a geothermal system in which air passes through a series of pipes underground before reentering the greenhouse. When the air is warm during the day, heat transfers from the air to the soil, which increases the temperature of the earth. If the air in the greenhouse is cool at night, when it passes over the warmer ground, it heats up and increases the temperature in the greenhouse.

Introduction

It is required to create a microclimate in order to have optimal parameters in order to achieve high productivity in the citrus-vegetable cultivation system in greenhouses. Energy-efficient greenhouses require correct temperature-humidity regime to increase productivity. One of the important solutions in this field is a hot air handling system with fully designed air exchange ventilation that improves energy efficiency.

The hot air recirculation system is used to heat the air of the greenhouses for the temperature regime worthy of the normative requirement. The hot air processing system in the greenhouses regulates the air temperature, prevents the problem of air cooling during the autumn-winter period of use. In order to create an air recycling system and an optimal temperature level in the upper part of the greenhouse, accurate consumption indicators of natural gas and electricity resources are required in greenhouses. There are many scientific studies on the air processing system generated in the upper part of the greenhouse, and the improvement of the hot air processing technology in the greenhouse is highlighted in the continuation of this scientific research.

Among the tools used in the hot air processing (utilization) system generated in the upper part of the greenhouse: storage of hot air through the soil of the greenhouse, heat supply of hot air through metal air pipes of various shapes, heat supply of hot air through circular PVC (polypropylene) air pipes increasing energy efficiency by providing and modernizing them is analyzed.

In recent years, it can be observed that the cost of fruit and vegetable products grown in greenhouses on a global scale is increasing more and more. As factors influencing this, the



greenhouses in use are obsolete, the high cost of energy carriers for the cultivation of non-seasonal products, optimization of heat-cold and humidity regimes are among the main factors.



1-Figure.Heat transfer pipe

Currently, the relative value of energy costs in the cost of growing fruit and vegetables is 70%. This is a situation that arises due to the fact that electricity and thermal energy are not used effectively in greenhouse farms, and energy processes in existing and newly constructed solar greenhouses are not fully optimized. According to the global development trends of the greenhouse economy, the efficient use of new structures, materials and energy-saving technologies based on solar energy are among the primary tasks. For example, 263,000 hectares of solar greenhouses have been built in the north of China, where 90% of the crops are grown for the winter season.

REFERENCES

1. Пенджиёв А.М. Термический режим в комбинированных культивационных сооружениях. // Гелиотехника. – Ташкент, 2018. – №2. – с. 47-58.
2. Аллаев К.Р. Энергетика нуждается в стратегии. // Экономическое обозрение. – Ташкент, 2018. – №6(222). – с. 40-47.
3. Пирназаров, И.И., & Н Тошматов. (2016). К вопросу о выборе оптимальных и допустимых параметров воздуха при комфортном кондиционировании в помещениях. Me' morchilik va qurilish muammolari, 79-81
4. Islomovich, Ilhom Pirnazarov, 2020. Qishda zamonaviy issiqxonalarni shamollatishning asosiy roli. "Science and Education" Scientific Journal, December 2020, 219-222.
5. Пирназаров, И.И., 2019. Обеспечение экологической безопасности: единство национального, регионального и глобального аспектов. Fuqarolik jamiyati. Гражданское общество. 78-81.
6. Pirnazarov Ilhom Islamovich."THE ROLE OF GEOTHERMAL ENERGY IN THE NATIONAL ECONOMY"/"GALAXY" international interdisciplinary research journal (GIIRJ) An International Interdisciplinary Monthly Journal Volume 10, Issue 1, January, 2022. Part , 114-117.
7. Pirnazarov Ilhom Islamovich. "THE SOIL OF THE SEEDLINGS IN GREENHOUSES HEATING BY GEOTHERMAL ENERGY" Texas Journal of Multidisciplinary Studies volume 4, january, 2022 , Part 20-24.
8. msd.com.ua// teplovoj-balans-i-formirovanie-klimata-teplicy
9. <https://teplitca.kiev.ua>