

ABSTRACT

Master's work contained 103 pages of printed text consists of an introduction, conclusion, list of sources used (22 names), and applications. The work contains 27 tables, 45 figures, formulas .

Object of research s the basic processes of heating and humidity of air and soil that support the ideological climate for plants in a greenhouse of block type (heating, humidification, ventilation, lighting).

The subject of the research is the research of greenhouses as an object of automation and improvement of systems of automatic control of microclimate.

The purpose and objectives of the research. The aim of the work is to develop an effective microclimate control system in the greenhouse.

Objectives of the study:

- to analyze the characteristics and modern systems of climate control in the greenhouse;
- to develop a dynamic mathematical model of optimum control system;
- to test the dynamic mathematical model and its dynamic characteristics of regulation of temperature and humidity;
- selection of modern technical means of implementation of automatic control system of a microclimate;
- to develop a functional structure of microprocessor control systems on the basis of certain tasks;
- to analyze the performance of the developed system;
- evaluation of a start-up project.

Actuality of theme. Through population growth and the depletion of all resources, the issue of malnutrition and hunger. The problem is not only in quantity, but also in its price. Therefore, it is extremely necessary system of automatic management of greenhouses, which will be able to keep optimal conditions of

temperature and humidity during the whole period of plant growth, as light, heat, humidity, fertilizer are the main factors that ensure maximum productivity.

Research methods are based on the main provisions of the theory of heat and mass transfer, mathematical modeling using computer technology.

Scientific novelty of received results is to develop a new ACS greenhouse in which reduced cost, reduced overregulation time, increased speed of informativity.

Practical significance of the obtained results. The results make a scientific contribution to the development of the agricultural and private greenhouses. The development of this ACS, and the results obtained during the simulation in different software environments can also be used in scientific studies of similar subjects.

Approbation of the research results. XI Scientific-practical conference of students, postgraduates and young scientists "look into the future of instrumentation", Ukraine, Kyiv, KPI named after Igor Sikorsky, 2018.

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Key words: CLIMATE, GREENHOUSE, CONTROL, AUTOMATIC CONTROL SYSTEM (ACS), a MICROPROCESSOR CONTROLLER, HARDWARE.