

## AUTOMATED GREENHOUSE CLIMATE CONTROL SYSTEM

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The greenhouses appeared as a product of modern technologies to grow food, and it is an alternative to usual household production. The greenhouses allowed people to increase the vegetation period by creating good conditions and to get more products from square meter. But the maintenance costs have been added to labor costs, which makes greenhouses unprofitable. [1,2]

Maintenance costs can be reduced by using new technologies, such as IT. Thus, the main goals of the “Smart greenhouse” are automation of routine connected with greenhouse maintenance, and reduction of the costs to boost the profits of the production.

Relevance:

- Reducing the costs and getting the maximum result increasing the harvest;
- Automated support of optimal conditions in a greenhouse or a conservatory;

All the analogues are expensive and available only in the USA.

The objective of the development is an automated complex, which purpose is supporting the optimal conditions for plants in a greenhouse or a conservatory.

The goal is to relieve the owners from a variety of everyday problems, to reduce the costs and to get the maximum result.

The purposes of the system are:

- To automate the processes of supporting the optimal conditions in a greenhouse or a conservatory and to relieve the owners from a variety of everyday problems by introducing the intellectual system;
- To reduce the costs and to get the maximum result.

The system requirements are:

- Control of the environment and soil humidity;
- Control the of environment temperature;
- Control of the light;
- The ability to monitor the parameters above in real-time;
- The ability to work in both automated and manual modes (switching the buttons).

As a result of using “Smart greenhouse” system, the labor costs will be reduced and more harvest will be obtained due to the use of modern technology for growing in a protected ground. The “Smart greenhouse” opens up new possibilities for reducing costs, which can be used to restore the soil fertility by means of organic farming and use of effective microorganisms.

### REFERENCES

1. Castillo, Nicolas. (2013). Greenhouse Technology and Management. CABI Publishing. p. 335
2. Zhang, Zhi-Qiang. (2003). Mites of Greenhouses. CABI Publishing. pp. 3-9