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Наукова ініціатива «Універсум» 84301, а/с 65, м. Краматорськ, Україна

Тел.: +38 063 867 32 93 E-mail: mail@iscience.me Web: www.iscience.me

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## PALAMARENKO Y.V. ECONOMIC EFFICIENCY OF PRODUCTION OF LEGAL PRODUCTS BY INNOVATIVE METHODS

PALAMARENKO Y.V., Ph.D

**Department of Economics** 

Vinnitsa national agrarian university

## ECONOMIC EFFICIENCY OF PRODUCTION OF LEGAL PRODUCTS BY INNOVATIVE METHODS

The hydroponic method of growing based on using nutritious substrate – «The system of swimming platforms (DWC)». This method replaces the soil as the basis of cultivation, using a nutrient substrate (solution), which contains all the necessary trace elements, enzymes, organic and mineral substances. Plants do not need to look for the necessary nutrients, as with the soil method. It easily absorbs them from a nutrient solution. What doubles the accelerated growth and complete development of the plant. Also increasing the productivity of the product by 50-60%, than with the soil method, providing an ecologically pure final product.

The design is mobile and easy to make up and to use. It consists of a metal tier frame and is quickly scaled to the size of the room. The cultivation process can be easily implemented in a city, which reduces the cost of the final product from 35% to 75%, depending on the type of culture.

For each design, sensors and instruments installed sensors which analyze the composition of the solution according to the following parameters: pH (acidity), TDS (salt content), and the temperature of the solution itself and the environment in which the plant is located. Installing control modules and devices for supplying necessary solutions, which make the necessary enzymes directly to the root. All elements are easy to replace. These indicators are regulated by the automated system developed for this project.

The automated system consists of: a device management module and software for synchronization of work. Control modules for the solutions supplies are developed on the several types of boards. The system connects to the host computer, which allows real-time remote analysis and control of indicators that ensure compliance with the growing technology in all phases of growth. Plant cultivation does not depend on

external climate conditions. The system creates the necessary indicators of indoor climate (humidity, temperature and cycle of ventilation) depending on the type of culture. In the software of the system the limits of all indicators are set. In the case of increasing or decreasing certain indicators, a signal is sent to the host computer. Depending on the type of system operation, it automatically adjusts the metrics or transmits the data to a remote media and the person manually adjusts the required metric by hand.

Electricity costs are optimized, as various types of meters are installed. Developed by us, LED linear lamps ensure uniform distribution of light flux, provide the opportunity to combine and regulate the spectrum, time of work. Each LED lamp is equipped with a control module that is synchronized with the host computer. This principle of operation allows to regulate the voltage of the lamps, which reduces the use of electricity in 3 times. Lighting runs cycles, increasing and falling. The spectrum of illumination is regulated depending on the cultivated crop.

Young scientists and graduate students of Vinnitsa National Agrarian University have developed a robotic hand-manipulator that will be mounted in the landing and harvesting process on an automated hydroponic farm. The robot-arm can plant grains, transplant plants on each phase of growth. If necessary include direct video or photographed a plant for disease testing and harvesting.

With the help of this technology you can grow some types of vegetables (cucumbers, tomatoes), herbs (basil, broth, salad, tarragon, mint), flowers (gladioluses, roses, orchids), flint, strawberries.

Thus, a 50-60% higher harvest is achieved, which is environmentally friendly, and using much less space.

#### Market benefits:

- 1. Yield increase in 50 60% more than in the soil method.
- 2. Complete automation of the production process.
- 3. Instability of the market of hydroponics.
- 4. The location of the hydro-farm is possible in any place.
- 5. Independence from climate conditions and seasons.

#### Competitive Advantages:

1. Lower cost of production at the expense of cost optimization.

- 2. Energy savings at 3 times due to the use of energy savers and a special LED lamp control module.
- 3. Unique innovative development of production management.
- 4. Introduction to the production of a robotic hand-manipulator for industrial applications.
- 5. Shelving method of production increases output in 3 times.
- 6. Scaling of the size of the hydroelectric plant specifically for each client.

During its business activities, it is planned to apply 2 business models:

## 1) B2B

Consumers: greenhouses and farms specializing in the cultivation of plants by the hydroponic method; greenhouses, private farms; pharmaceutical, food industry and agriculture. Product value: quality (metal frame, fixed mount), reachability (manufacturers' proximity to customers), availability (products are twice cheaper), reliability (round-the-clock service).

### Implementation:

Seedlings and their settings - greenhouses and farms specializing in growing plants by the hydroponic method. Key activities: selling hydroponic structures; establishing a management system.

#### Partners:

Suppliers – manufacturers of components for the provision of raw materials for the creation of structures; Clients – greenhouses and farms specializing in the cultivation of plants by the hydroponic method, enterprises of the pharmaceutical, food industries and agriculture.

### 2) B2C

Consumers: population of the large cities, enterprises of food, pharmaceutical industries and the agricultural sector. Value of the product: reachability; energy efficiency; quality; reliability.

Realization: seedlings – greenhouses and farms specializing in the cultivation of plants by hydroponic method; vegetables, herbs, flowers – to supermarket chains, restaurants, canteens; fresh vegetables to meet the daily needs of consumers in high-quality, nutritious and healthy foods; medicinal plants – to the enterprises of the pharmaceutical industry.

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Key activities: growing vegetables; retail sales at trade shows, fairs, online stores, social networks.

Suppliers – seed plants for seed supply; component manufacturers; organizers of exhibitions, fairs; Internet service providers; service providers in social networks; utility institutions; population.

7. Minimization of the human factor in production.

The required investment amount for the project is 32 190,00 USD. The cost of development a robotic hand-manipulator for industrial applications is 7021,00 USD. Discounted payback period of the project is 2 years 8 months. The sum of variable costs for the year will be 7821,10 USD, and permanent - 13198,00 USD. Net income from business activities for the year amount to 32 297,90 USD, and net profit - 15 629,60 USD, 1 kg of product profitability - 69.4% Return on sales - 48.4%. In order to achieve a return on costs, it is necessary to sell products in the amount of 4515 kg.

# PLYSA V. YO. ANTI-CRISIS MANAGEMENT BY THE INSURER IN THE CONDITIONS OF GROWTH OF MARKET TURBULENCE

Плиса В. Й.

професор, декан факультету економіки, менеджменту та міжнародного права, професор кафедри фінансів, грошового обігу і кредиту,

Львівський національний університет імені Івана Франка

Сучасним інструментом управління розвитком організації в умовах наростаючих кризових змін у зовнішньому середовищі та пов'язаній з цим невизначеності є методологія антикризового управління.

Незважаючи на значні успіхи зарубіжних дослідників антикризового управління страховими організаціями, специфіка проблематики в умовах транзитивної економіки все ще відноситься до числа малодосліджених як у вітчизняній, так і у зарубіжній економічній та управлінській науці. Нині увага науковців зосереджена на подоланні кризи, тоді як все більшої гостроти набуває проблема вчасного попередження кризи та розробки теоретико-методологічних засад здійснення