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ESTABLISHING A VEGETABLES CROP WITH PROFESSIONAL GREENHOUSE

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Abstract: *Due to the changes that have taken place over the last period of time, at the level of the macromedium and micro-environment factors of an agricultural enterprise, the agricultural producer is challenged to have an activity characterized by performance and competitiveness. In order to support the needs of consumers of agri-food products, which suffer from many changes, it is important for the agricultural entity to obtain agricultural production at a higher quality level. This paper presents the stages of the establishment of a vegetable farm with professional solariums and greenhouses, having as main activity the tomato, pumpkin and spinach crops. During the paper, the elements of the micro-society (objectives, risks, market strategies), as well as elements of the macromedi (economic, technological, politico-legislative, natural) will be presented. It is also attempted to briefly present the aforementioned crop technology of vegetables. As a method of analysis, a feasibility study on setting up a vegetable farm will be presented in this paper, taking into account annual expenditure, estimated revenue, including estimated production costs. After analyzing all the elements presented, the section "Results and Discussions" presents the financial result and the recovery of the investment, taking a five-year horizon.*

Keywords: *farm, feasibility study, spinach, pumpkin, tomatoes, solarium and greenhouses, vegetables*

JEL Classification: L6, Q1, O5.

INTRODUCTION

Suncare or greenhouse farms offer the following services:

- Production of autumn tomato crops in greenhouses and solariums
- Early culture of pumpkins through seedlings
- Winter spinach culture, using BIKINI F1 spinach, this is an early spinach type of spinach.

In order for a farm / company to develop on the market, it must meet the following main characteristics

- ☐ Acquiring know-how adapted to high performance technologies
- ☐ Equipping with advanced equipment and technologies
- ☐ Retail expansion and export to the market

These objectives aim at increasing competitiveness on the agricultural services market. In this way we aim to offer solutions to the farms clients, characterized by quality and efficiency at European standards, through the following objectives:

1. Valuing export and retail products to the market
2. Reduce work time
3. Conclusion of partnerships with potential customers outside our country with food units
4. Increase of greenhouse area and solariums from year to year, but also increase of percentage profit with each year.

Equipping with state-of-the-art equipment and technology lies at the heart of the expansion plan for the coming years. This is because it provides real-time accuracy, which means saving time for the company and customers, as well as reducing the cost of providing services.

Risk factors must also be taken into account: Macroeconomic factors are the influence that the general economic parameters, the business environment and the legislation can have on this business.

From the economic projections for 2015 and 2016, although low economic growth, oscillations of inflation and the tax regime are expected, it will not negatively affect the business. The market is a relatively low risk starting from the premise that the company will cover other suppliers with premium quality vegetables. The demand is high and the low offer especially in low-temperature periods, and its risk is close to 0.

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Technology may pose a risk to the extent that the firm will not keep up with global innovation in products and technology launched on the market.

However, we believe that this risk is low due to the fact that the company pays special attention to innovation and has imposed itself on the market with products with a high degree of international innovation and certification.

The risk of internal factors is mainly related to staff and the managerial capacity of the company's initiators. The low number of people scheduled for business management and development, ease of use of the technology, and the low learning curve show a reduced staffing risk and a high capacity adaptation to crisis situations and its timely replacement in order not to interfere with customer service.

MATERIAL AND METHOD

As a method of analysis, a feasibility study on setting up a vegetable farm will be presented in this paper, taking into account annual expenditure, estimated revenue, including estimated production costs. After analyzing all the elements presented, the section "Results and Discussions" presents the financial result and the recovery of the investment, taking a five-year horizon.

The feasibility study of an investment project is a documentation that contains the main characteristics and technical and economic indicators of the investment, which ensures the rational and efficient use of material expenditures, in order to satisfy the economic and social requirements in the respective field.

Performing a feasibility study involves conducting a complex economic, financial, marketing, commercial, technical, investment management analysis to obtain information on the future benefits and risks involved in implementing a project investment.

The primary objective of the feasibility study is to present the estimate of the financial result and the recovery of the investment, taking a 5-year period.

RESULTS AND DISCUSSIONS

Expenditure is estimated by the degree of production (tomatoes, courgettes, spinach) and generally includes the following categories:

Table no.1 Estimation of financial result over 5 years of production

CULTURE	Total production (to)	Selling price (ron / kg)	Income (RON)	Production Expenses (RON)	Advantage
YEAR I					
Tomatoes	600	3	1800000	141400	1658600
Pumpkins	600	4	2400000	107100	2292900
Spinach	100	5	500000	31400	496860
YEAR II					
Tomatoes	700	3	2100000	164967	1935033
Pumpkins	700	4	2800000	124950	2675050
Spinach	100	5	500000	31400	468600
YEAR III					
Tomatoes	700	3.5	2450000	164967	2285033
Pumpkins	700	5	3500000	124950	3375050
Spinach	100	4	400000	31400	368600
YEAR IV					
Tomatoes	700	3	2100000	164967	1935033
Pumpkins	700	5	3500000	124950	3375050
Spinach	100	6	600000	31400	568600
YEAR V					
Tomatoes	700	3	2100000	164967	1935033
Pumpkins	700	5	3500000	124950	3375050
Spinach	100	5	500000	31400	468600

Source: www.insse.ro, own calculations

In table no. 1, the revenues and expenditures made on the basis of production are approximated, resulting in profit for a period of 5 years, this analysis was made for tomato, courgette, spinach. We can see that the most profitable crop is that of pumpkins, with the sale being the highest profit, this is also due to the production quantity of large pumpkins (700 tons).

The sales prices of tomatoes, courgettes and spinach were established on the basis of the average price recorded on the agri-food market of the crops analyzed.

Table no.2 Profit on the 5-year forecast

Culture	Year I	Year II	Year III	Year IV	Year V	Total	Weight %
Tomatoes	1658600	1935033	2285033	1935033	1935033	9748732	30
Pumpkins	2292900	2675050	3375050	3375050	3375050	15093100	45
Spinach	496860	468600	368600	568600	468600	2371260	25
Total	4448360	5078683	6028683	5878683	5778683	167524832	100

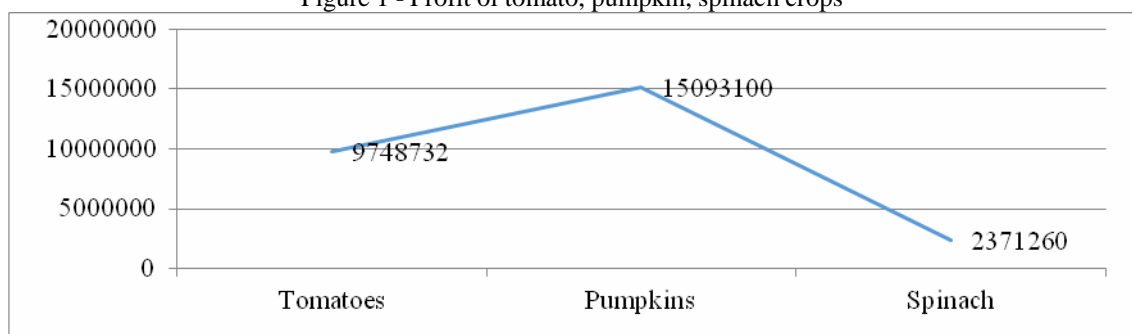
Source: www.insse.ro, own calculations

As mentioned in table no. 1, the highest value of the profit was recorded in the pumpkin crop, accounting for a total of 45% of the total profit.

Second place is tomatoes with a weight of 30%, and the last place is the spinach culture after the profits obtained with a weight of 25%, due to the fact that the spinach is a seasonal product, being obtained at certain times of the year and harvested from early spring or late autumn.

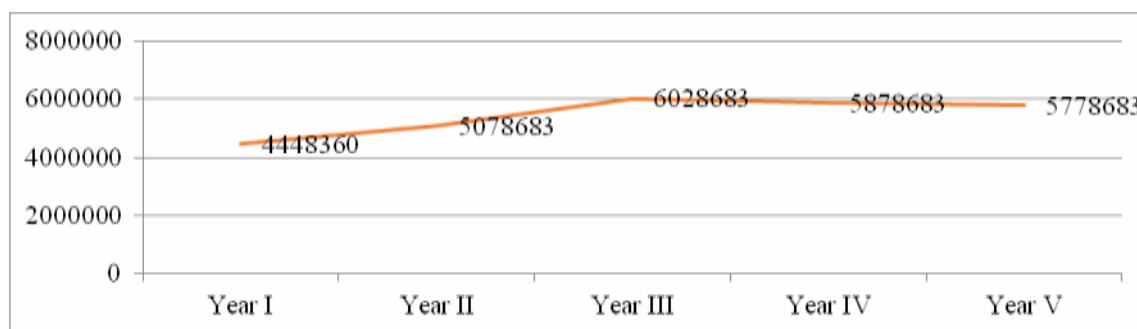
That is why the amount of spinach that is expected to be obtained is 100 tons compared to the quantity of tomatoes and courgettes (600 - 700 tons).

Figure 1 - Profit of tomato, pumpkin, spinach crops



For a more detailed picture we present the crops' profit in figure no. 1 for the 5 years analyzed. Here we can see that the profit of the pumpkin culture followed by the tomato culture was recorded first and the last place is the profit of the spinach culture.

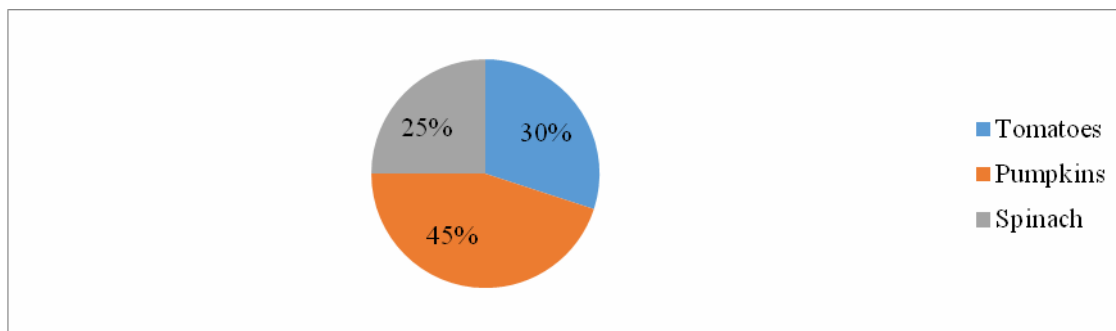
Figure no. 2 - Total profit per year



In figure no. 2, the three analyzed crops observed the fluctuations of the profit, which was increasing during the first 4 years, starting from the level of 4448360 ron in year I, reaching in the

fourth year to 5878683 ron, which represents a 32% increase in the year In the financial year there is a slight decrease of about 1%, this decrease is due to the lower price of spinach (5 ron versus 6 ron).

Figure no. 3 - Share of tomato, pumpkin, spinach



In figure no. 3, we notice that we can find the largest share in the pumpkin culture (45%) with a slight decrease we find the tomato culture (30%) and the smallest share was recorded in tomato crops (25%)

CONCLUSIONS AND RECOMMENDATIONS

Following the presentation of the feasibility study in the present paper, with a view to setting up a vegetable farm with greenhouses and professional solariums, which has as its object the cultivation of tomatoes, courgettes and spinach to briefly state the information:

– Before starting the agricultural business, producers must take into account the market elements belonging to the economic, technological, political - legislative field, but also to the natural environment;

– At the managerial level of the vegetable farm it is important to define the objectives pursued by it:

1. Valuing export and retail products to the market
2. Conclusion of partnerships with potential customers outside our country with food units
3. Increase the area with greenhouses and solariums from one year to the next, and increase the percentage profit with each year.
4. Reduce work time.

Cultures in solariums are among the most profitable for a vegetable grower, but also extremely useful for self-consumption. Current concepts of rational human nutrition give vegetable products a priority position because they provide the human body with a wide range of vitamins, mineral salts and vital water.

They should also be defined according to established objectives and short, medium and long time strategies:

- ☐ Equipment with high performance technology
- ☐ Low cost service strategy
- ☐ Cover the largest market segment
- ☐ The equipment related to the culture space significantly improves the productions obtained both quantitatively and qualitatively
- ☐ Personnel strategies.

In this paper the financial result obtained for 5 years of production in the analyzed crops (tomatoes, courgettes, spinach) was estimated.

It was observed that the highest profit was recorded in the pumpkin culture, followed by the tomato.

The whole work confirms the hypothesis from which we started, namely that such a farm is profitable, the profit constantly increasing throughout the analyzed period, even more after analyzing the legislative framework, we have identified several opportunities for the Romanian farmers (NRDP, aids Natural transitions, APIA subsidies).

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