

THE MUSHROOM – AN INVESTMENT OPPORTUNITY

CULTURA CIUPERCILOR – O OPORTUNITATE DE INVESTIȚIE

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Abstract. *The purpose of the work is to arrange a mushroom nursery with an incubation area of 320 sqm and a harvest area of 480 sqm. For the presentation of the investment project, was identified the amount of USD 192,500, reasoned as it follows: 1 RON 126,000 investment; 2 RON 66,500 for working capital; According to the table, out of the total investment value, 47% of the amount invested will be allocated for the acquisition of the air conditioning system, absolutely necessary for carrying out the manufacturing process. The arrangements' value results from the estimate pre-calculated by the company which runs the main works and from the costs of materials to be used for finishing in own administration.*

Key words: production, mushroom nurse, investment opportunities

Rezumat. *Scopul lucrării este amenajarea unei ciupercării cu o suprafață de incubare de 320 mp și o suprafață de recoltare de 480 mp. Pentru prezentarea proiectului de investiții, s-a identificat suma de 192500 RON, argumentată astfel: 126000 RON pentru investiții; 66500 RON pentru capital de lucru. Conform tabelului din valoarea totală a investiției, 47% din totalul sumei de investit va fi alocat pentru achiziționarea instalației de climatizare, absolut necesară pentru desfășurarea procesului de producție. Valoarea amenajărilor rezultă din devizul antecalculat de firma care va executa lucrările principale și din costul materialelor ce vor fi utilizate pentru realizarea finisajelor în regie proprie.*

Cuvinte cheie: producție, cultura de ciuperci, oportunități de investiție.

INTRODUCTION

It is description of management organisational and total budget to provide *investment and* economic efficiency analysis of cultivation of *Pleurotus* mushrooms.

It was elaborated recommendations and strategies of investment and development of this kind of crop.

MATERIAL AND METHOD

The cultivation of mushrooms is an art, but it is based on science and technology.

However, those who plan to grow mushrooms can be split into groups based on several factors. Maybe the most useful way to split them is to consider what they want to use:

1. Expertise – a person who has worked on a mushroom farm.
2. Waste materials he sees.
3. Waste materials from his own farm or other business.
4. A building he owns, or can get cheaply.

Mushroom cultivation has many facilities requirements. There are no shortcuts to those requirements. If the requirements are not met, failure, or at least poor production is assured. The facilities must provide the environment required for mushroom growth. The facilities must also provide the primary protection against insects, other pests and disease. Without the environment and protection provided by the facilities, management can not protect the crop or obtain good yields.

RESULTS AND DISCUSSIONS

The place where the substrate is pasteurized, cooled, or sterilized must be maintained with greater sanitation than the growing area. It will probably be the best place to spawn as well. The air needs to be reasonable for those working there.

The sums needed to procure the plant, machinery and equipment result from the selection of proposals and marketing studies performed.

Mode of funding

Financing needs will be provided by own sources. The expected rate of net profit is higher than the interest on bank deposits in long term. The term of investment recovery is two years.

The production type chosen for analysis in this plan, is the multi-intensive type, with heating, as shown in the investment programme.

The culture area is 480 sqm, composed of 6 rooms with dimensions of 2 x 40 sqm each, and the number of culture cycles is 6. Incubation lasts 20 days.

The nourishing substratum is, in general, being reused for 3-5 months. Under the conditions of the present planning, the nourishing substratum is entirely replaced in April, August and December.

Given the investment programme required, in the first quarter of the first year there will be no production obtained. The first incubation will take place in April, and the first harvest in May.

Table 1

Investment necessity

Alocari de fonduri	Type	Total (RON)	Period of depreciation (Years)
Infrastructures	D	7350	5
Instalation of climatization	D	58800	5
Equipemnt	D	29400	5
Cars	I	29400	5
Bureau expenses	I	1050	2
Total		126000	
Own sources		126000	

The quantity of mushrooms harvested annually per room will be of 9 t, so 54 t/year for all the 6 rooms. The monthly average of mushrooms harvested will be 4.5 tons. Mushrooms' selling price is 5.6 RON/kg. The purchasing price of the nourishing substratum (cellulose substratum plus supplements, plus mycelium) is 210 RON/t.

The cellulose substratum acquisition price is 90 RON/t. The price rise tendency, both, in sales, as well as purchasing is 5% per year. Forecast situation

regarding production and sales volume is presented in table 2.

From the next table result the following aspects: the production of mushrooms is lower in the first year compared to the coming years due to the fact that at the beginning of the year early investments and arrangement works are carried out, and the number of cultivation cycles is lower; the income earned in the first year of exploitation is reduced, in line with the obtained production; The revenues from the third year exceed those from the second year, even if the mushroom production is constant because of the 5% increase coefficient applied to the selling price; Within the framework of the income obtained, the greatest weight is possessed by the income from the sale of mushrooms. The revenues obtained from the sale of the substratum represent 3.6% out of total income obtained in the first year and 3.61% out of the total income acquired in years 2 and 3.

Table 2

The forecast structure of expenses for raw material and materials

Explanations/Month		1	2	3	4	5	6	7	8	9	10	11	12
Cellu- losed substra- tum	Cantitate (t)	-	24	-	60	-	24	-	60	-	24	-	60
	Unitary price(RON)	-	70	-	70	-	70	-	70	-	70	-	70
	Value (RON)	-	2100	-	5250	-	2100	-	5250	-	2100	-	5250
More Substra- tum	Quantity (t)	-	60	-	60	-	60	-	60	-	60	-	60
	Unitary price(RON)	-	122,5	-	122,5	-	122,5	-	122,5	-	122,5	-	122,5
	Value (RON)	-	7350	-	7350	-	7350	-	7350	-	7350	-	7350
Total raw materials and materials (RON)		-	9450	-	12600	-	9450	-	12600	-	9450	-	12600
Total annual expenses on raw materials and materials (RON)		66150											

In the substantiation of costs anticipation there were taken into account the average prices prevailing on the market nowadays, to which was applied a rise tendency of 5% during one year. The cost of products added at one tone of cellulose substratum is of 122.5 RON/tone.

The cellulose substratum is reused in proportion of 60% for 3-5 months per year, respective February, April and August, when we will buy only 40% of the necessary substratum.

The forecasts summary for annual requirement of raw materials and materials is presented in table 3. The expenditure in the first year will be of RON 56,700 since the first quarter is just for investments. The expenses in the second year will be of RON 69,457.50, and in the third year of RON 72,929.50, due to the forecast tendency of price increase with 5% per year. As part of exploitation

expenses, the largest share is held by the costs of raw material, energy, fuel. These are followed by staff costs which represent a significant percentage out of the total exploitation expenses.

Fixed assets and their liquidation

On drawing up the plan, the company had the following fixed assets:

- land: 1000 sqm = 17,500 RON;
- construction: 600 sqm = 17,500 RON

The arrangements done while constructing are valued RON 7350. The building liquidation is realized in 20 years. Installations, machinery and equipment are liquidated in 5 years. The project is financed by own sources, the capital at the beginning of the period being of 140,000 RON.

The dividends will be reinvested up to 70% in the first year, 50% in the second year and 30% in the third year, so that the stability indicators at the end of the forecast period to place the company in a situation favourable to obtain a credit for development. The provisions for wages are of 5250 RON in the first year, of 5950 in the second year and of 7000 RON in the third one. The amounts obtained in the first year are lower compared to the sums of the following years, because of the lower production obtained after performing the investment activities. The share of net profit in the rate of sales is increasing.

The annual evolution of income and costs is presented in table 4. From table 4 it can be seen an increasing process of income and expenses. The most pessimistic scenario possible to imagine is a reduction of revenue with maximum 20%, reduction generated by the decrease of annual average production. In this situation, the company would record, in the first year, a sales volume of 159,145 RON, with an operating profit of 3.54%, and per total project will record a sales volume of 699,412 RON, with a rate of operating profit of 20%. In this case, the term of investment recovery will be 3 years.

Estimation indicators of the investment project

From calculations resulted the following indicators:

- present net value = 3159274 RON, taking into account a 7 years duration of investment and an update rate of 0.1;
- period of investment recovery = 2 years;
- return index = 28.58;
- the internal rate of return (IRR) = 59.9%;
- the firm value at the end of the 3 years forecast = 108,875 RON.

In the first year of exploitation, the value of gross operating surplus is half of the next year's value due to a reduced period of exploitation, the first period of the year being allocated to investments. Also, the expected maximum production was reached in the fourth quarter of the first year.

In terms of economic and financial indicators, the image of the company is presented in table 3.

Table 3

Economic and financial indicators

Indicators				Company's situation		
				YEAR I	YEAR II	YEAR III
A. INDICATORS OF PROFITABILITY						
Return on equity (financial)	Net Profit/ Capital	%	10%-20% in a normal market economy	28,57	28,57	28,57
Return on assets (economic)	Net Profit/ Total assets	%	5%-10% depending on the profile of activity	12,15	33,54	30,36
Net profit margin	Net Profit / Turnover	%	Higher than average interest rate on the interbank market	13,60	28,44	27,80
Gross profit margin	Gross Profit / Turnover	%	Higher than the average interest rate	16,20	33,86	33,10
Current rate	Circulating assets / circulating liabilities	%	Over 100%	288,20	719,31	1053,95
Rapid rate (acid test)	Circulating assets - Stocks) / Circulating liabilities	%	Over 100%	235,7	670,31	1001,56

As the above table shows, in terms of economic and financial indicators, both indicators of profitability as well as indicators of liquidity show that the company is profitable. The values are in line or even over the values in a normal, functional market economy. The company does not record deficiencies in terms of profitability, nor in terms of liquidities, the rapid rate and the current rate having values over 100% and an upward trend.

CONCLUSIONS

Horticultural products represent an important source of foreign exchange in order to equilibrate the external balance, as Romania is a country which exports vegetables, fruits, grapes, and flowers because it has the natural conditions that few countries in the world have. The quality of fruits, vegetables and grapes produced in this temperate continental climate is unsurpassed.

The cultivation of Pleurotus mushrooms is a rather recent activity. It has only a few decades, compared with the hundreds or thousands of years that other mushroom cultivations have. Its novelty is an asset, and the spectacular development shows that the world market welcomed a modern, simple, cheap, and accessible technology, of an alimentary product so valuable in human nutrition and so wanted in the whole world.

The natural resources for cultivation of Pleurotus are available in Romania in an unbelievable amount.

Regarding the internal mushroom market, the supply is situated far below the actual demand, without discussing about the potential demand, much higher,

which can be activated by means of advertising. At the moment, the consumption of mushrooms is 10 times lower than the normal consumption. This proves how much the domestic market can absorb, and how far away are the times when we could discuss about competition in this field.

In addition to the numerous possibilities offered by the domestic market, export possibilities are multiple, especially for products derived from fresh mushrooms: canned, rough-wrought, mushroom powder, etc.

The establishment of a mushroom nursery proves to be a very profitable investment. The amount needed to start the business is relatively small, as an agricultural land is not necessary. The term of investment recovery is very low. The profit is ensured by the potential of a safe and sure sale market.

Due to the relatively low level of initial investment, the business is permissive and permeable, open to continuous competition.

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