

STUDY ON ECONOMIC EFFICIENCY IN FLOWERCULTURE IN GREENHOUSES

STUDIU PRIVIND EFICIENTA ECONOMICA IN FLORICULTURA IN SERE

POPESCU A.

REZUMAT

Acest studiu a avut ca scop evaluarea eficientei economice in floricultura in serele apartinand unei firme private din apropierea capitalei. Firma dispune de 2,45 ha pe care le cultiva cu flori din speciile Fresia, Crizantema si Alstroemeria, ponderea cea mai mare avind-o florile Fresia. Productia medie de flori a fost 1.200 mii fire/ha Fresia, 405 mii fire/ha crizanteme si 610 mii fire Alstroemeria /ha. Toate cele trei specii asigura o eficienta ridicata, dar specia Fresia este cultura cea mai profitabila. Ea asigura cel mai ridicat profit pe floare 0,023 USD, cel mai mare profit/ha de sera 28.576 USD si cea mai inalta rata a profitului 44 %. In ordine urmeaza: Alstroemeria si apoi crizantemele. Aceste trei specii pot fi constitui obiectul unei activitati productive profitabile pentru orice floricultor care doreste venituri sigure tot timpul anului.

CUVINTE CHEIE: eficienta economica, floricultura in sere, Speciile Fresia, Chrysanthemum si Alstroemeria

ABSTRACT

This study aimed to evaluate the economic efficiency in flowerculture in the greenhouses belonging to a private company next to the capital. The firm owns 2.45 ha greenhouses where it cultivates Fresia Species, Chrysanthemum Species and Alstroemeria Species. The average production was 1,200 thou Fresia flowers, 405 thou Chrysanthemum flowers and 610 thou Alstroemeria flowers/ha. All the three flower species assure a high economic efficiency, but Fresia is the most profitable one. It assures the highest profit per flower USD 0.023, the highest profit per hectar USD 28,576 and the highest profit rate 44 %. Then, in order are coming Alstroemeria and Chrysanthemum. These three species could represent the subject of a profitable productive activity for any floriculturist who would like to get secure incomes all over the year.

KEY WORDS: economic efficiency, flowerculture in greenhouses, Fresia, Chrysanthemum and Alstroemeria Species

INTRODUCTION

In order to satisfy market demand, flowers offer is continuously diversifying and increasing. Flowerculture is a traditional job in Romania, both in the field and greenhouses. New technologies have appeared to support the floriculturists to produce more and more flowers. Fresia, Alstroemeria and Chrysanthemum are among the most required flowers in the Romanian market. Fresia Species is one of the most profitable flowers at present due to its high quality varieties specialised for certain crop methods and length of vegetation. Using special methods for thermic treating of tuberobulbs, the duration of cultivation has been reduced from 9-12 months to 4-7 months. Nowadays, Fresia tuberobulbs production is more important than seed production, because it allows to get high quality flowers and a higher compatibility between Fresia and other types of flowers within crop rotation. There are three arguments sustaining the importance of Fresia production: its exceptional aesthetical qualities suitable for any occasion, the timing appearance of Fresia flowers on the market at the right moment when flower offer is small and the high profitability. (2) For this reason, we proposed to study the economic efficiency in producing the three sorts of flowers mentioned above in a small private greenhouse next to Bucharest.

MATERIAL AND METHOD

The study was achieved on 2.45 ha greenhouses belonging to a private commercial company situated next to Bucharest. The greenhouses are well endowed using modern heating and irrigation systems. The technologies applied within the greenhouses are the modern ones peculiar to every type of flowers. We are referring here only to the main technological aspects related to Fresia production. The tuberobulbs are planted between August and October, at 6-8 cm depth, assuring a density of 80-130 bulbs/ square meter according to the characteristics of the Fresia variety. Wetting is assured by aspersion as soon as planting is finished so that moisture content helps starting vegetation. Then in the days with high insolation rate, 1-2 minutes sprayings are done every 1-2 hours between 11 a.m. and 3 p.m. for decreasing soil and air temperature. Reglone and Glamoxon herbicides are

applied in order to destroy weeds. Fertilisers are daily applied the same time with wetting by means of dripping installation. The length of vegetation till flowers obtaining is 3-5 months depending on variety and planting period. Flowering lasts 1-2 months and average production is 100-120 flowers/s.m. Harvesting starts at the moment when the first flower is ready to open. After harvesting, flowers are sorted by category depending on length and number of flowers within inflorescence. The flowers are preserved at low temperatures for 7-14 days depending on market demand. As soon as flowers harvesting is finished, the plants are still maintained for stimulating the accumulation of reserve substances within the tuberobulbs. Wetting is slowly reduced and stops 2 weeks before tuberobulbs harvesting. After harvesting tuberobulbs are cleaned and preserved in special rooms till a the next planting. In order to study the economic efficiency of flower production for each Species mentioned above, the following economic parameters were recorded: crop structure, average yield, total production, production costs, incomes and profit. The main indicators characterising economic efficiency (1,3) such as: cost/flower, profit/flower, cost/ha, income/ha, profit/ha, profit rate, costs/1,000 incomes and incomes/1,000 costs have been determined and compared between the three flower species to see which of them is the most profitable one. All these parameters are expressed in USD and referring to the year 2002. Only 10 % of the flower production is sold by means of the flower shop owned by the company, the remaining of 90 % is delivered to wholesale market.

RESULTS AND DISCUSSION

The share of the flower species within the cultivated area of 2.45 ha is 77.5 % Fresia, 12.2 % Chrysanthemum and 10.3 % Alstroemeria.

The average yield was 1,200 thou Fresia flowers, 405 thou Chrysanthemum flowers and 610 thou Alstroemeria flowers/ha.

The total flower production was 2,280 thou Fresia, 121.5 thou Chrysanthemum and 152.5 thou Alstroemeria. It was directly determined by the cultivated surface and average yield of each flower species.

Table 1: Cultivated Area, Average Yield and Total Flower Production
 Tabelul 1: Suprafata cultivata, productia medie si totala de flori

Flower Species Specia de flori	Cultivated area Suprafata cultivata		Average yield Productia medie thou flowers/ha	Total production Productia totala thou flowers
Fresia	1.90 ha	77.5 %	1,200	2,280
Chrysanthemum	0.30 ha	12.2 %	405	121.5
Alstroemeria	0.25 ha	10.3 %	610	152.5
Total	2.45 ha	100.0	-	-

The total production costs recorded in the year 2002 were thou USD 140, of which 86.4 % for Fresia culture, 7 % for Chrysanthemum and 6.6 % for Alstroemeria. Of the total costs, labour represents 13 %, materials 38 % and the remaining other costs mainly energy required for heating and irrigation.

The total incomes obtained of marketable flower production are thou USD 197.1, of which 88.9 % are coming from Fresia, 5.7 % from Alstroemeria and 5.4 % from Chrysanthemum.

The total profit got by the firm from flower production and trade was thou USD 57.1. The most of the profit comes from Fresia Species.

Economic efficiency. All the three species are effective as we can see from table 3. If we take into account *cost/flower*, we may notice that the lowest cost is recorded by Fresia Sp., then by Alstroemeria and on the last position comes Chrysanthemum. **The market price** is advantaging Chrysanthemum with USD 0.088 /flower, the Fresia with USD 0.076 /flower and finally Alstroemeria with USD 0.073

/flower. If we consider *profit/flower* as the main criterium of comparison, Fresia Species is on the top, on the 2nd position comes Alstroemeria and on the 3rd one Chrysanthemum. Comparing *cost/ha*, we can say that Fresia crop requires almost double costs than the other two species. It is obvious that production technology involving specific activities, but also cultivated area are the two main determinants. So, Fresia crop is the most costing/surface unit. *Income/ha* varies from a crop to another, but the highest income is provided by Fresia Species (USD 92,263) and then, in order, are coming Alstroemeria and Chrysanthemum. Concerning *profit/ha*, Fresia crop assures the highest level USD 28,579/year, 3.75 times more than Alstroemeria and 10.71 times more than Chrysanthemum. *Profit rate* was in order : 44.8 % for Fresia crop, 21.9 % for Alstroemeria and 8.08 % for Chrysanthemum. Fresia crop assures the lowest costs/1,000 incomes (USD 690), but also the highest incomes/ 1,000 costs(USD 1,449).

Table 2: Production Costs, Incomes, Financial Results
 Tabelul 2: Cheltuielile de productie, veniturile si rezultatele financiare

Flower Species Specia de flori	Production Costs Cheltuieli de productie		Incomes Venituri		Profit	
	thou USD	%	thou USD	%	thou USD	%
Fresia	121.0	86.4	175.3	88.9	54.3	95.0
Chrysanthemum	9.9	7.0	10.7	5.4	0.8	1.4
Alstroemeria	9.1	6.6	11.1	5.7	2.0	3.6
Total	140.0	100.0	197.1	100.0	57.1	100.0

CONCLUSION

- Fresia, Alstroemeria and Chrysanthemum Species can be successfully cultivated in greenhouses. They could represent the subject of a profitable activity for any flowerculturist.

- Fresia is the most effective crop assuring the highest profit/ha, the highest profit/flower and the highest profit rate as well.

- Alstroemeria and Chrysanthemum are also profitable flower species, but they come on the 2nd and respectively on the 3rd one after Fresia.

Table 3: Parameters of Economic Efficiency
 Tabelul 3: Parametrii eficienței economice

Parameter	M.U.	Fresia	Chrysanthemum	Alstroemeria
Cost/flower	USD/flower	0.053	0.081	0.060
Cost /floare				
Price/flower	USD/flower	0.076	0.088	0.073
Pret/floare				
Profit/flower	USD/flower	0.023	0.007	0.013
Profit/floare				
Cost/ha	USD/ha	63,684	33,000	36,400
Cost/ha				
Income/ha	USD/ha	92,263	35,667	44,400
Venit/ha				
Profit/ha	USD/ha	28,579	2,667	8,000
Profit rate	%	44.8	8.08	21.9
Rata profitului				
Costs/1,000 incomes	USD	690	925	820
Cheltuieli la 1.000 USD venituri				
Incomes/1,000 costs	USD	1,449	1,081	1,220
Venituri la 1.000 USD cheltuieli				

REFERENCES

- [1] Manescu, B. (1974) Methods of economic analysis and optimisation in floriculture in greenhouses.
- [2] Preda, M. (1979) Flowerculture
- [3] Scortescu, G., Agache, I. (1987) Study and costs calculation in the agricultural units.

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