THE INFLUENCE OF SUBSTRATUM OVER THE PRODUCTIVITY AND QUALITY OF ANTHURIUM ANDREANUM

Vlad Mariana *, Vlad I. *, Chereji Gh. *

*University of Oradea, Faculty of Environmental Protection, 26 Gen. Magheru St., 410048 Oradea; Romania, e-mail, e-mail: ioanvlad2006@yahoo.com

Abstract

In Romania the flowers are popular and appreciaded by buyers, that is why in the Greenhouses Complex of Oradea, in 2003 – 2005, were made experiments wich can prove the positiv effect of substratum over the productivity, quality and growth of plants.

The Guatemala species were used in the experiment with big red flowers, hartshaped, bright – green leaves (24 – 26 cm/16 – 18 cm), with long stems.

Key words: *Anthurium andreanum*, substratum, production

INTRODUCTION

The beauty of flowers, the fact that they can be hold a long time in water, the high productivity make's Anthurium a very beloved greenhouse plant. Analysing european producers and buyers oppinion, the Anthurium is on the 6th place, after carnations, roses, tulips, chrysantemums and gerberas.

MATERIAL AND METHOD

The experiment contains three versions:

V1 – culture on substratum : 30% peat, 25% wood soil, 25% sphagnum moss,10% perlit, 10% sheep manur

V2 – culture on substratum : 40% peat, 20% wood soil, 10% sphagnum moss, 15% perlit, 5% sheep manure.

V3 – culture on substratum : 50% peat, 15% wood soil, 15% sphagnum moss, 20% perlit.

The thickness of culture substratum was 40 cm, place don warmed barriers.

Every version had 2 barriers of 60 m² eachone, accordingly 120 m².

The substratum was fertilized the same way for each version. During the experiment the ph was maintained between 4,5 – 5,6. The plants were planted in august assuring a density of 7 plants/m² on a barrier.

During the experiment there were made 40 fertilizations with a complex fertilizer, with a concentration of 0,1 – 0,3%.

Acording to table 1 the results were: 80,4 flowers/m² at version 1(substratum formed by 30% peat, 25% wood soil, 25% sphagnum

moss,10% perlit, 10% sheep manur), 99.8 flowers/m² at version 2 (substratum formed by 40% peat, 20% wood soil, 20% sphagnum moss,15% perlit and 5% sheep manur), 105,7 flowers/m² at version 3 (substratum formed by 50% peat, 15% wood soil, 15% sphagnum moss and 20% perlit).

Table 1

The production of *Anthurium andreanum* depending on the substratum's influence

Versions	Flower productivity		Difference	The significance of the difference
	Absolut (flower/m²)	Relativ (%)		
V1 - 30% peat, 25% wood soil, 25% Sphagnum moss,10% perlit, 10% sheep manur	80,4	100	-	-
V2 - 40% peat, 20% wood soil, 20% sphagnum moss, 15% perlit and 5% sheep manur	99,8	124	19	xxx
V3 - 50% peat, 15% wood soil, 15% sphagnum moss and 20% perlit	105,7	131	25	xxx

DL 5%=2.62
DL 1%=4,78
DL 0,1%=8,53

That can be seen the rise in production, on relative aspect, with 24% on V2 and with 31% on V3 as the V1 variant.

On the qualitative aspect, the production of *Anthurium andreanum* is positively influenced by the growing substratum.

Table 2

The production quality of *Anthurium andreanum* influenced by the growing substratum

Variantes	Productivity of cut flowers		
	Total (flower/m²)	Excelent quality	
		Absolut (flower/m²)	Relativ %
V1 - 30% peat, 25% wood soil, 25% sphagnum moss,10% perlit, 10% sheep manur	80,4	66	82
V2 - 40% peat, 20% wood soil, 20% sphagnum moss, 15% perlit and 5% sheep manur	99.8	88	88
V3 - 50% peat, 15% wood soil, 15% sphagnum moss and 20% perlit	105,7	97	92

At version 1(substratum formed by 30% peat, 25% wood soil, 25% sphagnum moss,10% perlit, 10% sheep manure), 82% of flowers were of excellent quality, at version 2 (substratum formed by 40% peat, 20% wood

soil, 20% *Sphagnum* moss, 15% perlit and 5% sheep manur), 80% of flowers were of excelent quality, at version 3, 90% of flowers were of excelent quality.

Making an economic analysis of the 3 versions the best substratum was formed by 50% peat, 15% wood soil, 15% *Sphagnum* moss and 20% perlit.

Because of the high quality of flowers and high productivity , the value of the production was 1247 million lei/ha. The price of the flowers dipends of the cutting period.

The value of the flowers was 1247 million lei/ha. The price of the flowers depended of the cutting period.

Annalising the expences, the cost of electric energy and indirectly expences are 20% of all expences level.

Table 3

Productivity, expense and profit

Variantes	Expense (thousand lei/ha)	Productivity (thousand flowers/ha)	The value of productivity (Thousand lei/ha)	Profit (thousand lei/ha)
V1 - 30% peat, 25% wood soil, 25% sphagnum moss,10% perlit, 10% sheep manur	872334	804	1169334	297000
V2 - 40% peat, 20% wood soil, 20% sphagnum moss, 15% perlit and 5% sheep manur	894454	998	1202454	308000
V3 - 50% peat, 15% wood soil, 15% sphagnum moss and 20% perlit	915640	1057	1247640	332000

The profit at version 3 was higher with 24 million lei/ha as at version 2 and with 35 million lei/ha as at version 1.

CONCLUSIONS

- growing *Anthurium* in greenhouses is a good source of money.

- versions 2 and 3 had a high productivity because of the higher percent of peat and the perlit, 24% higher at version 2 (substratum formed by 40% peat, 20% wood soil, 20% sphagnum moss, 15% perlit and 5% sheep manur), and with 31% higher at version 3 (substratum formed by 50% peat, 15% wood soil, 15% sphagnum moss and 20% perlit) as at version 1(substratum formed by 30% peat, 25% wood soil, 25% sphagnum moss,10% perlit, 10% sheep manur).

The substratum with peat and perlit kept the water and thermic energy inside.

The costs for obtaining the peat – perlit substratum were recovered by the profit.

REFERENCES

1. Selaru, E., 1995 – Greenhouse crops for ripper flowers – Ceres Publishing house, Bucharest.
2. Zaharia, D., 1994 – Floriculture, Tipo – Agronomia, Cluj- Napoca.