

## CONTRIBUTIONS ON THE DEVELOPMENT OF THE STRELITZIA RIGINAE FERTILIZING METHOD

Vlad I. \*; Vlad Mariana \*; Chereji Gh.\*

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

### **Abstract**

*The experiment is looking to choose the best fertilizing method to obtain a high number of flowers..*

*The romanian Triumph species was used in the experiment. It makes a large bush, the flower stem has 120 -150 cm, and the flower is formed by 5 -7 pieces.*

**Key words:** *Strelitzia reginae*, leaves, floral elements, fertilizing method

### **INTRODUCTION**

The long lasting of *Strelitzia reginae* flowers (30 – 40 days) in water, the beauty, makes them very appreciated and wanted by buyers in our country. That is why there were made experiments in the greenhouses of Oradea to prove the positiv effect of fertilization above the growth and productivity of Strelitzia.

### **MATERIAL AND METHOD**

The experiment contained three variantes:

V1 – unfertilized

V2 – fertilized only with mineral fertilizer

V3 – fertilized with half quantity used in V2 and 10 kg/m<sup>2</sup> organic fertilizer.

V2 was fertilized with 1200 kg/ha ammonium nitrate, 1800kg/ha potassium sulphates, 600 kg/ha superphosphate and 600 kg/ha complex.

Every variant was cultivated on 57,6 m<sup>2</sup> and contained 24 plants.

The observations and determinations wich were made are about measuring and counting the leaves, measuring and counting the floral elements and inflorescence..

### **RESULTS OBTAINED**

Frome table 1 comes one that the average lenght of the limb is 43,1 cm, the lenght of the unfertilized plants is smaller, the average lenght is 39 cm, and bigger at variant 3 with an average of 45,5cm.

The average breadth of the limb at all the three variantes is 12,2 cm, but there is a little difference between them.

The average length of leaf stem is 88,2 cm, the minimum values was at variant 2, which makes only 88,5% from the average. The values of variant 1 are near by the average, 100,3 %, while version 3 is remarkable slightly, making 111,1 % from the average length of the variantes.

Looking the diameter of the leaf stalk, the order of variantes is the same as at the length, variant 2 has a diameter of 21,9 mm and the average of the variant is 23,3 mm.

Table 1

The average dimensions of the leaves

Character	Variantes			The average of the variantes
	V1	V2	V3	
The length of the limb/cm	39	44,8	45,5	43,1
% than the average	90,5	103,9	105,6	100
Breadth of the limb/cm	11,5	12,4	12,7	12,1
% than the average	94,3	101,6	104,1	100
The length of leaf stalk/cm	88,5	78,1	98	88,2
% than the average	100,3	88,5	111,1	100
The diameter of leaf stalk/mm	23,8	21,9	24,2	23,3
% than the average	102,1	94	103,9	100

To see the influence of the fertilizer over the plants there were made measurements to determine the length of bud, floral stem, the diameter of floral stem, the length and breadth of sepals, the length and breadth of the united petals, the length and breadth of the free petal (table 2).

Table 2

The dimensions of floral elements

Variantes Character	V1	V2	V3	The average
The length of the bud/cm	19	22	25	22
The length of floral stem/cm	95	140	147	127
The diameter of the floral stem under the bud/mm	23	24	25	24
The length of sepals/cm	12,9	13	13	12,9
The breadth of sepals/cm	2,7	2,8	3	2,8
The length of united petals/cm	8,9	9	9,1	9
The breadth of united petals/cm	1,9	1,8	2	1,9
The length of free petal/cm	11,9	12	12,1	12
The breadth of free petal/cm	1,9	2	2,1	2

The average growth of the bud was 6 cm at every version. The length of the floral stem can be estimated like being proportional to the length of the bud. At the unfertilized plants the average length of the floral stem is 95 cm which is below the normal height. The normal heights are between 120 – 150 cm. The height of variant 2 is 140 cm, of variant 3 is 147 cm, which is next to the superior limit.

The thickness of the floral stem, under the bud, was 40 cm, 24 mm in average, with lower values (23 mm) at the unfertilized plants and over 25 cm at the mixed fertilizer variant.

The length of the sepals is oscillating here by 13 cm, and the breadth near by 2,8 cm. The low values are at the unfertilized variants, the high values at the mixed fertilized variants.

From the three petals of the flower two are bigger and united, forming a single organ, their average length is 8,9 cm at variant 1, 9 cm at variant 2 and 9,1 at variant 3. It is visible that the dimension and the breadth of the petals, is higher at the fertilized plants, with 1,8 cm at variant 1 and 2, with 2 cm at variant 3.

The third petal is free and almost perpendicular on the other two. This petal is bigger with a length between 11,9 – 12,1 and a breadth between 1,9 - 2,1 cm. The higher dimensions are at variant 3.

From table 3 comes on that the mixed fertilized plants had a higher productivity than the plants which were fertilized with mineral fertilizer, but their productivity is also significant.

Table 3

The production of *Strelitzia reginae*

Variantes	The obtained production		Difference	The significance of the difference
	Absolut (flower/m <sup>2</sup> )	Relativ %		
V1 – unfertilized	6,17	100	-	-
V2 – fertilized only with mineral fertilizer	8,36	135	2.19	xx
V3 – fertilized with half quantity used in V2 and 10kg/m <sup>2</sup> organic fertilizer.	9,82	159	3,65	xxx

DL 5% = 1,07  
DL 1% = 1,78  
DL 0,1% = 3,33

According to table 3 the production of flowers had high values from 6,17 flowers/m<sup>2</sup> at variant 1 to 8,36 flowers /m<sup>2</sup> at variant 2 and 9,82 flowers/m<sup>2</sup> at variant 3, culture fertilized with half quantity used in V2 and 10kg/m<sup>2</sup> organic fertilizer.

The relative aspect shows a high productivity of flowers at variant 2, exceeding with 35 % variant 1. Variant 3 had also high productivity, exceeding with 59 % variant 1.

The economic efficiency is propitious for every variant, but the best is at variant 3, – fertilized with half quantity used in V2 ( 600 kg/ha ammonium nitrate, 300kg/ha potassium sulphates, and 300 kg/ha complex) and 10 kg/m<sup>2</sup> of organic fertilizer ( table 4 ).

Table 4

Production of flowers, expense and profit				
Versions	Expenses (thousand lei/ha)	The flower production (thousand lei/ha)	The value of the production (thousand lei/ha)	Profit (thousand lei/ha)
V1 – unfertilized	875000 87,5 RON	61	915000 91,5 RON	40000 4 RON
V2 – fertilized only with mineral fertilizer	888000 88,8 RON	83	1245000 124,5 RON	357000 35,7 RON
V3 – fertilized with half quantity used in V2 and 10kg/m <sup>2</sup> organic fertilizer	905000 90,5 RON	98	1470000 147 RON	565000 565 RON

#### CONCLUSIONS

- growing *Strelitzia reginae* in greenhouses is a good source of money;
- the termic energy and water was propitious for version 3, with organic fertilizer.

#### REFERENCES

1. Zaharia, D., 1994 – Floriculture, Tipo – Agronomia, Cluj-Napoca.
2. Selaru, E., 2004 – Floriculture, Ceres Publishing house, Bucharest.
3. Vlad, I., 2004 – Floriculture, Imprimeria de Vest Publishing house, Oradea.