

RESEARCH REGARDING CAPITALIZATION AS CUT FLOWERS OF *CELOSIA ARGENTEA* VAR. *CRISTATA* 'FILEMON' SPECIES

CERCETĂRI PRIVIND VALORIFICAREA CA FLORI TĂIATE A SPECIEI *CELOSIA ARGENTEA* VAR. *CRISTATA* 'FILEMON'

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Abstract. *Celosia argentea* var. *cristata* is an ornamental species that can be used as a cut flower in the dry state (immortelle). The 'Filemon' variety is also suitable for use in the form of a fresh cut flower. This paper presents the results of research on the use of this variety as a fresh cut flower and its behavior in various substances that can influence the shelf life of flowers. The experiments were organized in four variants: V1 - distilled water (control), V2 - boric acid, V3 - commercial preservative, V4 - acetyl salicylic acid. The substances used positively influenced the shelf life of fresh cut flowers, the best results being obtained in variant V3, followed by variant V4 and V2. These studies are part of the research project 14644/2018 UASMV Iași.

Key words: cut flower, immortelle, capitalization

Rezumat. *Celosia argentea* var. *cristata* este o specie ornamentală care se poate valorifica sub formă de floare tăiată în stare uscată (imortelă). Soiul 'Filemon' se pretează și la valorificare sub formă de floare tăiată în stare proaspătă. Lucrarea de față prezintă rezultatele cercetărilor privind utilizarea acestui soi ca floare tăiată în stare proaspătă și comportarea la diferite substanțe care pot influența durata de păstrare a florilor. Experiența a fost organizată în patru variante: V1 – apă distilată (martor), V2 – acid boric, V3 – conservant comercial, V4 – acid acetil salicilic. Substanțele utilizate au influențat pozitiv durata de păstrare a florilor tăiate în stare proaspătă, cele mai bune rezultate obținându-se la varianta V3, urmată de varianta V4 și V2. Aceste studii fac parte din proiectul de cercetare 14644/2018 USAMV Iași.

Cuvinte cheie: flori tăiate, imortele, valorificare

INTRODUCTION

Cut flowers are capitalized in fresh and dry (immortelle) state, being one of the most important usage modalities of decorative plants. Necessary of cut flowers throughout the year is constituted by flower crops established in protected spaces or in the field.

The assortment of flower species grown in the field and used as cut flowers is of increasing interest among consumers of floral art who prefer cut flowers that are more resistant to transport, packaging and storage for long periods (Redman et

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al., 2002).

The time and method of harvesting, the storage conditions and the possibilities of extending the life span are important forces for cut flowers to retain their decorative value for a long period.

Preserving solutions are widely recommended and can be used to fortify or harden flowers after harvest and extend their life as cut flowers (Ahmad and Dole, 2014; Cantor *et al.*, 2013; Moraru *et al.*, 2018).

Even if *Celosia argentea* var. *cristata* is still considered quite unknown to consumers of cut flowers production, the potential of its utilization increased more and more (Gilman and Howe, 1999; Zuck Cameron, 2015).

Celosia plants are utilized in floral art, being very well appreciated, due to inflorescences with a unique shape, elegant, mainly as cut flower in dry state (Toma, 2009; Buta and Cantor, 2015).

In the last period the usage of *Celosia* plants is more and more diversified, being more often utilized as cut flower in dry state, as well as in fresh state (Ahmad and Dole, 2014).

The aim of the current paper is to study the preservation capacity of *Celosia* cut flowers, in fresh state, having in view the fact that the importance of a flower crop is given by the way in which it is capitalized.

MATERIAL AND METHOD

The realized research aimed to highlight the fact that *Celosia argentea* var. *cristata* 'Filemon' variety offer the possibility of enrich the assortment for its usage in floral art.

In order to achieve the proposed goal, studies were carried out regarding the preservation of flowers in a fresh state and their use in different compositions of floral art.

The research was carried out within the didactic and experimental collection of the discipline of Floriculture, UASVM Iași, Romania.

To carry out this study, the flower stalks were harvested on 28.08.2019. They were harvested by cutting the stems obliquely, close to the ground level, with special scissors used in floral art.

Four experimental variants were organized as shown in table 1.

Table 1

Experimental design	
Variant	Applied treatment
V1 - control	Distilled water
V2	0.01% boric acid (H_3BO_3)
V3	10 g/L Floral Life commercial preservative
V4	85 mg/L acetyl salicylic acid ($C_9H_8O_4$)



Fig. 1. *Celosia argentea* var. *cristata* 'Filemon' (original)

RESULTS AND DISCUSSIONS

The preservation period in fresh state of cut *Celosia* flowers varied from 5 days for variant V1, where were stored in distilled water, up to 10 days for variant V3, where a commercial preservative was administered. Also, good results were obtained with the variants in which boric acid (V2) or acetyl salicylic acid (V4) were used, the storage period being 8 days for V4 and 7 days for V2 (tab. 2).

Table 2

Results regarding storage period as cut flowers

Variants	No. of days from harvesting	% face to control	$\pm d$	Significance of differences
V1 (control)	5	100.00	0.0	control
V2	7	140.00	+2.0	-
V3	10	180.00	+4.0	**
V4	8	120.00	+1.0	-

LSD 5%= 2.1 LSD 1%= 3.2 LSD 0.1%=5.0

Statistically speaking, it was found that the differences compared to the control regarding the storage time of the cut flowers were insignificant for variants V2 and V4, and distinctly significant positive for variant V3 (tab. 2).

Cut flowers, in fresh state, of *Celosia argentea* var. *cristata* 'Filemon', could be successfully utilized with *Celosia argentea* var. *cristata* 'Cherry', *Rosa hybrida*, *Alstroemeria aurantiaca*, *Amaranthus caudatus*, *Ocimum basilicum* (fig. 2) or *Celosia argentea* var. *cristata* 'Cherry', *Moluccella laevis*, *Amaranthus caudatus*, *Echinops ritro*, *Vinca minor*, *Asparagus densiflorus*, *Nephrolepis exaltata* (fig. 3).



Fig. 2. Floral arrangement with Celosia in fresh state (original)



Fig. 3. Floral arrangement with Celosia in dry state (original)

CONCLUSIONS

Celosia argentea var. *cristata* belongs to the category of annual flowering plants, highly valued as cut flowers, being decorative with their unique and diversely colored inflorescences, which can be used in different compositions of floral art.

From the results obtained, the preservation as a cut flower of the ‘Filemon’ variety can be achieved for a period of up to 10 days with the help of the commercial preservative.

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