STUDY CONCERNING THE ENVIRONMENTAL STORAGE FACTORS WHICH INFLUENCE THE DURATION IN WHICH FLOWERS MAINTAIN THEIR QUALITY

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Abstract

Along with the variety, the factors of the environmental culture and the way the operations of the recovery process were applied on the time frame of maintaining the quality of the flowers at the buyer', a particular role is played by the factors of the environmental storage which act throughout the flow (Vlad I., 2011).

In the capitalization process currently applied on the cut (harvested) flowers, the preservation is limited to a few hours, at the production units, for the preservation which is necessary to maintain the quality of the flowers during transport and from a few hours to 2-3 days at outlets, prior to capitalization, depending on the sales rhythm (Maxie W., 2003).

During cold months of the year, and during holidays when the requests are the highest, the flowers are kept for only a few hours at the outlets while they are in water (Halley W., 2011).

During summer, when production peaks appear and demand is lower, the shelf life grows at both the production and the sales units (Gheorghi A., 2003).

Therefore storage takes place from up to 1-2 days before delivery and transport, to 1-4 days at shops before sale, which leads to a reduction of the flowers' shelf life at the consumer (Mastalerz W., 2013).

Key words: flowers, temperature, atmospheric humidity, water.

INTRODUCTION

In countries with large flower production (Netherlands, France) preservation is a mandatory step in the capitalization of the cut flowers, shelf life ranging from a few days to a few months, so that throughout the year there are on the market, the species and varieties of flowers preferred by the buyers (Amăriuței, 2015).

After long-term storage, under special conditions, the flowers can maintain their quality while in the buyer's home for an equal period and sometimes even larger than those that have not been preserved (Băloiu, 2014).

Due to their importance in maintaining the quality of the flowers, good management of these preservation environment factors is an essential condition for prolonging the life of the flowers (Neff, 2004).

The intensity of the metabolic processes (breathing, sweating) to which the life of the flowers is related can be slowed by controlling the

environmental factors in the storage spaces (Nicolas, 1997).Temperature is the main factor which determines the intensity of their breathing and sweating, and also the flowers' consumption of nutritional and water reserves. The use of low temperatures is a safe way of reducing the intensity of the metabolic processes and prolonging the life of flowers (Parey, 1993).

The relative humidity of the air correlates closely with the temperature level, influencing the process of sweating, which produces a higher wilting of the flowers (Apelbaum., 2017).

Although while keeping the flowers in water, a portion of the sweat water exceeds the absorption and the flowers wither prematurely (Fischer, 2014).

MATERIAL AND METHODS

The experiences have been done between June – September 2018 at Sântandrei (Oradea) using William and Scania varieties of carnation flowers. The following variants were engaged:

V1 – flowers kept in water at temperature of 18^0 C and atmospheric humidity of 35%

V2 – flowers kept in water at temperature of 21^0 C and atmospheric humidity of 40%

V3 – flowers kept in water at temperature of 24^0 C and atmospheric humidity of 45%

V4 – flowers kept in water at temperature of 27^0 C and atmospheric humidity of 50%

V5 – flowers kept in water at temperature of 30^0 C and atmospheric humidity of 55%

RESULTS AND DISSCUTIONS

From table 1 it concludes that the longevity of the carnation flowers kept in the buyer's home has varied between 9 and 4 days, depending of the temperature and the atmospheric humidity.

Table 1

Shelf life of the carnation flowers of the William and Scania varieties at the buyer

Variants	Shelf life		±D	The significance of the difference
	Absolute (days)	Relative (%)		
V1 – flowers kept in water at temperature of 18^0 C and atmospheric humidity of 35%	9	180	4	***
V2 – flowers kept in water at temperature of 21^0 C and atmospheric humidity of 40%	7	140	2	**
V3 – flowers kept in water at temperature of 24^0 C and atmospheric humidity of 45%	6	120	1	*
V4 – flowers kept in water at temperature of 27^0 C and atmospheric humidity of 50%	5	100	-	-
V5 – flowers kept in water at temperature of 30^0 C and atmospheric humidity of 55%	4	80	-1	-

LSD 5%- 0,80
LSD 1% - 1,28
LSD 0,1%-2,04

In version 1, the shelf life of the carnation flower was 9 days with very significant difference from variant 4 (control).

In version 2, the flowers were preserved 7 days with distinctly significant difference from the control.

In version 3, where the flowers were kept under normal conditions for the months of June - August at Oradea (24^0 C and atmospheric humidity of 45%) flowers have been preserved 6 days with significant difference from the control.

In version 5, where the temperature and humidity conditions were very high, the flowers have been preserved for only 4 days, the difference from the control being significantly negative.

CONCLUSIONS

1. Avoid keeping flowers in high temperature rooms exposed directly to sunlight. Temperatures of 18-24^0 C are best suited for

maintaining the quality for the appropriate period of time according to certain variety and species.

2. Refreshing the section at the base of the stem by removing a 0.3-0.5 cm portion should be done daily.

3. Before the flowers are placed in the water, leaves should be removed from the stems. If the leaves are not removed they will rot and infest the water.

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