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Vase life extension of four cut roses cultivars (*Rosa x hybrida*)

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Abstract: Cut flowers are very important products for the horticultural industry due to their multiple uses for different occasions. Handling cut flowers from the moment of harvest to dispatch it is a critical process in order to maintain the quality of the product. The shelf life of cut flowers highly depends on postharvest factors which affect cut flowers' quality and respiration. Besides, their depletion of organic compounds is also influenced by several other factors, such as the variety itself, storage conditions, water supply and absorption, endogenous levels of total soluble carbohydrates and the presence of microorganisms. Therefore, the main aim of this research was to investigate the morphological characters of cut roses and their soluble carbohydrates' content during their vase life. The results suggest that the level of carbohydrates did not have a linear association with the vase life of the cut roses. Moreover, the high number of leaves/stem did not increase the ornamental value of the cut roses and nor the length of their vase life.

• Introduction

Consumers are looking for freshness and senescence as criteria for the quality of cut flowers. Several scientific studies suggest that the plants can stimulate, especially flowers, but also a certain style of floral arrangement can improve the activity and well-being of the brain. In the cut flower industry, vase life of the cut flowers is the most important quality that guarantees for costumers.

Cut flowers may lose water during the vase lifespan, indicating a loss of membrane integrity and increased permeability and leakage. Increased leakage of solutes from cells is related to loss of turgidity and visible wilting. It has been suggested that this increase in leakage is due to increased membrane permeability. Flowers arranged in bouquets often consist of such various features as a single flower (rose, gerberas, sunflower) and inflorescence-type flower (lily, gladioli, carnation).

• Material and method

Cut roses were then selected to provide uniformity for the experiment. All damaged samples were eliminated. The stem lengths of roses were cut at 35 cm length, underwater using a sterile blade. The leaves were removed from the bottom third part of the stem. To eliminate the effect of exogenous sugar on the investigated relationships

• Results and discussions

The cut roses that have been studied belong to the category of single stem cut flowers, used mostly in mixed bouquet and flower arrangements.



Figure 2. Flower opening observation during the experiment

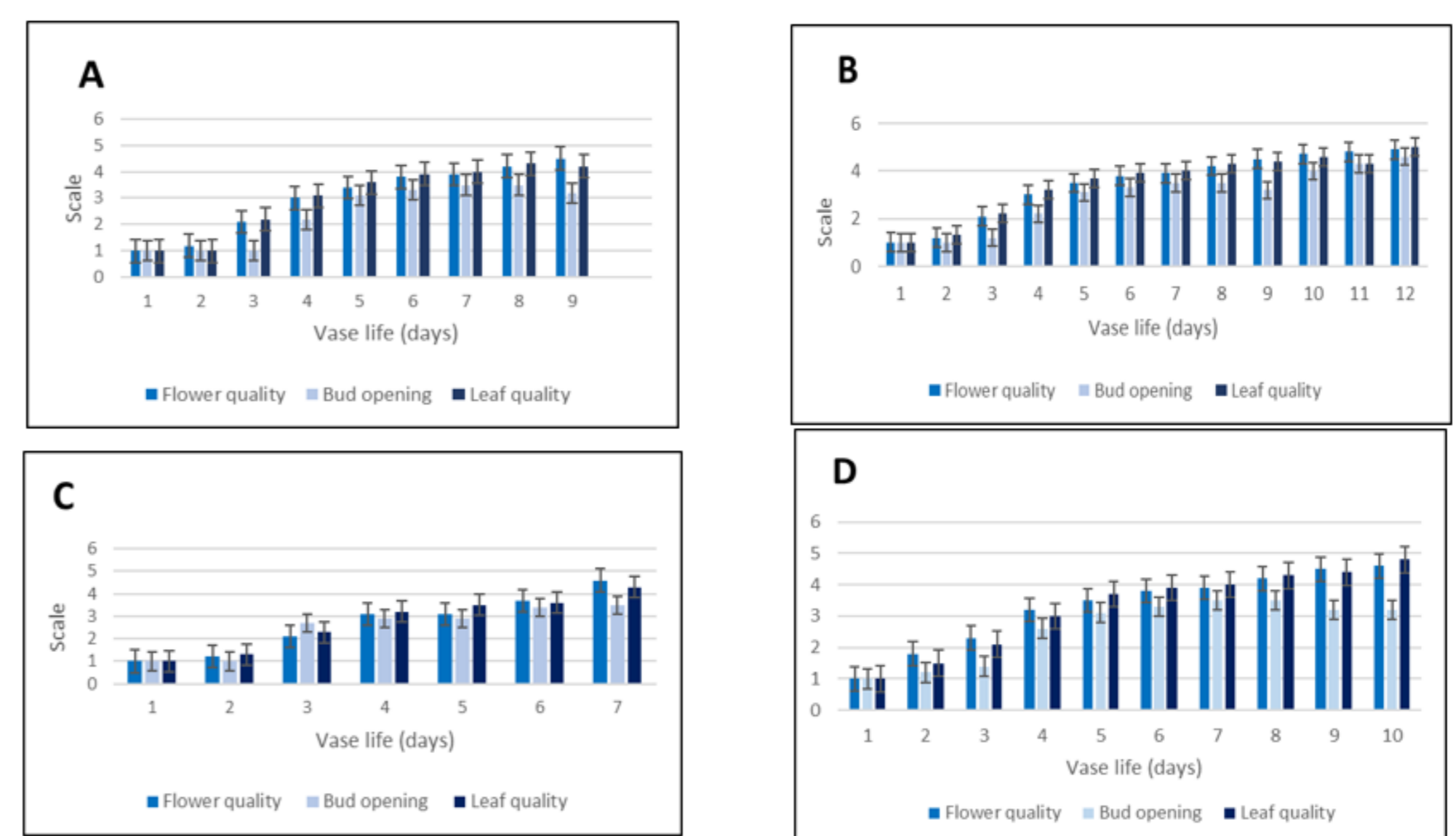


Figure 3. Changes for flower quality, bud opening and leaf quality during decoration (A, B, C and D).



Figure 1. Cut roses in different colors used for the experiment

• Conclusions

As a conclusion, our findings show that the vase life of roses may vary depending on the variety showing slight differences in their evolution even if they undergo the same conditions. The carbohydrate content of the cut flowers which was determined in both petals and leaves shows us a close connection.