

Title Effect of preharvest factors on flower quality and longevity of cut carnations (*Dianthus caryophyllus* L.)

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Abstract

Preharvest factors such as greenhouse management, age of the plants and covering materials affected the physical characteristics (diameter, weight, length), chemical composition (sugar content, anthocyanin and chlorophyll intensities), respiration at 20°C and longevity of cut carnation flowers. Flower colour, size and stem length showed considerable variation. Sugar levels and respiratory rates were correlated with the vase life. There were marked differences (3–5 d) in vase life of STS-treated flowers from different growers. As the plants aged, flower head and stem diameter decreased, but vase life slightly increased. In glass covered greenhouse, flowers had a longer vase life than those grown in greenhouse covered with plastic. However, plastic covering material increased the fresh weight of flowers. Flowers had the largest head and longest stem in spring, but longest vase life in autumn. There were considerable differences in longevity and floral parameters of cultivars Astor, Aurigo, Pink Calypso, Scania and Red Deby. In addition, all factors studied markedly influenced the response of flowers to STS (silver thiosulphate) pulsing and storage at 1°C for one week. It is concluded that preharvest conditions have a considerable effect not only on quality and longevity of cut carnations right after harvest, but also on their response to postharvest treatments.