

Title Assessment of petal colour change in cut-flower carnation 'Santorini' during vase life
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Abstract

Longevity of cut flowers is determined by visual assessment using prescribed, qualitative criteria, with petal quality being accepted as one of the most important. There is little published information on the changes in petal colour of carnations during vase life or the usefulness of this measure in determining flower quality or the acceptability to the end consumer. The petal colour of cut-flower carnation 'Santorini' were assessed over a 12 days vase life period with a commercial chromameter using the CIELAB system. The assessment was conducted on fully expanded, outer petals of 315 flowers, harvested every third day over a 7 weeks period (mid summer to autumn). Significant effects of harvest date ($P < 0.001$) and vase life ($P < 0.001$) were observed for petal L^* , a^* and b^* values. A significant decrease in L^* (lightness) in petal colour was observed during vase life, with an increase between day 0 and 6 and a decrease between day 9 and 12. An increase in a^* and b^* were observed only from day 9 to 12 after a decrease from day 0 to 9). A decrease ($P < 0.001$) in petal lightness was also observed as the production season progressed into autumn with concomitant increases in a^* and b^* values (both $P < 0.001$). These changes demonstrate the potential of the CIELAB system as a simple, reproducible method for determining flower quality immediately after harvest and during vase life.